

# AMIGA

C O M P U T I N G

August 1991

Issue 39

£2.99

## MEDIA MAGNET

Multi-media explored  
and explained

**PREVIEWED...**

**DeluxePaint IV**  
exclusive in-depth  
hands-on report

**REVIEWED...**

**Real 3D v1.3  
& Image**  
Head to head  
3D art special

**PLUS...**

USA Show report  
Latest news  
Machine Code

Desktop Video  
Code Clinic  
Music  
AMOS

Communications  
Desktop Publishing

No disk or  
AmigaFAX cards?  
Ask your newsagent

**europress**  
PUBLICATIONS



9 770959 963008

**£1,500 Wordworth Giveaway**

Keep this number safe!  
You could have won a  
copy of Wordworth

A 42334

# AMOS

**AMOS did all this...  
and much more**



Here's some of the latest amazing public domain programs which show the power and versatility of AMOS.

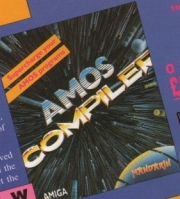
## Turbo-charge your creations...

**Compile** your programs in seconds! Turn your existing AMOS programs into lightning-fast creations that will amaze everyone. AMOS Compiler is unbelievably quick – some commands are more than five times quicker. Typically most programs run at least twice as fast – and AMOS is speedy to start with!

**Squash** your compiled programs by up to 80% (60% on average). Compression is easily done with the built-in compression routine, which is faster than PowerPacker, and opens up the world of cover discs and first-class Public Domain.

**Plus**, with new BOB and SCREEN copy routines and improved multi-tasking for AMOS, the AMOS Compiler gives you all the tools you need to create a super-fast, professional product the world will want to buy!

**NEW  
IN JUNE**



**ONLY  
£29.99**



## Join the AMOS dream machine...

AMOS has become the definitive language for the strong AMOS user club and over 40,000 users! With AMOS it's simplicity itself to display pictures in any graphics mode, add copper list rainbows, write text using any Deluxe Paint font, overlay windows, add pull-down menus, send both software and hardware sprites spiralling around the screen, and add atmospheric music created in Sonix, Soundtracker, Noisetraacker or Games Music Creator (GMC).

**ONLY  
£49.99**



**Nothing will ever  
top it –  
Amiga Computing**

## Enter the world of virtual reality!

Generate outstanding 3D effects as seen in games like Elite, Starglider II and Xiphus with AMOS 3D – the first step towards virtual reality on your Amiga.

The 3D object modeller will enable you to create any complex object using building blocks which you can stretch, rotate, resize and glue together.

There's also 30 new AMOS commands which will enable you to animate your 3D objects in realtime to produce stunning graphical effects.

Soon you'll be creating your very own 3D world and be flying around it in your very own 3D craft!

**ONLY  
£34.99**

**NEW  
FOR JULY**



**MANDARIN**

Order with Access or Visa by ringing the 24-hour Hotline: **051-357 1275**  
Please Quote reference AL3

# Want to know where the real computer enthusiasts get together?

NOW WITH  
**FREE**  
OFF-PEAK  
USAGE\*

## Write here

Please send me my **FREE** copy of the Micronet brochure and show me how to really get 'in touch'.

Name

Age

Address

Tel No

Machine type  C AC2

**FREE MODEM** \* If you pay for a year's subscription in advance we'll give you a modem free when you join

Send the coupon now to: MICRONET, P.O. Box 1351, London, NW2 7HZ.  
OR phone **FREE** on 0800 200 700 for your **FREE** Micronet brochure.

» Micronet is **the place where thousands of computer enthusiasts get together**. You can **talk to other members with your computer**; hold conferences and send **electronic mail**, telex and fax.\*

» **Up-to-the-minute hardware and software news, reviews and features keep you right up to date**.

» You can download the programs of your choice from our constantly expanding selection of **FREE software** programs.

» If you enjoy a **challenge**, Micronet is **the place to be** for today's **best multi-user games**.

» And **direct access to the huge Prestel database** gives you a wide **variety of on-line information**, from share prices to theatre bookings.

» When you join, your **FREE comprehensive welcome pack** tells you all you need to know, and quarterly mailed copies of **LOG ON**, the Micronet members magazine, will keep you up to date and in touch.

» From about **38p per day** (plus local phone charges\*), this is an offer that shouldn't be missed – **get in touch now** for full details.



**FREE**  
DEMONSTRATION

Using a modem and vine-data software, dial 0272 250000 using the ID 4444444444 and password 4444, for a Micronet demonstration – you can look up a local phone no. once on-line.

In touch. Informed. In a word ...

# MICRONET

\* FAX is an optional extra via the INTERLINK gateway. Cheap rate local phone charges are approximately 1p per minute inclusive of VAT.  
■ Applies to system connect charges only



Page  
73



Page  
84

## WHO'S WHO

MANAGING EDITOR Derek Meakin  
PUBLISHER Richard Williams

ASSOCIATE EDITOR Eddie McDendrick  
ART EDITOR Mike Bailey  
FEATURES EDITOR Paul Austin  
NEWS EDITOR John Butters  
TECHNICAL EDITOR Stevie Kennedy  
CHIEF SUB EDITOR Claire Walls  
CONTRIBUTORS Jason Holburn  
Margaret Stanger  
Peter Hickman  
Bernadette Page  
Hazel Roper  
Kevin Obrien  
Lee Ellis  
Peter Bullock  
Stephanie Ross  
Sandra Inley  
Anthony Puntis  
Dorey Aldin

SALES & MARKETING Jane Conway

ADVERTISING SALES Sue Reindel  
John Derbyshire  
Simon Lees  
Michelle Aldworth

AD PRODUCTION  
CIRCULATION DIRECTOR John Burns  
CIRCULATION MANAGER David Wren

SYSTEMS MANAGER David Stewart

Tel: 0625 878888 (All departments)  
051 357 2961 (Subscriptions)

Fax: 0625 879966

**EUROPRESS**  
PUBLICATIONS

Europa House, Adlington Park,  
Macclesfield SK13 0NP

We regret Amiga Computing cannot offer technical help on a personal basis either by telephone or in writing. All reader enquiries should be directed to the address above for possible publication.

Amiga Computing welcomes articles for publication. Material should be sent on an Amiga readable disk. The return of material cannot be guaranteed. Contributions can only be accepted by Europa Press Publications on an all rights basis.

Amiga Computing is an independent publication and Commodore Business Machines Ltd are not responsible for any of the articles in this issue or for any of the opinions expressed. ©1991 Europa Press Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

New Trade Distribution: CDMAG 0895 440086

## COVER STORY

# MEDIA MAGNET

Is multi-media the next step forward for the Amiga, or just another buzz-word?

Amiga Computing investigates 18

## GRAND GRAB

Have you won an A5000 accelerator? How can you win a copy of Wordworth? All is revealed in the second instalment of the great Amiga Computing GRAND GRAB.....140



Page  
32

## THE COVERDISK

### IFF2PCX

Convert Amiga graphics to the PC's paintbrush format with this useful utility.

### Asolve II

Make the most complex maths functions simple to plot and visualise with this science students' dream.

### PrefSet

Now you can load and save as many different system preferences as you want.

### PLUS...

Another great Tune of the month and all of the programs related to our Almanac Code Clinic and Amos pages.

### Classic Arcade Action!

Fight your way through two of the best ever classic arcade games. Defend against hostile nukes in *Missile Command*, and survive a *Storm of Asteroids* in our second game.

### Index

Excellent card index style database. Fast and friendly lists, addresses or disk catalogues. All made easy with *Index*.

**amiga**  
**almanac**  
Something for everyone,  
every month, from the  
Amiga experts

DTV.....125  
Lights!  
Camera!  
Action!  
Desktop Video  
news

Machine code.....127  
The best  
advice for  
coders —  
assembled just  
for you

Music.....129  
Hit the right  
note! Tune into  
Britain's most  
lyrical music  
page





9 great  
offers for  
subscribers  
- Page 144

# AMIGA COMPUTING CONTENTS

## REGULARS

### What's new

Commodore reduce the price of their education bundle ..... 7

### Beginner's guide: CLI

It's not hard to get hard copy when you know how ..... 101

### Public Domain

The very best in PD games and ray-tracing on the cheap ..... 111

### ACAS

What sort of internal disk drive is right for you? Find out from our Advice Service ..... 119

### ESP

Jupiter's moons, viruses and a short circuit. It's a typical month for our very own Ezra ..... 141

### Rock Lobster

The cat, the thief, his wife and her lover... well not quite, but there is a cat ..... 146

## FEATURES

### CDTV steals the show

More hot air than light in the windy city? The CDTV bandwagon rolls on ..... 16

### The producers

With a string of recent hits, and DeluxePaint IV in the pipeline, we visit Electronic Arts ..... 39

### Colours and crops

What's the difference between Word Processing and DTP? Pen Pal tries a bit of both ..... 73

### 3D head to head

Two giants of the ray tracing world go head-to-head in the 3D shape of Imagine & Real 3D ..... 76

### DeluxePaint goes fourth

How do you improve on the world's best paint package? We find out it IS possible ..... 84

### 3D made easy

What is 3D modelling and how can you make it easier? An expert explains ..... 89



### The section of Amiga Computing that takes having fun seriously!

This month we have the hottest reviews of

- 3D CONSTRUCTION KIT • CRIME DOESN'T PAY
- LOGICAL • STORMBALL • LOGICAL
- CENTURION • PROFLIGHT • DISC HYDRA

Add to all these our regular dose of Previews, Cheats

and our exclusive Gallup chart of the top selling games and your trigger finger should already be itching

43



## The Workstation

Make the most of Amiga Computing's exclusive WorkStation disk. This month a look at the many extra facilities of The WorkStation ..... 104

## Special reader offer

Not taking advantage of The WorkStation yet? It's not too late to order your copy. See our special reader offer now! ..... 44

Comms ..... 131



The comms page for beginners. Get online today!

AMOS ..... 133



Our resident AMOS guru helps you write that smash hit

Code Clinic ..... 135



Stuck with C? The Code Clinic may have the cure

DTP ..... 137



From screen to print. The mysteries of DTP revealed

# START COMPUTER SYSTEMS

PLEASE MAKE ALL  
CHECKS OR POSTAL  
ORDERS PAYABLE TO  
"START" AND SEND YOUR  
ORDER TO OUR ADDRESS  
BELOW.

REF. AC08 20 HOLMSIDE  
SUNDERLAND SR1 3JE

PLEASE FEEL FREE TO  
CALL INTO OUR OFFICES  
AND COLLECT YOUR  
ORDER ANY TIME DURING  
OFFICE HOURS

PD DISKS £1.25  
16 BIT POCKET £2.99  
ASTRA TITLES £4.99  
AMOSLICENSEWARE £3.50

EUROPE ADD 50p per disk  
World's Add 25p per disk

PLEASE ADD 50p for  
POST AND PACKING

ALL THESE PRICES  
INCLUDE PREVIOUS  
ADVERTISED  
PRICES. E&OE

PD ZONE IS OUR NEW  
PUBLIC DOMAIN MAGAZINE  
AND CATALOGUE AND IS  
FREE WITH EVERY ORDER!

OVER 400 PAGES packed  
with HINTS ON MUSIC,  
GRAPHICS, PROGRAMMING,  
REVIEWS, NEWS, PLUS A  
CATALOGUE OF OVER 1300  
PUBLIC DOMAIN, FISH  
T-BAG, AND AMOS DISKS

NO ONE ELSE HAS A  
MAGAZINE LIKE THIS!

PD ZONE PLUS SPECIAL  
EDITION COVERDISK ONLY  
£11.95 P&P

REMEMBER NOT TO BE  
FOOLED BY "CHEAP"  
PRICES BECAUSE IT'S A  
SERVICE YOU ARE PAYING  
FOR AND AT START OUR  
AIM IS TO GIVE YOU THE  
BEST POSSIBLE SERVICE  
AND WE HAVE BEEN DOING  
SO FOR NEARLY A YEAR  
NOW.

ALL ORDERS ARE  
PROCESSED BY COMPUTER  
AND GIVEN A UNIQUE  
REFERENCE NUMBER TO  
ENSURE SAME DAY  
DISPATCH BY FIRST CLASS  
POST.

TRY US!

SEE WHY WE'RE THE BEST!

CALL US NOW

091 565 2506

DIRECT ORDERLINE  
24 HOUR

MasterCard  
VISA

## NEW RELEASES!!!!

**745 THE CERNIAL BROTHERS** for  
games to risk of playing the very  
new music disk.

**750 ANY IS WALKER** that cute little  
animal of the squirrel choosing the AIAI. 1  
Mag

**760 THE CORROSE 2** Very good aim of  
the coyote and the Road Runner. Get it 1  
Mag

**770 THE WALKER 400** FOUR SEASONS  
The music composed Anne style by Bob  
Buster. Themes 1

**772 DYNAMICITY Superb** IFT  
series of 4th world music. Get these 1  
Mag

**773 THE HINDKING ICEES** DEMO is  
wickedly tasty BRILLIANT Vectors and  
mag

**780 LAZERZONE** The game conceived  
from the 64's great little shoot-up and  
780 POWERPAC UTILITIES  
Contains: Powerpack, Phones,  
PPhaser, Wpige Etc.

**782 HMM&A** As advertised in Format 24  
for selling HAM options.

**790 BRUNG MUSICBOX** It's some  
decker's' track from BRUNG Get this 1  
Mag

**792 QUARTER SUBSTANCE** A new  
demo from Quarter, and it's MEGA 1

**793 DART GIMPSON** Musical Great  
music in this game. You'll find it 1  
Mag

**794 THE SAMPOIDS** DEMO of the  
Sempor Samois Series. Get this 1  
Mag

**795 NEGARALIA** This is a BRILLIANT  
commercial quality. Get this 1  
Mag

**800 JAPAN** Excellent software  
collection. very good music. Get this 1  
Mag

**801 ASH FOR COPIERS** Need a copy of  
the PD disk for your mail. Get this 1  
Mag

**802 SPANT CARTOON CLIPS** Are  
clips from cartoons for sale. Get this 1  
Mag

**803 STOLEN DATA** A fantasy disk  
imagining the BEST one around 1  
Mag

**806 MESSY-DIO** This is a MUST  
have. It's a game. Get this 1  
Mag

**807 BATHMAN REMIX** Pictures of the  
Bath girl's gothic mix. Get this 1  
Mag

**808 GLOBAL TRAIL** by SILENT AGES  
This is a new 64's disk. Get this 1  
Mag

**809 BEGGINER BENCH** This is a  
must have for beginning users. Get this 1  
Mag

**810 B11 - B12** DO THE BATHMAN  
1/2. Get this 1 Mag

**813 PAT MUSIC** 2 Labels in the series  
some BRILLIANT Music. Get this 1  
Mag

**814 AEROMA DEMO** Very nice vector  
style. Get this 1 Mag

**815 DANCE** Very nice vector style. Get this 1  
Mag

**816 GAMES** and Utilities Spread. Get  
this 1 Mag

**817 CRYSIS** Utilities. About 40  
Programs to take through. Get this 1  
Mag

**818 DEMOLISHER** Utilities. Another  
Buggy - 168 Utilities - Very good.  
Get this 1 Mag

**819 CHES** BILLIARD. Offer 100  
elementary games in one disk. Thanks  
Mike.

**820 CDD** Possibly the best text editor on  
the 640c. Extended VME. Get this 1  
Mag

**821 PD GAMES** VOL 8. Golemish,  
Mistic, Comman, Thank. Ahead.  
Super Games 1

**822 FONTS** and MARBLES. Some new  
fonts and some lovely marble Brushes for  
this is talking to look the colors to  
see how they read as well.

**823 RAZON** 1811 Another nice utilities  
collection by Razon. Program 1

**824 CRYSIS** Utilities. About 40  
Programs to take through. Get this 1  
Mag

**825 DEMOLISHER** Utilities. Another  
Buggy - 168 Utilities - Very good.  
Get this 1 Mag

**826 CHES** BILLIARD. Offer 100  
elementary games in one disk. Thanks  
Mike.

**827 CDD** Possibly the best text editor on  
the 640c. Extended VME. Get this 1  
Mag

**828 PD GAMES** VOL 8. Golemish,  
Mistic, Comman, Thank. Ahead.  
Super Games 1

**829 FONTS** and MARBLES. Some new  
fonts and some lovely marble Brushes for  
this is talking to look the colors to  
see how they read as well.

**830 RAZON** 1811 Another nice utilities  
collection by Razon. Program 1

**831 CRYSIS** Utilities. About 40  
Programs to take through. Get this 1  
Mag

**832 DEMOLISHER** Utilities. Another  
Buggy - 168 Utilities - Very good.  
Get this 1 Mag

**833 CHES** BILLIARD. Offer 100  
elementary games in one disk. Thanks  
Mike.

**834 CDD** Possibly the best text editor on  
the 640c. Extended VME. Get this 1  
Mag

**835 PD GAMES** VOL 8. Golemish,  
Mistic, Comman, Thank. Ahead.  
Super Games 1

**836 RED DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**837 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**838 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**839 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**840 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**841 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**842 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**843 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**844 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**845 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**846 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**847 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**848 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**849 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**850 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**851 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**852 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**853 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**854 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**855 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**856 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**857 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**858 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**859 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**860 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**861 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**862 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**863 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**864 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**865 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**866 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**867 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**868 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**869 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**870 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**871 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**872 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**873 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**874 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**875 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**876 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**877 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**878 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**879 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**880 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**881 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**882 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**883 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**884 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**885 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**886 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**887 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**888 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**889 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**890 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**891 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**892 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**893 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**894 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**895 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**896 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**897 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**898 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**899 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**900 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**901 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**902 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**903 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**904 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**905 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**906 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**907 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**908 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**909 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**910 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**911 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**912 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**913 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**914 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**915 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**916 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**917 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**918 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**919 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**920 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**921 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**922 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**923 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**924 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**925 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**926 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**927 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**928 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**929 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**930 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**931 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**932 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**933 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**934 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**935 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**936 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**937 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**938 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**939 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**940 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**941 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**942 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**943 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**944 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**945 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**946 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**947 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**948 DUCKS** DEMO of the better  
version of the 640c. Get this 1  
Mag

**949 DUCKS** DEMO of the



# WHAT'S new

## Education bundle price slashed as rival firm launches similar pack

By JOHN BUTTERS

AN IMMEDIATE £100 price fall has been announced for Commodore's top selling Class of the 90's First Steps education bundle only weeks after rival firm Atari UK released a similar package.

But the Maidenhead-based computer giant was quick to dismiss speculation that its move had any connection with the introduction of Atari's Family Curriculum Pack. They claim that the price

drop was simply as a result of good sales, and a policy to pass reductions on to customers at the earliest opportunity.

Spokesman Andrew Ball commented: "Irrespective of whether Atari had or not (released Family Curriculum), once our costs had been recouped, we would have passed reductions on to the end user."

Education sales manager, Peter Talbot, added: "Commodore, as a leading supplier to education, is striving to make computers more affordable and

accessible to schools. The First Steps pack represents excellent quality and value for money.

In the £499.99 pack is an A500 fitted with one megabyte of ram and eight software titles including Let's Spell, Deluxe Paint II, Deluxe Print II, a word processor and a multi-media filing system capable of storing sound and graphics.

The pack is aimed at children aged over five and more than 17,000 packs have been bought by UK schools, which are also eligible for preferential prices.



Peter Talbot: "Commodore is striving to make computers more affordable and accessible to schools."

## More support for CDTV as sales take off

AS Commodore's CDTV hit the High Street the computer giant has announced that the machine is to be compatible with Kodak's Photo CD system when it is launched next summer. The Kodak system converts conventional photographs into the format of compact disks and CDTV users will be able to view their photographs on television sets. Up to 100 35mm images will be stored on each Photo CD.

Managing Director of Commodore UK, Stephen Franklin, commented: "CDTV is

bringing the world of multimedia to consumers and compatibility with Photo CDs will be a vital component in this movement."

Meanwhile, sales of the new Amiga-based CDTV are said to be doing quite well. Within a couple of weeks of its going on sale Commodore was claiming UK sales in excess of 2,000, its main problem being to ensure the product is available in shops.

A Commodore spokesman told *Amiga Computing* that sales of the £599.99 machine were split between those familiar with the Amiga but wanting to move over to something less complicated and people who would not buy a normal computer.

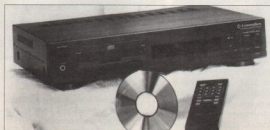
And the firm is continuing to market the CDTV away from the Amiga. In a recent letter to trade magazine *Computer Trade Weekly*, Commodore's Marketing Manager, Dawn Levack, explained that if the multi-media player was shown to be an Amiga computer with a CD then it would confuse and put off those people who fear computers, or have no interest in them.

She said that while those who understand the market and product think its positioning is strange, it is essential that it is seen, regarded and perceived as something wholly new, different and exciting for both the long term and broad appeal of CDTV.

With compact disks, it has been announced that Commodore's CD-ROM, the A690, is to be launched at this year's European Computer Entertainment Show at Earl's Court at the beginning of September.

The CD-ROM will play CDTV disks and plugs into an A500 expansion port after users have first unplugged hard disk drives or external memory expansion. Owners of other variants of the Amiga will have to wait until next year before they see a drive for their machines.

The A690 will cost £299.



Set for launch at the UK's main leisure show is Commodore's CD-ROM. One problem facing A500 owners with hard disks will be that they will have to disconnect the drive before hooking the CD-ROM to the computer

# WHAT'S new

## AT board to run faster

GERMAN hardware specialist Vortex is set to start work on upgrading the Amiga version of its PC emulator, ATonce.

It has had several software upgrades since its release last year but now the developer has decided it is time to change the hardware to increase its performance.

A spokesman for UK distributor Silica Systems (081-309 1111), Andy Leaning, said ATonce Plus "is planned to follow the same path as the (Atari) ST." The speed of the Intel 80286 CPU will be boosted from 8MHz to 16MHz and the board will be on sale in three months.

Industry experts believe the emulator will cost £225, and will lead to a massive price cut for the existing 8MHz ATonce, probably to £149.

Meanwhile Vortex has just finished its 'second generation' A2000 adaptor card which enables an Amiga to be transformed into a fully expandable PC. The £69.95 card is necessary for all A2000 owners planning to use ATonce and allows extra memory and video cards to be accessed by the emulator.

## The fair travels

BRUCE EVERISS, organiser of the All Formats Computer Fair, has said that his next event will be held in September. During the autumn the fair will visit several regions including Scotland, Leeds, Bristol, the Midlands and London.

Everiss said: "No matter where people live in Britain they are going to be a reasonable drive from a show. There is a lot of support for regional shows - the

last show had 70 exhibitors, including all sorts of 'little' people who do not go to big shows."

The organiser of the shows and owner of several computer-related recorded telephone messages has recently moved premises. Bruce Everiss is now at PO Box 71, Bishops Itchington, Leamington Spa, Warwickshire CV33 0XS, telephone 0926 613047.



## Shirts in up to 4,096 colours

LONDONER Peter Feetham, 22, has formed a company, using an A2000 and more than £30,000 worth of print technology to produce prints, T-shirt and sweatshirt illustrations with the computer's 4,096 colour palette.

The Silicon Picture Company (081-556 7607) began operations on June 17th, from Peters home. Disks sent to the company with Amiga-created pictures can be output using professional equipment and returned within four days, although this should be cut down once things begin to settle down.

The firm was set up because Feetham, who always wanted to run his own company, saw a gap in the market for such a service. His background is in desktop publishing work and he has been responsible for producing promotional material for large corporations such as British Telecom and Shell, which will be beneficial when he starts to sell his own designs.

The skills of PD artist Tobias Rikter are being employed at the Silicon Picture Company and Feetham is already hoping that he will be able to take on somebody else before too long.

He charges £5.50 for A4-sized prints, A3 prints cost £6.50 and larger ones range from £10. T-shirt costs are £16.95 and sweatshirts, £19.95, although discounts are available for bulk orders.



Amiga artists can now output their work without having to own expensive printing equipment

## AMIGA people

## Videotaping with the Amiga

THREE new desktop video products for the Amiga have been announced by Syntex Systems (0332 298422).

Editman is a computer-based editing system capable of controlling certain domestic VCRs and camcorders with an accuracy of plus or minus one frame. Auto assembly, insert and audio dub editing is available from mouse-driven icon screens.

IFF files can be edited with or without genlock support, accuracy being achieved without timecode. Cost £587.45.

Users of S-VHS or Hi8 equipment can record animation or computer-generated images without the fuzzy edges that colours found when using the composite PAL signal, with the use of the RGB to S (Y/C) Recording Interface. Using the equipment makes genlocks an alternative that can be avoided. A YUV version is also available for those using professional component systems. Price, £293.70.

Professional Computer RGB Splitter accepts S (Y/C) signals and provides host software with respective RGB signals to get video sourced image grabs into the Amiga. Cost, £234.95.

## Drawing program on the horizon



AMERICAN publisher of the best selling ProWrite word processor, New Horizons Software Incorporated (010 1 512 328 6650), have bought Central Coast Software, publisher of a wide range of Amiga utility packages.

All Central Coast departments have been relocated to New Horizons' headquarters in Austin, Texas, and their Colorado office closed. Central Coast becomes a division of New Horizons Software.

Among CCS's leading Amiga products are Quarterback, a hard disk backup program, and Quarterback Tools, a set of disk utilities for undeleting files, correcting disk problems and increasing disk performance.

File transfer program, Dos-2-Dos, enables files to go between IBM-compatibles and an Amiga and vice versa. Mac-2-Dos does a similar task but gives a link between Apple Macintosh and Amiga systems.

President of New Horizons, James Bayless, said: "Central Coast Software publishes a superb line of Amiga utility software. As with the New Horizons' products, their products are characterized by powerful features and exceptional ease of use.

"With the addition of their products to our existing line we can provide a wider selection of high quality software to solve the needs of Amiga users."

Amiga Computing can also reveal that the next package to come from the New Horizons stable will be DesignWorks, a structure drawing program which should be available within weeks.

It is described as being the ideal tool for creating any type of detailed drawing, treating graphic elements as independent objects. Designs can be up to 100 inches by 100 inches and all 4,096 Amiga colours can be used.

An unlimited number of drawing layers and a text system that enables any combination of Amiga fonts, sizes and styles are available. Up to 10 drawings can be open simultaneously and the firm claims that, because of its high resolution printing, near PostScript quality results can be obtained from a normal dot matrix printer.

A minimum of 512K memory and Kickstart version 1.2 is sufficient to run the program but New Horizons recommends the use of a second drive. At the time of going to press a UK price had not been finalised although it will sell for \$125 in its homeland.

Shortly before its takeover Central Coast Software struck a deal with distributor Silica Systems (081-309 1111) for their entire range of Amiga products to be sold in the UK. This arrangement continues.

# You deserve the best!

## Now you can get the best... with PEN PAL!

A word processor with immense power to deal with most situations and... it includes a Database! It's all so easy to use, you probably won't need to refer to the extensive 250 page manual too often.

Whilst working, you can open up to four documents simultaneously (memory permitting), search and replace; cut, copy and paste; check your spelling with a 100,000+ word dictionary. You can import your favourite IFF/HAM graphics, from programs such as DPaint II or Clip Art, in various sizes and colours. You can automatically flow text around graphics in any Workbench compatible font (there are over 200 available styles), in different sizes and colours to suit your design... even as you type! All this from a word processor and Much More!

As you can see, this is not just any ordinary word processor! Full Page View with position, edit and creation of graphic objects. Mail Merge using the built in database and forms designer. Creation of templates for complex reports, into which the database can be merged. Operating with 32 fields per record, and 32,000 records per database with a fast sort of 1000 records in less than 5 seconds this is a real database.

Pen Pal requires an Amiga 500/1500/2000 or 3000 with a minimum of 1megabyte available memory.

**Pen Pal**  
When...you deserve the best!  
**£79.95**

"...its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically wrap text around graphics..."  
*Amiga World...Jul. '90*

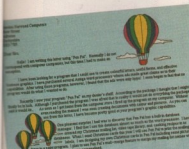
"...without beating around the bush Pen Pal is very special..." - "There is little to fault Pen Pal and it deserves to be..."

*Amiga Format...Dec. '90*

"...I am extremely pleased with your product especially the Graphic Capabilities within the Word Processor. Having the Database on the same disk has made PEN PAL the best program I have..."  
*D.S.B., Plumstead, LONDON*

"...Please let me tell you how amazed I am at how EASY IT IS TO USE PEN PAL. The manuals supplied are very informative and very clear..."  
*P.S.S., Clifton, NOTTINGHAM*

"...A most excellent piece of software..."  
*E.P.H., Strathclyde, SCOTLAND*



Trade Distributors...

**SDL**

**HS**  
Precision Software



Man's (and Woman's) Best Friend

**Pen Pal Order Line**  
**0773 836781**

Pen Pal is also available from good computer stores everywhere!



Pen Pal is available from good computer stores everywhere, and is supplied into the UK through...

**GORDON HARWOOD HARWOOD HARWOOD Computers**

Gordon Harwood Computers  
New Street Alfreton Derbyshire

# Wordworth

## *a writer's dream*

The graphical nature of Wordworth® makes producing documents faster and easier. The WYSIWYG display shows exactly how your printed document will look, different fonts, styles and sizes, headers and footers, graphics and so on.

Commands are grouped under a series of pull-down menus, accessible either by the mouse or keyboard. Frequently used commands have on-screen icons, including Help, should you need it.

Experience the look and feel of the new and exciting WB2 (even if you use WB1.3).

Digita's® innovative *Human Interface Protocol*™ is incorporated and sets new standards in speed, style and elegance. Each document is a separate multi-tasking window, which means you could for example, print one while editing another.

Graphics have always been the Amiga's strong point. Now it's better than ever. Pictures from Deluxe Paint can be placed in a document, and then sized, scaled and dragged (text automatically reformats around the image).

Wordworth's enhanced fonts will give you the very best printed quality. You can also print special symbols, such as boxes, arrows and so on. Better still, you can mix graphics, Wordworth's enhanced fonts, Amiga fonts, Colorfonts and your printer's own fonts, all on the same page.

Wordworth integrates with most word processors, and so you'll be able to use any documents created with Kindwords, Wordperfect, Prowrite, Protect, Excellence, and any ASCII or IFF Text document.

As Amiga Computing put it: "the only Amiga word processor to rival Protect for speed. I would recommend the program to anyone thinking of buying their first word processor or upgrading from Kindwords."



Wordworth is written in the UK by Digita. Which means you'll be using an English Collins spelling checker and thesaurus, and you'll know where to come for professional support.

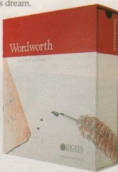
When Amiga Format said "a new word processor that will give the rest of the world a run for its money" they weren't joking. "Wordworth is the most user-friendly word publisher on the Amiga." Praise indeed.



The only way to really appreciate Wordworth is to use it. Phone 0395 270273 for more information or, write to Digita, FREEPOST, Exmouth EX8 2YZ.

Wordworth costs £129.99, which includes VAT, postage and packing. If you already own a word processor and purchase Wordworth direct from Digita, you can save £30 by returning your original disks with your order.

Wordworth will be your writer's dream. However, if you don't agree with us (and purchased directly from Digita), return it in original condition within 7 days and we will refund your money.



Machine support  
Written specifically for the Amiga  
Fully supports WBV 1.3 and V2.00  
Supports all medium or high resolution modes (mono and colour)  
Requires 1MB of memory

**DIGITA**<sup>®</sup>  
INTERNATIONAL  
*software thats right*<sup>®</sup>

Digita International Ltd Black Horse House Exmouth EX8 1JL ENGLAND Tel: 0395 270273 Fax: 0395 268893

- A member of the Digita group -  
Digita, the Digita logo, Wordworth and the Wordworth logo are registered trademarks, and IFF, Human Interface Protocol and software that's right are trademarks of Digita Holdings Ltd.  
All other trademarks and their owners are acknowledged. Sold subject to standard conditions of sale 7/87

WHAT'S  
new

Westminster Exhibitions (081-549 3444) has announced details of interesting Amiga products expected to be displayed at the 4th International 16-Bit Computer Show, to be held at the Novotel, Hammersmith from July 12 to 14.

The 160 exhibitors at the show will be displaying the latest software and hardware in the leisure and business market, with several companies expected from North America and mainland Europe ready to launch products in the UK.

Tornado flight simulator ProFlight will be demonstrated on the HiSoft stand. It has recently been converted from the Atari ST and is the most realistic Amiga flight simulator.

## Show promises plenty for AmigaSHOW organiser

But the Bedfordshire-based software house are best known for their professional programming packages and a new easy-to-learn Pascal system will be unveiled at the Novotel. The firm's C Interpreter should also be available in time for the exhibition.

From Precision Software there will be Superbase Professional 4, a database package with graphical applications that support sound samples and pictures.

Pen Pal, Precision's wordprocessor,

can open up to four documents at once and has cut and paste and spelling checker facilities.

Surface UK will have several new products from American Supra Corporation including the firm's new range of modems and SupraRAM 2000.

Other new products will be shown by Microdeal, educational software from LCL and the new RX-500 one to eight megabyte ram expansion for the A500 will be available from WTS

Electronics. There will also be an opportunity for visitors to meet the editorial staff of Britain's Brightest Amiga Magazine at the Europress Publications stand, who will be happy to hear your comments about the magazine

## Domark makes its mark in the USA

GAMES giant Domark Software have formed an American subsidiary and announced a line-up of CDTV products for users on the other side of the Pond.

Domark USA (010 1 415 856 4374) will be headed by Randy Broweleit, a person who has gained previous experience in the US market with software houses SSI and Tengen.

"Domark have some great products that will do well in the States. I aim to build their brand over the next few months and that means a strong commitment to marketing," he commented.

The first products to hit the American market will be 3D Construction Kit, "Nam and MiG-29 Fulcrum. But the States is also set to see three releases for the CDTV. The first, Trivial Pursuit, is to be closely followed by whodunnit crime busters Herewith the Clues and Murder off Miami.

## Going for a better scroll

SCROLLING package, the Big Alternative Scroller, has had two major changes to improve its use.

The scrolling has been improved to get rid of flicker and specialist training days are being offered to customers to use all the facilities that are up and running at Alternative Image (0533 440041), such as 3D Modelling incorporating full 24-bit graphic output, video graphics and DTP.

Users can upgrade from version 1 to version 1.03 by sending their original disk with a cheque for £3.50 to cover administration costs.

## A programming guide

PROGRAMMERS wanting to advance from writing Basic demos can graduate to C and Intuition after reading a new book, *Intuition - A Practical Amiga Programmer's Guide* from Kuma

Computers (0734 844335). It is the first in a series of Amiga programming books planned by the firm. Author Mike Nelson has given many examples of the Amiga's Graphical User Interface, believing that the best way to start learning to program is by looking at modifying other people's code.

Programs can either be typed into the computer or obtained on separate disks. The explanations of the code in the book are detailed and, in places, repetitive to reinforce some of the more unusual concepts.

The book has a strong emphasis on practical programming and costs £16.95 and the disk version of the listings contained in the book costs £10.

## Colour upgrade

PHOTON PAINT users are being given the chance to upgrade to Oxi's (010 1 213 427 1227) new 4,096 colour paint program, Aegis SpectraColor.

Oxi president John Houston told Amiga Computing: "All Photon Paint owners benefit from SpectraColor's additional features, but for a very affordable price.

"SpectraColor is the first HAM paint program ever released for the Amiga to support full DeluxePaint-style Brush Animation and Key Frame Animation."

Owners of the earlier product should send the original main program disk or a photocopy of their manual, together with \$64.95 to the firm at 1339 E. 28th Street, Long Beach, CA 90039, USA

## Do you know something we don't?

Although Amiga Computing has scores of contacts in the Amiga world, we also need you. If you have some hot news pick up the phone and ring John Butters on the newdesk now on 0625 878888.

All information supplied will be treated in the strictest of confidence and if it's really good your wallet will be heavier.

## Top printer at under £300



Making quality 24-pin printing more accessible to Amiga owners is Fujitsu's new DL900

AMIGA beginners are being targeted by Fujitsu Europe (081-573 4444) for a new entry-level 24-pin printer costing less than £300.

The desktop DL900 has 110-column printing at 10 characters per inch and seven resident fonts including Courier, Boldface, Prestige Elite, Compression and Correspondence. It boasts a print speed of 180 characters per second in draft mode and 60cps in letter quality fonts.

It has three emulations, Fujitsu DPL24C Plus, IBM and Epson and while the price is promised to be under £300, an exact figure has yet to be decided.

Meanwhile rumours suggest that a low cost 9-pin printer is to be available soon from Amiga distributor Silica Systems (081-309 1111).

Details of the machine remain sketchy but sources close to the firm have revealed that it will boast a print speed of 162 characters per second in draft mode, yet will be priced low.

It is thought Citizen might be the mystery manufacturer of the printer.

# WHAT'S new

## Lasers added to printer range

PRINTER manufacturer Kyocera Electronics (0734 311500) has added two new laser printers to its range and cut the price of others.

Hitting the market are the F-5000, a single bin printer which can print on either A3 or A4 paper priced at £5,350 and the £1,995 F-820, a dual-bin laser turning out eight pages per minute.

Kyocera models seeing a price reduction of about £500 are the 10 page per minute F-2220S to £2,920, the 18 page per minute F-1800 to £2,920 and the F-3300, £3,650.

Marketing communications man-

## Fine tuning for pianists

LEARNING to play the piano will become much easier with the introduction of a learning program from MindScape (0444 831545).

The Miracle Piano Teaching includes software, books and a keyboard and uses an artificially intelligent teaching system to automatically set the level of difficulty appropriate to the student's ability.

The fully-compatible Midi key-

board has built-in speakers and can operate as stand-alone. There are 360 lessons which company spokesman Simon Harvey claims will "take you

from learning the position of Middle C to Beethoven".

A series of games aid in the teaching of keyboard recognition and rhythm and stereo headphones can be attached to make the lessons private.

It will cost £249 and should be available in September. There will be a preview of the system at the International Music Show at London's Olympia on July 12 to 14.



ager Neville Rawlings says: "We naturally view our price reductions as a positive move towards gaining ground in a highly contested market."

## Silica goes on air

LEADING Amiga distributor Silica Systems (081-309 1111) is believed to have become the first computer dealer to use radio for an advertising campaign. Over the bank holiday weekend May 24 to 27 the firm used London radio stations Capital Radio and Capital Gold to promote their 'Mad Spring Sale' and kept their Sidcup offices open to accept enquiries and orders.

Silica spokesman Andy Leaning says that they were the ideal stations because the audience, of up to 3,000,000, is made up of typical Amiga buyers.

"The market place we wanted to address was not represented by other media, such as those that wouldn't normally read the computer press," he commented. "You can never tell the response from radio immediately, but people see you as a more respectable company."

Leaning refused to comment on the cost of the promotion.

## Animation at city festival

EDINBURGH-based Amiga Centre Scotland (031-557 4242) will be holding the 1991 Computer Animation Competition and Exhibition to coincide with the city's annual festival.

Last year a similar event was organised and because of its success and a growing interest in computer animation the firm is once again hoping to attract a high standard of original work from Amiga users.

There will be prizes of both hardware and software for the winners and work will be exhibited at the company during the 1991 Edinburgh Festival, to be held on August 21 to 28.

Entries should be submitted on either floppy disk or PAL video tape and should

be accompanied by an official entry form which is available from the firm. The closing date for entries is July 31, 1991.

## Communication from the States

AMONG several additions to Supra Corporation's family of modems is an internal model for the A2000 and A3000.

SupraModel 2400 Plus has MNP 2 to 5 and CCITT v42bis error correction, to give up to 9,600 bits per second throughput when communicating with other v42bis modems and 4,800bps with MNP 5 modems.

Hayes compatible, it is an autoanswer and autodial modem supporting v21, v22 and v22bis protocols. Included with the pack is A-Talk III comms software and it sells for £169.95. An external version of the same modem is available without software for £199.95.

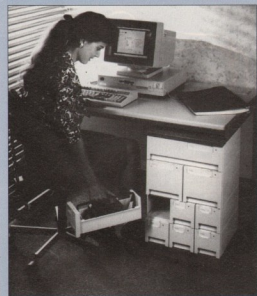
Lower down the range is the SupraModel 2400 MNP, which has the same specifications apart from the absence of v42bis error correction. Costing £179.95, it will, before too long, be upgradable to the same standard as SupraModel 2400 Plus for about £30.

A more specialist modem in the range is SupraModel 9600 Plus, available only as an external modem and again offering MNP 2 to 5. Selling for £549 this v32 model gives v42bis up to 19,200bps.

All the modems are available with a five-year warranty and registration by Surface UK (081-566 6677). Albany-based Supra can be contacted on 010 1 503 967 9075.

## Whoops!

Amiga Computing would like to apologise to Castle Software and its customers for printing incorrect pricing information in an advertisement in the July issue.



## Disk storage to be tidier

DISK storage is a problem facing many Amiga users. Floppies either lie scattered across desks or in disk boxes piled high, making access to the game in the bottom box a tedious task.

But things are set to change thanks to a new storage system from Kent firm Accodata (0732 885555). Disk File is made up of stacking boxes which slot together and can be built into a shape and size that suit the user.

Each has a carry handle to enable the box to be transported. An optional extra is a bracket system which will connect the Disk File under a desk surface as a drawer.

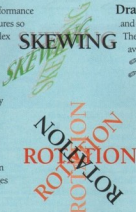
A 300-disk file costs £60.

# Introducing Saxon Publisher & Draw 4D to the UK...

**Saxon Publisher** provides you with performance unparalleled by other DTP programs, with features so powerful and flexible that even the most complex documents can be created in a fraction of the time. A program that incorporates numerous advanced typesetting features not available anywhere else - at any price. Saxon Publisher will change your perceptions about what a truly professional DTP program should be...

## The DTP Standard for the Amiga

- ✦ Text sizes up to 2000 points
- ✦ Import text from any Amiga WP
- ✦ Rotate, Scale and Skew text in any direction
- ✦ The ability to import and print 24 bit images without conversions utilities
- ✦ Support for Encapsulated PostScript



**Draw 4D** is the first Multi Dimensional Structured Drawing and animation software for Desktop Publishing and Video.

The interface is the fastest, smoothest and easiest to use available on any computer.

- ✦ Zoom range is nearly unlimited
- ✦ DRAW 4D is fully multitasking



## PICTURE DISTORTION

Saxon Publisher V1.2....£249.95

Draw 4D....£149.95

Saxon Publisher/Draw 4D Package...£349.95

## ...and the New Supra Range

**SupraDrive™ Floppy** quiet reliable floppy disk drive works with all Amiga® computers. 1MB unformatted capacity. Pass-through port for connecting additional drives...£89.95.

## SupraDrive™ Removable

Syquest™ removable cartridge drive for the A500 or 2000. Great for primary & back-up storage. Comes complete with SCSI interface, or as add-on drive. INTERNAL £599.00 EXTERNAL £599.00

**SupraDrive™ 500XP** Micro-power hard drive, SCSI interface, & RAM for the A500. Easily expands for 1/2 to 8MB RAM. Includes Amiga bus pass-through, SCSI port, software. From £425.00

**SupraDrive™ WordSync™** Easy-to-install, autobooting hard disk card for the Amiga 2000. Uses high-performance Quantum™ hard disk & includes SCSI port, utility software. 40MB £425 · 52MB £475 · 105MB £625

**SupraRAM™ 500RX** 1/2, 1, 2, 4 or 8MB of FAST RAM for the Amiga 500. Easy to expand. Zero wait states & hidden refresh. Amiga bus pass-through. From £129.95

**SupraRAM™ 2000** 2, 4, 6 & 8MB of FAST RAM for the A2000 & 3000. Easy to expand. Zero wait states & hidden refresh. Four-layer board improves reliability. From £119.00



**SupraModem™ 2400** 100% Hayes™ - compatible 300, 1200, 2400 baud modem for virtually all computers. Compatible with all popular telecommunications software. £149.95

## SupraModem™ 2400 Plus

SupraModem 2400 with MNP5 & V.42bis error correction & data compression protocols.

Allows transmissions up to 9600 bps. £199.95

**SupraModem™ 2400zi** Internal half-card modem for the Amiga 2000 & 3000.

Installs easily in any Amiga bus slot. Supports

multiple modems on one computer. From £119.95

*All modems have a five year GUARANTEE*

**Supra Corporation**

All prices include 17.5% VAT.

Access & Visa Welcome

Dealer enquiries welcome

**Surface**  
UK Limited

SURFACE UK LIMITED · 5 ROCKWARE AVENUE · GREENFORD · MIDDX UB6 0AA  
TELEPHONE 081-566 6677 EXT 204/205 FAX 081-566 6678



BERLIN-based hard disk manufacturer Protar Elektronik (0923 54133) have just opened their first UK office and company boss Mark Dowling has told Amiga Computing that they are set to produce their first series of A500 hard drives.

The A500 HD will have storage capacity ranging between 20 and 200 megabytes and will connect to the computer by the expansion bus. There are 10 drives in the range, with the 200 megabyte version being built to order.

Every drive has a data transfer rate in excess of one megabyte per second, with an optional disk cache which can accelerate data transfer time by up to 50 per cent. This is five times faster than the Commodore drives.

Another optional extra with the disks is a SIMM memory expansion for up to eight megabytes of ram. The drives, to be shown at the 4th International 16-bit Computer Show, are expected to be on sale during mid-August at a price start-

## Protar heads for Amiga



ing at about £295 for the 20 megabyte version.

Also coming from the company in August is a colour monitor based on the Philips CM8833.

The C141M comes is supplied with cables to connect it to either an Amiga or Atari ST and although the price is still to be fixed is promised to

be competitive. Protar also manufactures an Amiga 512K memory expansion card. This sells for £30 and is on sale immediately. The company is taking orders for the other products.

The office is at Park House, Greenhill Crescent, Watford Business Park, Watford WD1 8QU-ends.

# WHAT'S new

## DIARY DATES

12 to 14 July 1991

**International Music Show**

Organiser: Westland Associates (071-730 7852) Venue: Olympia, London  
A musician's paradise - instruments, synthesizers and celebrity visits.

12 to 14 July 1991

**4th International 16-bit Computer Show**

Organiser: Westminster Exhibitions (081-549 3444) Venue: Novotel Hotel, Hammersmith  
Scores of exhibitors from Europe and North America meet under one roof.

5 to 8 September 1991

**Computer Entertainment Show**

Organiser: EMAP (071-404 4844) Venue: Earl's Court 2  
If you're interested in games then a visit to Earl's Court is a must.

5 to 8 December 1991

**Computer Shopper Show**

Organiser: Blenheim Pal (081-868 4466) Venue: Wembley Exhibition Halls  
An opportunity to buy some bargains before Christmas. It's expected to be much larger than last year's show.

7 to 9 February 1992

**5th International 16-bit Computer Show**

Organiser: Westminster Exhibitions (081-549 3444) Venue: Novotel, Hammersmith  
The first post-Christmas Amiga show.

● If you are organising a show relevant to the Amiga and it is not listed above, please let us know so that we can include it in Diary Dates.

## Amiga to help future dentists

STUDENTS at a leading London dental college are set to start using an Amiga to aid them in their studies.

Kings College Dental Hospital are to use an A3000 from next term to teach undergraduates about root canal therapy. The students' tutorial will be made up of a combination of text, scanned pictures and X-ray films, together with Amiga-generated animation, diagrams and sound.

Behind the system are Peta Smith, head of the department of Paediatric Dentistry and Andrew Gould, a general dental practitioner with an interest in the

application of computer and video technology to dentistry.

Both believe that Endodontics for the Deciduous Dentition will form a valuable accompaniment to conventional lectures, seminars and demonstrations and once other subjects have been added they see it as an indispensable teaching aid.

The machine at the heart of the operation is an A3000 with five megabytes of ram connected to a 40 megabyte hard disk drive and two Sharp scanners for image capture. Audio sampling is done with Audio Engineer.

The tutorial was made using Innocentrics' CanDo, Deluxe Paint III and ASDG's, the Art Department.

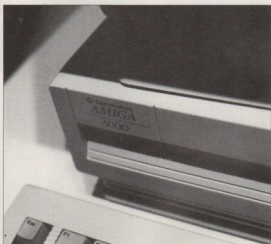
## Easy route to second upgrade



A500 OWNERS with an internal 512K memory upgrade who find they need even more memory are being offered a device which will double the computer's memory from one to two megabytes, without having to dispose of their existing upgrade.

Megaboard has one megabyte on-board and fits between the A500 and the current upgrade, working with all four-chip memory upgrades that do not exceed 90 millimetres in length. No soldering is required and full fitting details are included with the pack.

Boards with higher memory are expected to follow shortly from Worcester-based Evesham Micros (0386 765500). The two megabyte Megaboard is available now and costs £64.95.



# WHAT'S new USA



home and display the pictures on a TV using CDTV, CD-I, or a dedicated Photo CD player. Up to 100 images can be stored on each disc. Conventional prints can be made using the data stored on CD. Kodak expects Photo CD processing to be available in the U.S. in June, 1992.

Even more exciting than Photo CD, though, was the technology that Commodore was using to adapt CDTV as a Photo CD player. CDTV's standard 4096-color graphics aren't good enough for Photo CD, which requires a 24-bit "full-color" palette. While Commodore engineers would only admit that "some kind of 24-bit solution was in the works," a little poking around behind the machine displaying the Photo CD pictures revealed a unit in the video slot marked "DCTV by Digital Creations."

Currently available only for NTSC machines, DCTV is a \$495 external box that adds full-color video output and a digitizer to any Amiga. The unit installed in the CDTV was a smaller,

Kodak's new Photo CD discs. With Photo CD, you take pictures using conventional 35mm film. When you take the film in for processing, each picture is scanned into a computer and stored on a compact disc, in both video-resolution, for display on a television set, and a higher-resolution format, suitable for use in image-processing software.

You'll be able to take Photo CDs

shipped, since the late 1980s. The player has a few advantages over CDTV: it sports a 16-million-color palette, a slightly faster processor, and, most important, has the marketing muscle of Magnavox, Sony, and Matsushita (Panasonic) behind it.

However, it has its share of disadvantages as well: it's much more costly to develop software for than CDTV, it's more expensive (\$1400 compared to CDTV's \$999), and its fragile "thumbstick" controller is less familiar to American kids than the Nintendo-like joystick used by CDTV (and more likely to be accidentally broken).

While most of the CD-I software on show looked more polished than the CDTV applications, you have to remember that developers have had years to develop them, thanks to CD-I's many delays.

## Compression

The consensus amongst showgoers was that Philips was only shipping CD-I now because of CDTV's presence in the market. One of CD-I's most-touted features, MPEG (Motion Picture Expert Group) compression, which will allow full-screen, full-motion video, isn't ready yet, and won't ship until 1992.

Philips will start shipping the machines in October and make MPEG capability available on a plug-in cartridge sometime in 1992. Company representatives had no information about price and availability of the cartridge.

While Philips were making promises about CD-I, Commodore were showing the already-shipping CDTV, along with almost 30 applications that are currently available, and another 20 that will be available soon. They also showed a number of new add-ons that will help give CDTV a technological boost to help it stay competitive with CD-I.

On the first day of the show, Commodore premiered CDTV playing

The big news this month comes from the summer Consumer Electronics Show (CES), held in Chicago, Illinois from June 1 to 4.

If you're looking for the latest and greatest developments in video, hi-fi audio, home entertainment and computer and videogames, CES is the place to be.

This twice-yearly exposition is where dealers and the press go to find out what high-tech items are going to be hot during the next Christmas season.

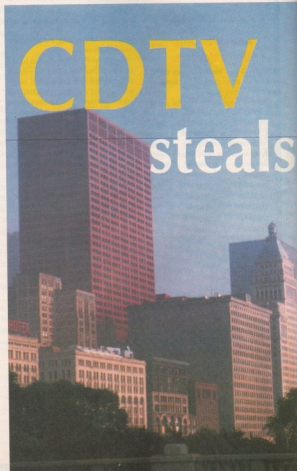
I went to the show expecting the popular technologies to be things like High Definition Television (HDTV) and expensive yuppie toys such as handheld electronic Rolodex directories. I was in for a shock - it turned out that the most-talked-about technology on display was Commodore's own CDTV unit.

Commodore had a huge booth strategically placed right in the middle of the East Hall, with the consumer electronics exhibits, rather than in the North Hall with the computer and videogame exhibits.

While the crowd at CES was a bit thin this year, probably due to the recessionary economy here in the U.S., Commodore's booth was consistently crowded. The booth was almost entirely devoted to CDTV, with both currently-available and future applications on display. There were a few Amiga 500 units on display, but CDTV was the obvious star of the show. The player and two of its titles (Music Maker and World Vista) were named among the most innovative consumer electronics products of 1991 by the Electronics Industries Association at CES.

CDTV was the only compact-disc technology on display. North American Philips/Magnavox were once again showing their long-delayed CD-I (Compact Disc-Interactive) player, this time promising that it would ship in October.

Similar in concept to CDTV, the CD-I player has been shown, but not



internal board sans digitizer. The output of the DCTV-equipped CDTV was absolutely stunning – television quality video with none of the fringing or blackness associated with HAM pictures.

Most exciting, though, was the price – a Commodore representative estimated that the DCTV add-in would cost only about \$50. Other showgoers were told that Commodore is negotiating with Digital to make the DCTV output a standard feature in CDTV before the Christmas season. I only hope they change the name – “CDTV-DCTV” is quite a mouthful.

## Motion video

Other new technologies shown to the public for the first time were CDXL motion video and the CDTV-PIP picture-in-picture add-on. CDXL is a patented software technique developed by Carl Sassenrath that allows developers to add 12 frame per second,

1/3 screen motion video to their titles.

CDXL is a bridge technology that will allow motion video to be added to CDTV titles while Commodore waits for MPEG compression. Like Philips, Commodore plans an MPEG full-motion-video add-on once the standard is finalized. When combined with the DCTV full-color add-on, CDXL animation looks as good as videotape output.

CDTV-PIP is a special genlock that allows a 1/3 screen window containing live NTSC video to be displayed simultaneously with a CDTV application.

With this plug-in video card, you can watch video output from a VCR or laserdisc player while using your favorite CDTV application. Perfect for letting Dad keep track of his football game while the kids play games on the CDTV. Reps at CES weren't sure when a PAL version would be available.

Third-party add-ons for CDTV were on display as well. The AirMouse remote control, which resembles a Star Trek: The Next Generation hand

phaser, is a hand-held infrared mouse that works somewhat like a light pen. Instead of rolling it across a flat surface, you move it up, down, left, and right while pointing it at the screen.

This \$99 add-on will work at up to 5 metres from the CDTV screen. Another neat gadget was a version of Very Vivid's Mandala system tailored for CDTV. Mandala, which has been around since the Amiga's birth, uses a video camera to allow you interact directly with objects onscreen.

The camera displays a digitized outline of your body, with which you can “touch” onscreen objects. Sample applications on display included a drum set, a paint program that could be manipulated by waving your arms, and an ice-hockey game that lets your image act as goalie.

Software continues to pour out for CDTV. The most impressive title on display won't be available for about another year: *Pygnosis'* incredible new 3-D flight simulator that features a real-time-generated fractal landscape. If you want a preview, a demo is included on the same disc as the CDTV version of *Lemmings*, which should be shipping about the time you read this.

Another dazzling title, which should be available in July, is *Sherlock Holmes: Consulting Detective*, from ICOM simulations. The game's conversational sequences use 15 frame-per-second animated video, featuring 25 actors in 50 speaking parts, authentic costumes, and 25 Victorian-era sets, making this game a truly cinematic experience.

Jack Nicklaus Golf-CDTV features over 8,000 digitized images covering every eight yards of the Muirfield Village Golf Club in Dublin, Ohio, as well as a digitized version of Jack himself to play against.

## Nintendo

Other new titles shown at CES include the Guinness CDTV Disc of Records, *Dinosaurs* (a CD comic book in the tradition of Teenage Mutant Ninja Turtles), Wayne Gretzky Hockey CDTV, *Trivial Pursuit* (with animated graphics, sound effect, and stereo music accompanying 2,000 trivial questions), *SimCity*, *Xenon 2*, *Falcon*, and *Sea Beast* and *Maelstrom* from Sullivan-Biluth.

The show wasn't all CDTV, of course. A number of companies were showing their latest wares for the Amiga, IBM, Nintendo, and Sega platforms.

Nintendo's Super NES booth dominated the software floor, although the machine didn't seem to generate the level of excitement many expected. There were some killer games shown for the IBM PC, including Chuck Yeager's *Air Combat* from EA, and *Wing Commander II* and *Strike*

*Commander* from Origin. The new Origin games were probably the most technically-impressive programs shown at CES, but the bad news is that there are no plans to port them to the Amiga (considering that the recommended minimum hardware platform for *Strike Commander* is a 20MHz 386 PC with 2MB of memory, it's not hard to see why).

## Dungeons

The good news is that Origin plans to release a version of *Wing Commander* for the Amiga before year's end, and they promise they'll do a much better job porting it than they did on the poorly-converted *Ultima* series.

Electronic Arts' upcoming releases include *Black Crypt*, a *Dungeon Master*-style game with 12 dungeons painstakingly rendered in 64-color halfbride mode. *Battle Island* from Ubi Soft (distributed by EA in the U.S.) looks to be a real treat for wargamers, as does *Mindcraft's* *The Rules of Engagement*.

*California Dreams*, another EA label, will be releasing *Solidarity*, a simulation that puts you in the shoes of a Polish labor leader and gives you a chance to recreate the steps that led to the country's freedom.

*Arna Entertainment*, *MirrorSoft's* U.S. label, showed off *Reach for the Skies*, a fantastic *Battle of Britain* flight simulator. Unlike *Lucasfilm's* similar offering, *Reach for the Skies* uses polygon graphics and presents impressive animation speed even on an unaccelerated Amiga.

Finally, *Pygnosis* gave me a private preview of their upcoming Amiga titles for release in the U.S. and U.K.

*Barbarian II* is similar to *Barbarian*, one of the company's first Amiga releases, but is much more playable. *Aquaventura* is a fast-action arcade game featuring first-person action, horizontally scrolling shoot-em up sequences, and 3-D tunnel sections.

The real winner for arcade fans, though, promises to be *Leander*, a 22-level platform arcade game with the best graphics yet in a *Pygnosis* game. Although I didn't see them, look forward to *Shadow of the Beast III* around Christmas, and *Lemmings II* early next year.

That's it for CES highlights. As this article went to press, news reached me that Commodore had actually sent Kickstart 2.0 off to the rom burners, so the new operating system should be available as soon as the company's marketing department gets the packaging ready.

According to a well-placed source, the final release of 2.0 may contain a few surprises, such as scalable outline fonts. Hopefully I'll have more details in next month's column.

# s the show

**Despite a smaller crowd than usual at the Consumer Electronics Show in Chicago, you practically had to stand on shoulders to get a glimpse of Commodore's CDTV. Denny Atkin reports**



**Amiga Computing  
defines the latest  
corporate  
catchword and  
looks at how it  
could change the  
face of popular  
computing**



# Multimedia

**M**ultimedia is one of those phrases you'll hear bandied about with gay abandon as advertising executives guzzle down spritzers while moaning endlessly about the state of the pisle and how life has never been the same since the Crash. And if you ask what this mystical multimedia is, the answers you'll receive will probably be as varied as the people questioned.

In general terms, it's best described as the easing of interaction between machines, people and the real world. This takes many forms ranging from the user friendly control of hardware such as video recorders to the interactive presentation which avoids the usual constrictions of a computer environment.

Multimedia is, or should be, the panacea for all computer users' ills. Its sole aim is to make information freely available to anyone, anywhere.

Because of the Amiga's endless list of talents it's an obvious choice for anything which requires supreme power and flexibility, and as a result it has been greeted with open arms by the purveyors of the new age of interaction.

The multimedia explosion is almost upon us, and as a result a whole stable of high power and high price hardware and software packages are appearing almost daily. Some costly decisions will have to be made, and hopefully the following article will show what's available and where best to invest.

## Instant information

The point-and-click, buy-and-sell side of multimedia will no doubt be the most obvious, and certainly the most striking, element of the interactive invasion. With the relatively inexpensive combination of the Amiga and the embarrassingly friendly but immensely powerful display software, the High Street will soon be awash with Amigas advertising and informing on all manner of products and services. The shop window equivalent of a scrolly demo isn't the only place due to feel the winds of change - reception areas, restaurants, information centres - the list is endless, and choosing the right package requires a lot of thought and advice, so here we go.





# Media



Animations can be dragged into the action in a matter of moments (shots to the talents of old favourites such as DPaint.

## InfoChannel

If you're going to start anywhere, start at the top, and InfoChannel is certainly that for both price and performance. It's perhaps the premier interactive display system for the Amiga, being by far the easiest to use and most stylish of the available systems.

For all its power and glamour there's a price to be paid, and to be honest the cost of InfoChannel is frighteningly high in relation to anything seen before on the Amiga. Of course, no one claims that InfoChannel is aimed at Alf's corner shop, and if you're a corporate raider such piddling figures will barely raise an eyebrow.

### Frightening figures

The basic InfoChannel system consisting of eight disks, one weighty ring-bound manual, and not much else will set you back £1249. This allows a single link with a satellite machine over a distance of a few hundred metres.

This is InfoChannel in its simplest form but if you're looking for more satellites, the initial cost soon becomes nothing more than a fond memory.

For example, each extra satellite machine requires a separate player module which adds another £874 a time, and without this software dongle in place the receiving machine won't even give you the time of day.

As well as the player module there's the added insult of another £1249 thrown on top for the Infinity software which is the element of the system responsible for distributing Info's output to the network.

And as if all this extra expense isn't enough there's the minor problem of the satellites themselves, each of which requires a minimum 20 meg hard drive plus a recommended 3 meg of ram. Then, of course, if you want to use the system's networking talents to the full it will need its own resident modem.

### What's on offer?

OK, let's say you've remortgaged the house and bought the system. What do you get? Quite simply one of the most powerful and easy-to-use authoring packages on the market which allows you to import Ham images – whether they be scanned or digitised creations of your own or one of the many high quality IFFs provided with the system.

These backgrounds are then used to form the backdrops onto which stylish broadcast-quality text with its wide range of wifes, fades and effects can be presented.

The system allows total control of the page and its creation. For example, each background image can be drawn into the action using a huge range of effects, the likes of which were previously available only to those working

with Paintbox – the hardware responsible for 99 per cent of all TV effects.

The next step is to suck in some text. Because InfoChannel treats each line of text as an individual it can be assigned its own definable effect. For example, each line of the message can zoom in from a separate direction or materialise in a predetermined position. As with the backgrounds, a whole range of wipes, fades and general special effects can be applied.

The system uses any standard Workbench-friendly font, but it could be some time before you dig up your old favourites from Workbench because InfoChannel boasts a wide range of perhaps the best fonts yet seen on the machine. The selected font can be

limit is your imagination.

To add to the excitement, animations can be imported. So, for example, corporate sales pitches could be given added impact by using the odd logo spinning into the picture.

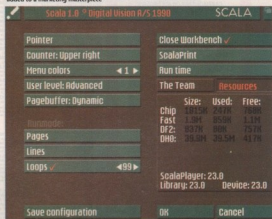
Any standard Amiga animation package such as DPaint can be employed to add the Disney touch to a presentation, and thanks to the simple scripting controls the same sequence can be revisited throughout the masterpiece.

### Interactive element

If InfoChannel was merely a sexy typing system it would hardly count as a leading light within multimedia. By definition, multimedia implies interaction



A prime example of InfoChannel in action as the finishing touches are added to a marketing masterpiece



A quick glance at the state of the system and it's back to the action in the page designer

stylised with the usual options of Bold, Italic and so on, but this is merely the tip of the iceberg as a complete palette of colours, drop shadows, borders and 3D effects – all adjustable for size, colour and orientation – are waiting. When this designer-animated text is combined with complete control of positioning, effects and timing, the only

between the Amiga and other systems, whether they be human or machine.

In the case of InfoChannel the interaction is strictly with the anthropological alternative, it does not control any video recorders, CD units or any other form of hardware.

InfoChannel's main aim is to inform,



# Scala – the alternative InfoChannel

and to maximise its effectiveness a simple script language is used to divulge information in a form of hypertext.

For example, a travel agent might create a series of yes/no questions which lead you through a number of resorts showing you the sights, the hotel rooms, the beaches and so on while the text zooms in to detail. If you get bored it's straight back to the main menu for an alternative browse around the planet.

Another application would be a silent receptionist which, at the click of a button, would point the way to the toilets, direct you around the building or suggest the best place to buy a burger.

Of course, when left alone it could return to tooting the company line with an endless stream of logos and product information.

All this designing, scripting and general fiddling does sound like a disaster in the making, but with as little as a morning's tuition a complete novice could easily produce a sequence that would leave onlookers agog.

The creative process couldn't be simpler and even the most complex interactive scripts take no time after just a little practice.



InfoChannel's at its best, stylish graphics with interactive icons



Linewraps made easy, simply select the effect and sit back as the scripts scroll smoothly in...

Regular readers are likely to find InfoChannel's approach to exhibition familiar due to its more than passing resemblance to Digital Vision's first multimedia release, Scala. To say the two are similar would be an understatement. They are almost identical. In fact, if it wasn't for the logo in the corner of the screen it would seem impossible to tell one from the other in all but one or two screens.

Both use exactly the same design system, but InfoChannel has the ability to transmit to other machines, and an option for infinite rolling display as opposed to Scala's maximum of 99 loops.

The only real difference between the packages is in the main program itself. All the support disks are identical and if both programs are placed in the same drawer, each will happily share all the available scripts, backgrounds, fonts and layouts with its companion.

The obvious question is, why pay the massive asking price for InfoChannel and the seemingly endless supply of expensive software dongles if Scala is almost identical? Well, it's the "almost" which makes all the difference.

InfoChannel is aimed squarely at the corporate market such as hotels, conference centres and so on. In short, anywhere that requires multiple outlets all instantly controllable from a central point.

If, however, your needs aren't quite in the corporate league Scala's £250 asking price looks very attractive in relation to its big-budget alternative. OK, you'll have to copy files onto floppies and run extra machines independently, but considering the alternative, Scala is likely to be the option for most.

## Hyperbook

Hyperbook as the name suggests takes the interactive side of multimedia to its logical extreme. Its approach is that of an interactive workhorse and information centre rather than an all-singing, all-dancing display and sales tool like Scala or InfoChannel.

It uses the standard Workbench environment as opposed to a custom front-end like its glossy rivals. So its presentation isn't as stylish as the expensive alternatives, but considering that it's a fraction of the price of any of them it's bound to be high on the shopping lists of mere financial mortals.

The Workbench-friendly element does sacrifice a little style and panache but it means that Hyperbook is totally happy about interacting with other Workbench-based programs and utilities. This particular talent has been exploited to the full by the designers

and all manner of applications can be called on by the program's Dos and ARexx options.

For example, if a page contains references to animation or artwork, an onscreen button could be assigned to locate an external player, load the animation after IFF and return to the original page after it's displayed. This means that the simple framework of the program can be expanded almost indefinitely.

It's fair to say this approach does require more knowledge than other systems but the possible applications are as varied as the Amiga's talents.

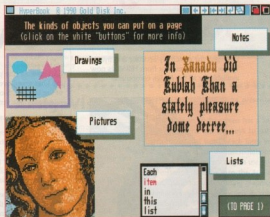
As with all multimedia applications a hard drive is an essential for any serious user although Hyperbook, unlike all its rivals, will operate on as little as a half meg Amiga.

Having said that, the storage and fast display of graphics and text is what makes the system usable, hence the necessity for the HD and a reasonable amount of memory.

## Easy editing

As well as the cash saving and flexible design, the production of the pages themselves is extremely simple, being a cross between basic DTP and a paint package.

All the design tools are lined up



Hyperbook with its multiple choice approach to multimedia

ready and waiting and a plethora of pull-downs add the necessary options to control, tweak and generally fine-tune each page.

Hyperbook doesn't have all the whistles and bells of some systems and apart from the occasional whip and funny fade, things are fairly static with special effects kept to a minimum. The only real moan is the program's dislike of Nam pictures which suffer badly when imported to a page. Of course,

you could always display them separately thanks to the Dos and ARexx options.

## Overview

Hyperbook is probably not the best choice if you want to stop shoppers in their tracks, but if your needs are to inform, educate and generally assist the user, it's the perfect option.



Oddie, Garfield's faithful friend, bounding through a Hyperbook page in glorious colour. Education made easy...

# HiSoft BASIC

## A BASIC Standard

HiSoft BASIC is the answer to your programming prayers; a fast, interactive and easy-to-use 68000 BASIC system conforming to the industry standard for the BASIC language.

HiSoft BASIC is designed to be as compatible as possible with the AmigaBASIC interpreter, while offering you a friendlier, easier-to-use and infinitely more powerful language. In addition it has many of the features of the world-standard Microsoft QuickBASIC, on the PC.

Some of HiSoft BASIC's features include:

- Structured programming, using long IFs, multi-line functions, CASE, REPEAT and procedures
- Program line numbers are optional, and alphanumeric labels can be used
- Full recursion for procedures & functions; local variables and arrays as parameters
- Five types of variables
- Program size limited only by memory
- Variable size limited only by memory
- Integer and character constants
- Compiles the majority of AmigaBASIC programs without change

Full support of the Amiga is included as standard with extensive window, screen and graphics commands. Amiga libraries can also be accessed as if they were built-in statements allowing complete machine access.

HiSoft BASIC includes full MENU support, with event trapping and powerful sprite routines, using the OBJECT keywords.

Programs can execute in their own window(s) or use the CLI window for minimum size. CLI-type programs may be easily written and made resident since they are fully re-entrant.

HiSoft BASIC is a no-limits language; string variables may be up to 16Mbytes in length and there are no limits on array sizes either (subject to available memory). Code generated is fully 68010/020/030 compatible.

Compiled programs have no run-time overhead; all compiled programs share an Amiga library, which may be distributed with programs without charge.

## Extend

An add-on package for HiSoft BASIC. Extend includes routines for handling IFF files, gadgets, sub-menus, sound, HAM mode and much more. It is supplied as a library for ease of use.

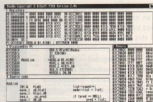
*Normally HiSoft BASIC costs £79.95 and Extend costs £24.95... but see the coupon below for a very special offer for the two packages together!*

# Devpac 2



## Easy Assembly Language

Devpac Amiga Version 2 is widely regarded as the most powerful, complete, assembly language development system for the Amiga. It incorporates an integrated editor/assembler/linker/debugger, together with a stand-alone assembler and debugger and all the necessary include files and many examples.



Complete with extensive ring-bound manual detailing all aspects of the package, plus debugging strategies, Devpac is the choice for beginners and assembler experts alike.

*RFP is £59.95, but see the coupon below for a very special offer on this essential package.*

# ProFlight takes off!

ProFlight, the extremely accurate and flyable Tornado flight simulator from HiSoft, is now available for all the Amiga computers.



First released on the Atari ST where it has won a high degree of critical acclaim from reviewers and users alike, ProFlight is not only one of the most technically realistic simulators around but it is also tremendous fun to fly. As you would expect, the Amiga version has much improved sound and graphics!

You can fly peaceful reconnaissance missions or roar into attack after carefully planning your combat mission. ProFlight is supplied with a comprehensive, ring-bound flight manual.

# SAS C5

SAS Institute (the parent company of Lattice Inc.) has taken over the development and sales of the Lattice C 5 compiler for the Amiga and released a new version, 5.10a.

The major features of this latest version are:

*AmigaDOS 2.0 support, LSE APEX support, improved Workbench usage, many performance improvements, support of aligned, automatic near to far conversion, C++ style comments, options/link options now read from an environment variable... and more.*

We believe that these improvements and enhancements in this version establish SAS C5 as the ultimate Amiga C compiler. The package includes 680x0 compiler, linker, screen editor, assembler, highly intelligent global optimiser, source level debugger, code profiler, librarian and a host of tools and examples.

SAS C5 from HiSoft costs £229 (but see our special offer on the coupon) and includes full UK technical support, which is not available from other sources.



Upgrades cost £34.95 (from version 5.0x), £79 (from version 4.xx) or £99 (from version 3.xx).

## Priority Order Form

Yes, please rush me \_\_\_\_\_ copy(ies) of

- ☐ HiSoft BASIC & Extend @ £59.95  
☐ HiSoft Devpac 2 @ £39.95  
☐ SAS/Lattice C 5.10a @ £199.00  
☐ ProFlight Tornado Sim @ £99.95

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Post Code: \_\_\_\_\_

☐ I enclose a Cheque/Postal Orders

☐ I would like to pay by:

☐ Access/MasterCard/Visa/Amex etc.

☐ Visa/TrustCard etc.

Card No: \_\_\_\_\_

Expiry Date: \_\_\_\_\_ Signature: \_\_\_\_\_

*All prices include UK VAT and postage within the United Kingdom. Goods will normally be despatched within 2 working days of receiving your order. Call, write or fax for export prices.*

*Please send this coupon to HiSoft at:  
 The Old School, Greenfield, Bedford  
 MK45 5DE, UK  
 Tel: +44 525 718181, Fax: +44 515 713718*

**Free ProFlight T-Shirt  
 with every order!**

**HiSoft**  
 High Quality Software

**Special Offer**

## The CAPS lock

A credible contender for InfoChannel's crown presents itself under the name of CAPS an acronym of Computer Aided Presentation System. CAPS XL, to use its full title, hails from The Netherlands-based 1001 Software Development and is designed to match InfoChannel, albeit via radically different means.

### CAPital expenditure

Before telling you why you can't live without CAPS, it makes sense to give some indication of what it can't live without. Just like other systems, CAPS will not be prepared to slum it on a low-spec Amiga configuration.

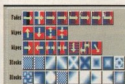
Sit down, take a deep breath and get the following hardware together: one Amiga with eight megabytes of available hard disk space and three megabytes of ram. Add to this a second Amiga, this time with a mere four megabytes of free hard disk space and a modest two megabytes of ram.

Having assembled the hardware and connected the two supplied dongles, it is a simple matter of configuring one machine as a CAPS workstation and the other as a CAPS script driver. These should then be linked either direct or via a modem using a standard serial cable as appropriate. Configuration is achieved by a very simple and comprehensive install utility. It really is a case of point, click and watch that disk space vanish.

The result is an information display comprising various components such as IFF files, text messages, Deluxe Paint animations and video sequences. These elements are composed on the workstation Amiga before being transmitted to the script driver Amiga for constant display. The script driver is nothing more than a dumb storage and display device. Once configured, it can be left running a CAPS display sequence without any further user intervention.

### The workstation

The workstation is used to create "pages" of information and display "scripts." A page consists of various windows. Each window can consist of text, graphics or a combination of the two. Page creation is achieved via a rather primitive screen-based desktop publishing-style layout system. This relies very heavily on menu selection and some keyboard hot-keys which



Page transitions and window are not dissimilar to those of InfoChannel



CAPS is an icon-driven beast, clearly illustrated by the workstation main menu



border on the cryptic.

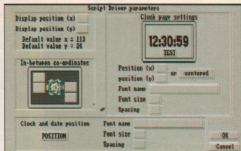
After pages have been created they can be compiled into CAPS scripts. A script is a sequence of pages which are displayed cyclically. CAPS is slightly more powerful than InfoChannel in this respect. Rather than simply stringing pages and animations together, it is possible to include other dynamic elements within CAPS scripts. These include a clock page and randomly generated "interlude" sequences.

The authors of CAPS say it is possible to control an external video device, allowing cue, start and stop functions to be integrated into a CAPS script. This function requires an additional software module which it was not possible to review during the compilation of this feature.

### Conclusion

Although CAPS and InfoChannel set out to achieve the same end, they approach multimedia from two fundamentally different angles. There is no doubt that in terms of ease of use and creative control, InfoChannel wins hands down. CAPS does however offer more display flexibility. Using CAPS it is possible to schedule events for specific days and times, something which Digital Vision's system fails to offer at present.

The CAPS system weighs in at around the £1,000 mark. Not cheap, but still a small financial commitment compared to an InfoChannel system in its glory. Further details are available from sole UK distributor Alternative Image on (0533) 440041.



It is possible to configure the script driver remotely from the workstation, including screen positions and how the clock is displayed



Creating CAPS pages is a simple matter of pointing and clicking... and pointing and clicking... and pointing and clicking

## AmigaVision

AmigaVision is Commodore's own Authoring System packaged free with certain Amiga systems in much the same way as Apple included Hypercard with their Macintosh systems.

The AmigaVision manual is quite a hefty tome and daunting at first view - although it does make an excellent doorman on dreary afternoons. It is, however, well worth pulling out of its cellophane because after taking the plunge, you will be greeted with a friendly mouse and icon-orientated user interface.

### Go with the flow

Below the title bar is a window containing what looks like a garden parrot viewed from above with a triangle in the upper right-hand corner on a grid of squares.

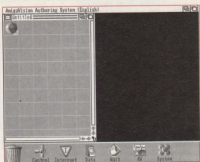
This is the Flow Window where the

user builds up multimedia presentations.

The bottom of the screen has a line of icons which are the keys to subsidiary menus of icons which form the building blocks for the presentations. This main menu is very easy to use. AV, for instance, takes you to the Audio-Video menu for incorporating graphics, animation, sound and video in your presentation. The Wait and Data icons are also self-explanatory.

The intuitive layout is what makes the AmigaVision interface a dream to use. It's so friendly that it's possible to begin using AmigaVision after only a cursory glance at the manual. Active elements are brought into play by dragging them from the relevant menu into the flow, just like dragging a file from one drawer to another.

Double clicking on an icon brings up the option requester, whether it be the directory for a picture or the name of a



Stories start to take shape thanks to AmigaVision's friendly front end

text file. It's really hard to do anything drastically wrong! If only all programs could be this robust, the world of computing would be a much nicer place.

As a bonus, the Help menus really do help! They don't only explain "how" but also "why". The best tutorial is just to try everything and when you get stuck ask for help. With the odd glance at the manual index you can't go wrong.

## Say it with pictures

If you can use DPaint3 you can get a multimedia presentation off the ground. First, create some pictures in DPaint which you can run in the background with 2 meg of memory or more, and open the screen icon from the AV menu. AmigaVision will automatically detect which screen resolution and palette you used.

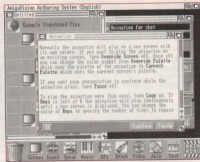
Sound sample rates and animation rates are also auto-selected as long as they follow the IFF and Anim formats. There are a number of other options such as transitions between pictures in your presentation, fades and dissolves, plus some other video style effects, showing how much thought has gone into making AmigaVision accessible to as many people as possible.

AV icon elements can be linked together to allow multiple layers of animation and digitised sound and backgrounds to be timed to coincide. This package breathes Desktop Video.

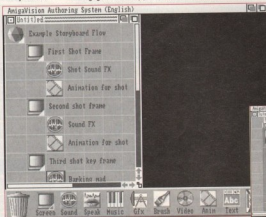
## Interactivity

AmigaVision has what is called an Object Editor which can be used to define active Hot Spots on any screen. These Hot Spots are used to give a response to the AmigaVision Flow that can call to other elements of the Flow, or load variables with values to be used later. Hot Spots can be simple shapes created in the Object Editor or brushes imported from a paint program.

When a Hot Spot has been activated it can be assigned another visual or audio response. The Object Editor also allows the user to define the output of variables in any position and font size. Text windows can be placed anywhere



If things get a little tricky you can always resort to the Help screen



A full script in all its glory, ready and waiting to inform, educate or boost those sales



AmigaVision's internal database editor in action

in a presentation and tools are supplied to allow the user to scroll through text while within an interactive program.

If you pull up a Data or AV icon the Object Editor can be made available allowing you to assign objects for interactivity without having to come out of the Flow. Also hidden within AmigaVision is a very powerful Expression Editor which allows string, numeric and Boolean operations to be defined.

The list of user-defined variables can be used in any position or time within a

Flow just by clicking on the variable from the list in the Expression menu. A full list of mathematical, Boolean and string operators are available so that quite complex variable responses to a Hot Spot or text input can be constructed.

## Icing on the cake

Finally we come to the database element of AmigaVision which is one of its main strengths. The database can be used to search in all the standard ways

and the user is given the option of importing Superbase and DbaseIII files.

This allows the user to construct and test a database outside AmigaVision and then import it for the interactive multimedia elements to be added, if need be. Existing material can thus be revamped and reworked for multimedia.

But it's not all good news. AmigaVision is a large program and if you are serious about development you will need some extra memory – 2 meg or more for large presentations. There is also no true runtime module yet available.

This increases the memory overheads when running a presentation as the delivery machine has to carry the overheads for the complete AmigaVision Authoring System (about 600K of code). This slows delivery down and excludes users with only a meg or less who are itching to see what multimedia is about.

This is an important point for CDTV



Logical operations made easy thanks to the user friendly expression editor

developers who will want to cram as much music and pictures into CDTV's one meg of memory as is possible. Commodore promise to upgrade this soon.

At present, AmigaVision does not support calls to CD-DA, standard CD audio, available in CDTV which means it can't use some of the wonders that CD technology brings. Again, Commodore claim that there is a new version of AmigaVision, version 1.7, about to hit the streets and it will include more device handlers and operators so as to satisfy the demands of developers.

## Conclusion

AmigaVision is an excellent package as an introduction to the realms of interactivity and multimedia. Presentations can be put together by even a novice with access to minimal memory in no time at all. It does, however, need to be taken up by a larger user base if it is to be the backbone of Amiga authoring.

The package isn't quite yet the Amiga's answer to Hypercard, but given time it might be. The best way to judge a package is to see if it's being used in the commercial market. We're using it – is anyone else?

# The New 1 Meg Amiga From Digicom

Following The Huge Success Of Our F-19 Digistar Offer, We At Digicom Are Proud To Present The Meanest Pack Available For The Amiga A500. This Unbeatable Deal Now Includes Commodore's Screenings Pack PLUS the A501 RAM/Clock Upgrade Plus Our Very Own Exclusive New Arcade Smash Hits Pack And The Chart Topping 1 Megabyte Version Of Kick Off 2!

**Includes:** Amiga A500 Computer 512K Keyboard PLUS A501 512K RAM/Clock Expansion Fitted To Give 1 Meg Memory Total  
 ● Built-in 1 megabyte DS/DD 3.5" Disk Drive ● Multi-Tasking Operating System ● Latest Kickstart And Workbench 1.3 ● Superb 4096 Colour Graphics ● Speech Synthesis ● 4 Channel Digital Stereo Sound ● Notepad Word Processor ● Commodore Mouse Plus 3 Owners Manuals ● Amiga Basic Program Language ● T.V Modulator And All Connecting Leads And Cables  
 Plus This Great Software : Shadow Of The Beast 2 ● Days Of Thunder ● Back To The Future 2 ● NightBreed ● Deluxe Paint 2

## Plus Exclusively to Digicom

Bring The Atmosphere Of The Arcade To Your Home With The Arcade Smash Hits Pack From Sega, Incorporating Five Of The Most Exciting Games Around !

**Thunder Blade Alien Out Shinobi After  
Blade Syndrome Run Run Burner**

**Plus : A High Quality Microswitched Joystick, Amiga Tailored Dustcover, 10 Blank Disks And Disk Storage Box, Mouse Mat And....**



**Notice : The Memory Upgrade Supplied With This Offer Is The Official Commodore A501 Ram Expansion Worth £99.00 ANY Alternative Expansion Unit Will Invalidate Your Warranty**



**Complete Package Price Only £399.00**

**1 Meg Amiga Screenings Pack** (As detailed in the above offer) Plus The Superb Philips CM8833Mk2 Multipurpose Colour/Stereo Monitor

Free Amiga/8833 Lead And Monitor Dust Cover

**£628.00**

**1 Meg Amiga Screenings Pack** (As detailed in the above offer) PLUS Philips CM8833Mk2 (Colour/Stereo Monitor) Star LC200 9 Pin/Colour Printer)

Free Printer Dust Cover & Lead

**£828.00**

## HOW TO ORDER

By Phone:

Call Our Credit Card Order Line And Quote Your Credit Card Details To Our Helpful Sales Staff. We Accept ACCESS, EUROCARD, VISA, MASTERCARD, AMEX, BARCLAYS CONNECT, SWITCH, and LOMBARD CREDITCARD.

By Mail:

Simply Write Down Your Order And Post It To Us With A Personal Cheque, Postal Order, Bankers Draft Or Building Society Cheque Made Payable To "Digicom Computer Services Ltd".

(Personal Cheques Require Time To Clear Before Dispatch)

**All Prices Include VAT And FREE Delivery**

Next Day Courier Delivery At £5.00 Extra

## The New Amiga 1500 Is Here !

The Ultimate Personal Home Computer Designed To Cover Every Computing Requirement, From Business To Leisure And From Design To Education

Includes : 1500 CPU with One Megabyte of Memory :

Separate Keyboard : Additional Disk Drive Optional IBM Compatibility

9 Expansion Slots Plus This Great Software **THE WORKS PLATINUM EDITION**



**DELUXE PAINT 3  
THEIR FINEST HOUR  
BATTLE CHESS  
SIMCITY+  
TERRAIN EDITION  
POPULOUS SPECIAL**

**1500 System Only**

**£679.00**

**1500 System With**

**Philips 8833Mk11**

**£909.00**

**1500 System With Commodore 1084SD**

**Colour Monitor And 52MB Autopost**

**Hard Drive Only £1249.00**

Visit Our Showroom Open Mon-Sat 9.00am-5.30pm

**DIGICOM**

36-37 Wharfside, Fenny Stratford, Watling Street

Milton Keynes MK2 2AZ

Wharfside Is Opposite The Bridge Pub On The A5 Watling Street

Prices and Specifications are Subject To Change Without Notice. 10/8/91

Phone Our 24 Hour Hot Line

**(0908) 378008**

8 Lines Open

Fax (0908) 379700

All Major Credit Cards Accepted

## ★ Digicom Offers You ★

- ★ Free Catalogue (With All Orders)
- ★ Regular Newsletters And Special Offers
- ★ 12 Month Guarantee On All Product
- ★ 30 day Replacement Of Faulty Product
- ★ Technical Helpline
- ★ All Product Tested Before Dispatch
- ★ Price Or Product Match



# THIRD COAST TECHNOLOGIES

## Hard Drives For The A500 & A2000

### Xetec A500

- Xetec hard drives offer the ultimate in terms of performance for the Amiga A500
- Faster than any other competitor
- Transfer rates of up to 800K/S
- Supports tape backup & networking under SCSI
- Support of up to 8Mbytes of auto-configuring ram
- Compact host adapter with 1 metre connection cable
- Comes complete with 40 management utilities & manual

### Xetec A500 Hard Drive & Ram Pricing

Xetec 50MB 10 Milli Head Park	£499.99	Xetec Ram	£99.99
Xetec 65MB 25 Milli Head Park	£549.99	Xetec 1.5MB	£199.99
Xetec 85MB 25 Milli Head Park	£599.99	Xetec 2MB	£249.99
Xetec 106MB 15 Milli Head Park	£649.99	Xetec 4MB	£349.99
		Xetec 8MB	£549.99

### IVS Trumpcard

- Supports all embedded hard drives
- Supports up to 4Mbytes of fast ram
- 2-3 times faster than the A500
- Autoboot roms as standard, uses fastfile
- Compact design clips into side of Amiga A500
- Memory expandable in 512K, 1MB, 2MB steps
- Unique design allows controller & drive to be used with an Amiga 2000 should you ever upgrade
- Supports any 3.5" SCSI drive

### Ram Expansions

### ICD AdRAM A500

AdRAM 540 unpopulated	£79.99
AdRAM 540 with 1/2MB	£99.99
AdRAM 540 with 1MB	£134.99
AdRAM 540 with 1.5MB	£149.99



ICD AdRAM for the A500 offers memory expansion from 512K to 1.5MB then by adding 4 chips it expands to 1.5MB etc. The board comes supplied with comprehensive manual and clock. It takes only minutes to install & requires no soldering. Available in any configuration. Plugs in A501 expansion slot.

AdRAM 540 with 2MB	£169.99
AdRAM 540 with 4MB	£244.99
AdRAM 540 with 6MB	£484.99

### CP10 Pal Encoder



**Pkoc £129.99**  
Broadcast quality Pal encoding on the Amiga, PC and Atari allows you to see on the screen without loss of quality. Supports S-VHS and also RGB & Audio in on Scart. Audio, Video and Y/C out. Supplied with comprehensive manual & PSU.

### D640 Automatic Colour Splitter



**Price £129.99**  
Allows images to be digitised in full colour from camera or recorder. Offers Pal in and also S-VHS in full brightness, contrast and colour controls. Fully Automatic without the need for manual switching between Red, Green and Blue. Fully compatible with all Amiga digitiser, supplied with comprehensive manual & PSU.

Unit 8, Bradley Hall Trading Estate,  
Standish, Wigan, Lancashire,  
WN6 0XQ  
Tel: (0257) 472444 Fax: (0257) 426577



Faster Than any other Competitor "Amiga Computing"

### ICD ADV 2000 Hard Drives

Advantage 2000 SCSI performance hard drive controller. Supports transfer rate of up to 900K/S. Fully autobooting supporting all embedded SCSI drives & SCSI857506 controllers. The ADV controller also supports optical drives, tape streamers & removable media drives. Cache buffering & 20 nanosecond GAT logic make this the fastest controller commercially available for the Amiga 2000 series. Programmable memory cache buffering is also available. ADV will support a drive in the landing bay or on the side of the card.



ADV 2000 Controller £129.99

Xetec minicard £99.99

### ICD ADV 2000 Hard Drive Pricing

32MB 21M/S auto head park & lock	£349.99	61MB 21M/S auto head park & lock	£449.99
50MB 15M/S auto head park & lock	£399.99	106MB 15M/S auto head park & lock	£579.99
85MB 25M/S auto head park & lock	£449.99	ST506 controller (MFM & RLL)	£99.99
130MB 15M/S auto head park & lock	£199.99		

### Amiga Floppy Drives

Internal floppy drive requires no case modification.  
external 84 track slimline drive with cable & switch



External Floppy £59.99

No case mods  
Internal Floppy £59.99

### Graphics

#### Pro Genlock

**£299.99**  
Pro-Genlocks offering video in & out, RGB & PAL out. Built in fader. External colour and contrast controls. Supplied with manual and features that leave the Rendale standing. \* RGB splitter.



#### GST Gold Genlock

Pro-Genlock with built in PSU, built in RGB splitter. Video in & out also RGB & PAL out. Built in key inverter. Allows digitised results to be stored and overlaid onto any VHS recorder. Time and animate any video. S-VHS + Fader £349.99



#### ICD Adspeed



- 14MHz replacement processor
- 7MHz fallback software selectable
- On-board RAM cache
- No soldering required

Only £159.99

# Video

Multimedia embraces many different types of information and formats, but by far its most important feature is the amount of control it offers over video materials. Video is the cornerstone of multimedia without which the multimedia information system would be nothing more than a glorified interactive slideshow.

The hardware is still in its infancy and new developments are announced almost daily. Despite this, the Amiga is at the forefront of developments, especially with the launch of Commodore's CD-based Amiga, CDTV.

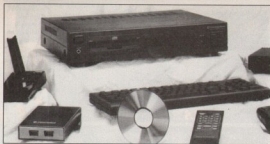
## The CDROM facts

There are many different ways of incorporating and controlling video materials in applications, ranging from basic digitised graphics stored on a hard disk to full motion Digital Video Interactive stored on CDROM. In the early days of multimedia, producers used just about any piece of video kit they could lay their hands on, and multimedia was an indistinct concept.

These days however, outside video, multimedia has focused almost exclusively on CD and laser disk. You'll still find more exotic hardware employed for specific applications but multimedia producers have concentrated their efforts on these two established formats.

In the early days, many saw CDROM as the ideal medium for multimedia work. After all, the CDROM disk could store a variety of information types, and even today other devices are restricted to one particular information format. VCRs only hold moving video, for example, but a CDROM can hold almost anything. With such integration, multimedia systems can now be pulled together at minimal cost.

Another advantage of CDROM is its sheer capacity. Even a fairly basic CDROM can store upwards of 650Mb of information. Compare this with something like an average floppy drive or even a hard drive and you'll soon see



Commodore's vision of the ultimate in multimedia CDTV

why the CDROM format has become so popular. Hard drives can challenge the CDROM in terms of storage capacity, but they are restricted by the kind of information they can hold.

## The downside?

That's not to say that CDROM is the answer to every multimedia producer's dream. To begin with, current CDROM technology is restricted almost entirely to read-only operation. You can buy things like WOIM (Write Once, Read Many) drives, but these are incredibly expensive and even then they are limited by the same restrictions as the hard drive.

Unless you're prepared to pay the high cost of having CDROM applications professionally mastered, then CDROM is restricted to generic (or mass market) applications. This is a problem plaguing CDTV – you won't find individuals producing multimedia applications on CDTV because of the high costs involved. As it is, most CDROM applications will be general purpose, designed specifically for mass market consumption.

Another disadvantage of CDTV is that it does not support full motion video, which is a very important aspect of the multimedia toolkit. Several manufacturers – notably IBM and Microsoft – are pioneering Digital Video Interactive, a system which allows over an hour of video footage to be stored on a standard CD. Using fast on-board compression algorithms, the host computer can pull images in from CDROM and display them in real time.

CDTV very nearly scored its own form of

DV-I technology – Commodore had originally intended to build in the necessary circuitry to allow CDTV to display full motion video in a quarter section of the screen. This would have made it an ideal platform for true multimedia applications.

Unfortunately, it wasn't until the recent launch of CDTV that Commodore admitted that this feature was not included – much to the dismay of those gathered!

Some view this as a missed opportunity for Commodore's multimedia



Some of the packages waiting for the multimedia explosion

machine but already there are rumours floating around that Commodore's engineers are working on the next generation of CDTV. Codenamed SuperBaby, the new machine will support full motion video directly.

## Laser disks aren't dead!

If you want to use live video in your multimedia applications you'll have to invest in an expensive laser disk controller like those used by the BBC for its *Doomsday Project*. With the correct controller card and software, your multimedia applications can call upon (and interact with) TV quality video footage directly.

This is the most powerful aspect of multimedia yet. Uses for it within the education, local government and corporate markets are endless, but it's fairly old-hat in the entertainment sector. Remember *Dragon's Lair*? It's been

around for years now, using many of the principles of multimedia before we even knew it. While rather limited in its gameplay, there's no doubt that it demonstrates beautifully the power of computer-controlled laser disk players.

A better example of multimedia in action is Atari's *Mad Dog McKray*, which uses video footage of real actors, allowing players to shoot it out with "real" bad guys. The level of interaction that *Mad Dog* delivers is amazing – it's just a shame that the game is so expensive to play! Laser disks, too, suffer from the same problem that dogs CDROM – high costs. Mastering a laser disk is a complex process leaving little room for mistakes.

Not only that, but it's an expensive medium to work with unless you intend to market your disk commercially. The cost of the hardware needed to play laser disks is also considerably greater than a CDROM drive, explaining why CDROM has been greeted with such enthusiasm.

## Control your media

Controlling all of these video widgets poses another problem for the multimedia producer. If you're using an industry standard authoring system such as Commodore's AmigaVision, the driver you require should already be available. AmigaVision comes as standard with drivers for the more popular video decks including those produced by Panasonic, Sony and Pioneer.

But what happens if you're using one of the less well known packages like INOVATRON's CanDo or Deluxe Video 37? The answer lies in William S. Hayes' advanced message passing system, Alexx.

Now that it's an integral part of the Amiga's operating system (in Workbench 2.0), hardware vendors no longer need to write drivers for specific applications. Simply by producing a generic driver that can be controlled via Alexx, any Alexx-compatible multimedia authoring system should be able to drive that device directly by issuing commands through an Alexx port.

Unfortunately, the true power of Alexx has yet to be harnessed. Getting third party developers to adopt Alexx hasn't proved too much of a problem for Commodore, but no one has used it to its full capabilities.

With the eventual launch of Workbench 2.0 for the A500, Alexx will hopefully be taken more seriously. Until then it seems it will remain a powerful but underused Amiga tool.

Using video in your multimedia applications is currently an expensive task that will remain out of the scope of most users for a while yet.

The multimedia revolution, however, is just beginning to gain ground and before long we'll be able to afford to produce multimedia applications featuring full interactive motion video. >



The heart and soul of many power applications and perhaps the ultimate multimedia workstation





# A WHOLE NEW WORLD OF POWER

NOW WITH THE **NEW**  
SYNCR O EXPRESS  
MK III

FOR ONLY

**£34.99**

## HIGH SPEED DISK DUPLICATION SYSTEM

THE ANSWER TO YOUR DISK DUPLICATION PROBLEMS

- ☐ SYNCR O EXPRESS IS A HIGH SPEED DISK DUPLICATION SYSTEM THAT WILL PRODUCE COPIES OF YOUR DISK IN AROUND 50 SECONDS!!
- ☐ Syncro Express requires a second drive & works by controlling it as a slave device & ignoring the computer disk drive controller chip whereby high speeds & great data accuracy are achieved.
- ☐ Menu driven selection of Start Track/End Track up to 90 tracks. ☐ Ideal for clubs, user groups or your own disks.
- ☐ Very simple to use, requires no user knowledge. ☐ The most powerful Disk Copier ever conceived.
- ☐ Also duplicates other formats such as IBM, ST etc. ☐ No more waiting around for your disks to copy.
- ☐ Probably the only duplication system you will ever need!
- ☐ Now with a **SUPER POWERFUL "SYNCR O" MODE** that actually synchronises your Disk Drives for even greater accuracy!!
- ☐ Can be switched OUT when not in use - totally transparent. ☐ Make up to 2 copies simultaneously\*.

### PLUS MANY NEW FEATURES INCLUDING ...

- ☐ **DRIVE SPEED CHECKER** - now you can check the speed of your drives - DF0-DF3. Easy and very accurate.
- ☐ **DISK TOOLKIT** - Syncro III now includes a range of Disk Tools - Fast Format, File Copy, Ram Disk, Disk Rename, Hard Drive File Copy etc. etc. Easy to use.

If you don't have a second drive we can supply SYNCR O EXPRESS together with a DIGITAL DISPLAY Drive for ONLY...

**£99.99**



PLEASE STATE AMIGA  
500\*/1000\*/1500/2000/3000 WHEN  
ORDERING

**WARNING**  
1988  
COPYRIGHT  
ACT

Datel Electronics Ltd., neither condones nor authorises the use of its products for the reproduction of copyright material. The backup facilities of this product are designed to reproduce only software such as Public Domain material, the users own programs or software where permission to make backups has been clearly given. It is illegal to make copies, even for your own use, of copyright material, without the given permission of the copyright owner, or the licensee thereof.

### HOW TO GET YOUR SYNCR O EXPRESS III

TELEPHONE [24Hrs] **0782 744707** CREDIT CARD ORDERS

WE WILL DISPATCH YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR PURCHASE WITHIN DAYS, NOT WEEKS  
ORDERS NORMALLY DESPATCHED WITHIN 48 Hrs. ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...

**DAT E L E C T R O N I C S L T D.**

GOVAN ROAD, FENTON INDUSTRIAL ESTATE,  
FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND.

FAX 0782 744292 TECHNICAL CUSTOMER SERVICE 0782 744324

**DAT E L**  
Electronics

L i m i t e d

THE WORLD'S MOST POWERFUL FREEZER-UTILITY CARTRIDGE

IS NOW EVEN BETTER  
**AMIGA**  
**ACTION**  
**REPLAY**  
**MK II**  
**IS HERE!!**

A2000 VERSION  
AVAILABLE

**£69.99**

PLEASE STATE WHICH COMPUTER  
YOU HAVE WHEN ORDERING

STILL ONLY  
**£59.99**  
FOR THE A500/1000

AMIGA ACTION REPLAY SIMPLY PLUGS INTO THE EXPANSION PORT OF YOUR AMIGA AND GIVES YOU THE POWER TO FREEZE MOST ANY PROGRAM, THEN YOU CAN.....

### JUST LOOK AT THE UNMATCHED RANGE OF FEATURES

- **SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK**  
Special compacting techniques enable up to 3 programs to fit on one disk. Now saves directly to disk as Amiga Dos - reloads independently of the cartridge - even transfer to hard drive! Works with up to 2 Megas of Ram - even 1 Meg Chip Mem (Fatter Apus).
- **UNIQUE INFINITE LIFE/TRAINER MODE - NOW MORE POWERFUL**  
Allows you to generate more and even infinite lives, fuel, ammo, etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.
- **IMPROVED SPRITE EDITOR**  
The full Sprite Editor allows you to view/modify the whole sprite set including any "attached" sprites. RANGE OF IMPROVED FEATURES.
- **VIRUS DETECTION**  
Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.
- **SAVE PICTURES AND MUSIC TO DISK**  
Pictures and sound samples can be saved to disk. Files are saved directly IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveforms.
- **SLOW MOTION MODE**  
Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!
- **RESTART THE PROGRAM**  
Simply press a key and the program will continue where you left off.
- **FULL STATUS REPORTING**  
At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.
- **POWERFUL PICTURE EDITOR**  
Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status

"overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!

- **MUSIC SOUND TRACKER**  
With Sound Tracker you can find the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!
- **AUTOFIRE MANAGER**  
From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power! Joystick 1 and 2 are set separately for that extra advantage!
- **DISKCODER**  
With the new "Diskcoder" option you can now "tag" your disks with a unique code that will prevent the disk from being loaded by anyone else. "Tagged" disks will only reload when you enter the code. Very useful for security.
- **PREFERENCES**  
Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.
- **DISK MONITOR**  
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.
- **DOS COMMANDS**  
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.
- **DISK COPY**  
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.
- **BOOT SELECTOR**  
Either 800 or 0FF can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

### PLUS A MACHINE CODE FREEZER MONITOR WITH EVEN MORE POWER!!

**EVERY MORE FEATURES INCLUDING IN-COLOR DISPLAY AND CIPHER ENCRYPTION**  
• Full M68000 Assembler/Disassembler • Full screen editor • Load Save block frozen picture • Play resident sample • Show and edit all CPU registers and flag show actual track, disk sync, pattern etc. • Dynamic Breakpoint handling • Show memory as HEX, ASCII, Assembler, Decimal • Copper Assembler/Disassembler - now with suffix names  
REMEMBER! ONLY THEN YOU ARE WORKING WITH THE PROGRAM IN "PROGRAM" STATE WITH ALL MEMORY AND INSTRUCTORS INTACT.  
AVAILABLE FOR THE TB-SUBSIDY ON JUST THE INDUSTRY!

- Write string to memory • Jump to specific address • Show Ram as text • Show Calculator • Help command • Full search feature • Unique Custom Chip Editor • Disk handling • Show memory as HEX.

**WARNING 1986 COPYRIGHT ACT WARNING**  
Date Electronics Ltd. neither condones nor authorises the use of its products for the reproduction of copyright material.

The backup facilities of this product are designed to reproduce only software such as Public Domain material. The copy right companies or software whose products are here included have been made aware in a legal to make copies, even for your own use, of copyright material, without the express permission of the copyright owner, or the company licensed.

### HOW TO GET YOUR ORDER FAST!

TELEPHONE [24Hrs] **0782 744707** CREDIT CARD ORDERS

ORDERS NORMALLY DISPATCHED WITHIN 48 Hrs. ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...



**DATEL ELECTRONICS LTD.**



GOVAN ROAD, FENTON INDUSTRIAL ESTATE, FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND.

FAX 0782 744292 TECHNICAL/CUSTOMER SERVICE 0782 744324

**DATEL**  
Electronics

# DATEL

Electronics

**A Top Quality 400 DPI  
Handy Scanner  
for your Amiga  
at a truly  
Unbeatable  
Price!!**



**NEW  
VERSION III  
SOFTWARE**

**NOW ONLY  
£129.99**

**COMPLETE  
HARDWARE/SOFTWARE**



**SCANNING COULDN'T BE SIMPLER...**

**NEW FEATURES...** IFF Buffer Save 1600 x 1024 pixels, dual buffer and scan matching for 1 Meg users, view Buffer and NEW interface version of software. Full keyboard control of most functions. Includes hard disk transfer to run under Workbench.

- Unmatched range of edit/capture facilities and keyboard control simply not offered by other scanners at this unbeatable price.
- An easy to handle Handy Scanner featuring 105 mm scanning width and 400 dpi resolution enables you to scan graphics and text into your Amiga.

- Adjustable switches for brightness/contrast levels.
- Powerful partner for DTP that allows for cut and paste editing of images etc.
- GeniScan gives you the ability to easily scan images, text and graphics and even offers 200Dpi Dual Scan Mode.
- Save images in suitable format for most leading packages including PHOTON PAINT, DELUXE PAINT, etc.
- Package includes GS4500 scanner, Interface, Power Pack and Scan Edit III software.

**GeniScan®  
GS 4500**

**COMES WITH  
FREE  
PHOTON PAINT**

- Comes complete with Photon Paint Illustrator Software.
- Huge range of features.
- Top selling graphics package.

**GOLDEN IMAGE OPTICAL REPLACEMENT MOUSE**

**... NOW A TRUE OPTICAL  
MOUSE! FOR THE AMIGA**

**● YES A FULL FEATURE OPTICAL MOUSE FOR  
YOUR AMIGA - THAT MEANS NO MOVING PARTS!**

- Incorporating full optical tracking and counting - no ball so no problems with clogging, slipping, etc.
- High count output for very fine movement.
- Two button microswitch action.
- Direct replacement for all Amigas.
- Comes complete with special 'Optical Pad'.
- Superbly styled - supersmooth shape moulded to fit the hand.
- Comes complete with moulded 9 pin connector.



**No more to buy!!**

**COMPLETE  
ONLY £39.99**

**HOW TO GET YOUR ORDER FAST!**

**TELEPHONE [24Hrs] 0782 744707 CREDIT CARD ORDERS**

ORDERS NORMALLY DISPATCHED WITHIN 48 Hrs. ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...

**DATEL ELECTRONICS LTD.**

GOVAN ROAD, FENTON INDUSTRIAL ESTATE,  
FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND.



**FAX 0782 744292 TECHNICAL/CUSTOMER SERVICE 0782 744324**

SCAN 5

**DATEL**  
Electronics

L i m i t e d

# A new dog learns old tricks

**C**ast your mind back to what some call "the good old days" of the early arcade machines, and with a steady mind unaffected by fawning sentimentality you'll be forced to agree that most of the original games were a waste of 10p. Not so Missile Command and Asteroids.

Since the first home computers started to bring the arcades into our homes, these two games have appeared in countless versions both commercially and, more recently, in the public domain. For the disk's game of the month therefore, we decided to double up and bring you twice the usual classic arcade action.

The Missile Command conversion on this disk is by Max Bithead of Boulder Colorado, and is a "beeware" game. In other words, the author wouldn't mind if you sent him a six-pack in the post! The Asteroids clone is by Rico Mariani.

## Missile Command

The object of the game is survival in the face of a hail of nuclear missiles. To stay alive as long as possible you must use your own anti-missile weapons to intercept the incoming nukes.

You could say the programmers were the first proponents of Ronnie

RayGun's SDI (Star Wars) initiative! First off, you must choose whether to play a one or two-player game. The two-player option doesn't, unfortunately, involve both players at once in a joint defence, but since it pits them against each other in terms of the final score, you can always pretend you're defending yourself against the other player's missiles!

When the game starts, the player has a limited supply of missiles, represented by a number of yellow dots in the central silo. The nukes descend from the top of the screen, and to stop them the player fires missiles at them.

## Mouse missiles

The crosshair mouse pointer focuses your aim, and missiles are fired with the left mouse button. When friendly missiles explode they do so in a ball of flames which lasts a couple of seconds. Any missile which enters this explosion is destroyed, so with careful planning, several nukes can be dispatched with one shot.

The only way to survive more than a couple of screens in this game is to take out a group of missiles with every shot, as ammo soon runs out if you blast away indiscriminately. The best playing tip, therefore, is to hold your fire until

Classic fun with the Amiga versions of two of the best ever oldies!

# THE

you suss out where all the incoming missiles are going, then plaster them at the busiest intersections.

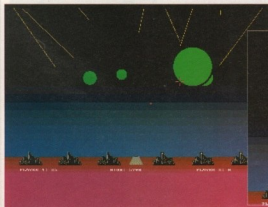
Another tip for the ruthlessly pragmatic is to allow all your cities save one to be destroyed, and concentrate your defences above this city. This is especially useful once the "smart bombs" begin to appear.

exploding friendly missile. For these reasons they are more difficult to track and destroy, as they require a direct hit.

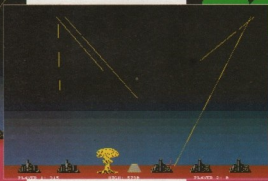
If you hit just below its position, a smart bomb will stop and hover above the explosion until the route is clear again, then carry on to its target. Sort of a cruise missile really, so what with

## Clever clogs!

Smart bombs are represented by small blobs which don't leave a trail behind them and which will not carry on in the same path if it will lead them into an



The first wave is easy enough to blast

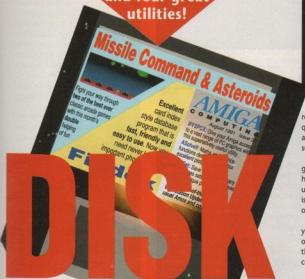


When a city goes, it goes with a bang

The Disk that no drive can afford to be without – because it's free! TWO FULL GAMES, ONE TUNE, and four great utilities!



Looks familiar?



the SDI angle, you begin to wonder if Ronnie didn't pick up a few tips from this game!

On later screens the missiles speed up considerably, leading to the desperate tactic known to old arcade players as "whizz-bang". On the original arcade console the position of the

crosshair was controlled by a track-ball, the first to be widely used for a game.

This gave rise to a measure whereby a string of missiles could be fired very rapidly. All you had to do was whizz the ball quickly to one side, then bang the fire button as fast as possible. If you have a track-ball at home you can

recreate this manoeuvre perfectly, but a quick-wristed mouse user should be able to emulate it with some reasonable success.

If you manage a decent score, the game will ask you to put an entry in the high score table, but be warned that unlike many high score tables this one is saved to disk. If you are still using the original coverdisk, BACK IT UP NOW!

The advantage of this method is that you can save your all-time best scores on disk for as long as you like, and with the classic gameplay on offer, that could be a very long time!

## Asteroids

Dozens of colours! Amazing animation! Stunning sound effects! These are all descriptions which don't, unfortunately, apply to Asteroids, yet it was a huge hit in the early days and is still a very playable game. Why?

As usual, the object of the game is to survive as long as possible against over-

whelming odds. This was one of the most appealing features of most of the old classics. You always knew you were doomed – the challenge was to see who could last the longest.

You begin in the middle of a screenful of hulking asteroids and it's only a matter of time before your ship collides with one, leading to your instant demise. Luckily, your ship is armed with a laser and can manoeuvre around the screen using its thruster and left-right directional controls.

Be careful of the inertia effect faithfully reproduced here from the original. This means that when the ship is moving it tends to stay in motion until you turn round and apply reverse thrust.

When an asteroid is hit by laser fire it splits into two pieces travelling slightly faster than the parent. Shoot these and they split again into boulders which cause real headaches.

These boulders can be destroyed with a single shot, but there are often

## How to use The Disk

First of all, you must make a back-up copy of the coverdisk. To do this, boot up with your copy of Workbench, then double click on the Workbench icon, followed by the Shell or CLI icon. Now type:

DISKCOPY FROM D0: TO D0:

or, if you have an extra disk drive, put a blank, formatted disk in D1: and type:

DISKCOPY FROM D0: TO D1:

Follow the onscreen prompts until the copying procedure has ended, then put your original disk away in a safe place. Now switch off the machine and wait for 30 seconds before re-booting with the copy. Wait until the CoverDisk17 icon appears, double click on it and away you go.

That's all you need to do to make a straight copy of the entire disk. However, you may also want to copy individual

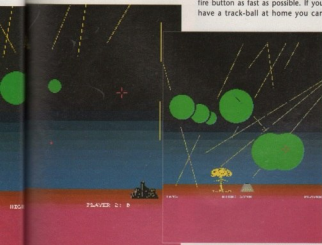
programs from your copy of the coverdisk to a separate disk. In this case ensure that you fully understand which related files need to go with it.

For example, all of the document files on the disk require that the text editor PPMore is in the current disk's C: directory. Therefore, if you copy the docs to a new disk you will also have to copy PPMore to the new C: directory before you can read them.

Some of the smaller docs will not have been crunched, so for these you need only change the tool types on the icon's info screen to reflect whichever text editor you do have on the new disk.

As a general rule, you should carefully read the documentation for any program you copy from disk to disk.

This can save a great deal of messing about and can help you avoid all those infuriating error messages!



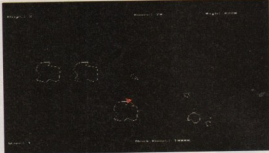
Looks like the end is nigh

► too many of them to take care of before one of them gets you.

Just to make things a bit harder and more interesting, the asteroids are augmented by the odd flying saucer. These appear from the edges of the screen and follow an erratic flight path spitting out laser bolts as they go.

When the screen is already jam-packed with boulders and asteroids these little devils can make life annoyingly complicated, but when the screen is clear of all except a few last boulders, the player can lie in wait for UFOs and pick up a few bonus points. When they appear at this late stage they are pretty easy to take care of.

One last note for players of the original game – there is no screen wrap on this version. On the old game you



could zip out the top of the screen to appear at the bottom, or exit stage left and come in again on the right of the screen. In Rico Mariani's game, players

and asteroids bounce off the screen borders and go back the way they came. Now don't just sit there – get blasting!

## PrefSet

Author: Chris Simpson

One of the annoying things about Workbench's preferences is that to change one aspect, say the printer driver, you have to open the preferences drawer, then the prefs program, then go to the screen you need, carry out the change and then click on Use.

It's even more of a drag if you want to switch quickly to a setting containing several changes. There's no fast way to

do it unless you use a utility such as PrefSet.

Using PrefSet you can utilize a great many different preferences settings, because unlike the standard Workbench file containing preferences settings, which must be called "system-configuration" and are located in the DEVS: directory, PrefSet can load or save a file and call it anything it likes.

This means you can have a

long list of preferences settings ready to load in when needed. The PrefSet drawer on the disk contains five example settings for you to play around with, named example one through to five. To use them, activate the CLI window left open at the bottom of the Workbench screen by clicking in it, then type:

```
CD SYS:UTILITIES/PREFSET
<RETURN>
PREFSET EXAMPLE1 <RETURN>
```

Nothing could be easier.

The attendant utility is PrefSave, which you use to save any prefs you have tinkered with in Preferences. To save a new set, go into the CLI window as before and type:

```
PREFSAVE EXAMPLE1
```

You can, of course, prefix the filename with the drive and directory of your choice.

## IFF2PCXII

Author: John Shaw

Despite its daunting and vaguely hieroglyphic name, this is a friendly and very useful utility. IFF2PCX converts Amiga graphics in the standard IFF format to IBM PC graphics in the PCX format, which is a rough equivalent of IFF in that it is accepted by most PC paint and DTP packages.

The advantages of such a conversion process are obvious in that Amiga owners can now transfer their IFF files to a PC without having to buy expensive commercial conversion programs such as ASDG's Art Department Professional. IFF2PCX makes it easy for anyone with a standard 512K Amiga to carry out the conversion for free.

To begin, run the program from CLI by typing:

```
CD IFF:UTILITIES/IFF2PCX <RETURN>
IFF2PCX11 <RETURN>
```

or double click on its icon. By opening the program from CLI, you can save quite a bit of memory, which is essential if you intend to convert a lot of graphics and hold them in memory.

Once the program is running, you are presented with four options. From top left, these are PICK IFF, PCXDIR, VIEW IFF, and CONVERT.

The first of these, when clicked, brings up a requester using the PD library, requiring as found in the disk's LIBS: directory. Using the file requester the user chooses the file to be converted to PCX format.

A useful feature at this stage is the program's ability to accept a stack of IFF files if they are chosen using extended selection. This is done by holding down the shift button while clicking once on each file with the left mouse button,

then on OK. For our purposes, move to the MachineCode directory of the coverdisk and choose the file called "picky" then click on OK.

The second gadget, PCXDIR, simply tells the computer which directory to write the PCX file in once it has been converted. Choose RAM: from the list of devices on the right-hand side of the requester as the "picky" file is less than 20K and should fit easily in even a 512K Amiga. Now click on OK.

The VIEW IFF gadget gives the user the opportunity to view IFFs before choosing which one to convert, so we can skip over that one for now.

Click on the last gadget, CONVERT, to begin the conversion process. This will read in the IFF, convert it, and write it to the directory chosen with the PCXDIR gadget. The resulting file is about 10 per cent bigger than the original IFF and will be about twice as big once decompressed on the PC, but the memory overheads are negligible when compared say, to those involved in the conversion to Mac TIFF format.

The conversion takes proper care over MSDOS file naming conventions, so it will automatically truncate any filename of more than eight characters and add the .PCX file extension. The user therefore has very little to worry about other than that there is enough disk space or memory available for the files to be converted.

The coverdisk's ramdisk should give you ample room to practise with most files, as even 512K Amiga owners will have 300K or so to play about with.

Please remember that this program is shareware, so if you mean to use it regularly, send a donation to the author at the address supplied in the documentation on the disk.

## ASolvell

Author: Lennart Oscarsson

If you're about to start studying for your A levels or for a degree in maths, physics, or most sciences, ASolvell should be extremely useful. It is designed to plot a wide range of maths functions and represent them onscreen, and takes a lot of the work out of messing about with maths.

By simply typing in the function you would like to plot, and setting maximum and minimum values for X and Y, you can have an instant appreciation of how the function will look on paper. This is very useful to give you an idea of where the maxima and minima will occur, along with any points of inflection.

In addition, the position of the cursor is continually updated in the top right-hand corner of the screen, and its co-ordinates given in pure maths terms down to seven decimal points.

## A dastardly plot!

If you want to know the exact cartesian co-ordinates of any point on the graph, you merely zoom in and place the cursor on your chosen point. The co-ordinates will be those displayed on the top right.

Stop! I hear the differential calculus fans shout. How can you plot a curve with an infinite number of points on a computer screen of a set resolution? How can you find an accurate point on the graph when your accuracy is determined by the size of your pixels?

The answer is the excellent zoom-in function. This allows you to zoom into the graph until you reach a sufficient pixel-to-the-decimal-point ratio. For instance, you could zoom in on a turning point until it plots virtually a straight line, then plot its co-ordinates.

The zoom function allows you to choose the area to be blown up to full screen size by dragging a box around it with the mouse, so if you choose a very small area, you can zoom in extremely close.

Not as good as sitting down and working out the function for yourself, but if we did that for you we'd be cheating, wouldn't we?

## A host of extras

Extra features include the ability to plot up to six different functions on the same graph at any one time, plotting derivatives, second derivatives, integrals, and parameter functions, a calculator, and the option to save your graph to disk as an IFF for later output to printer or even a DTP package. If you're involved in the

numerate branch of education as either a student or teacher, ASolve will become indispensable and one of your most useful mathematics tools.

## Maths functions

Here is a list of the maths operators you can use in ASolve functions. The list should be comprehensive enough for most tastes:

- + addition
- subtraction
- \* multiplication
- / division
- ^ power function
- SIN sin function
- COS cosin function
- TAN tan function
- ASIN arc sin function
- ACOS arc cosin function
- ATAN arc tan function
- SINH sin hyperbolic function
- COSH cosinus hyperbolic function
- TANH tangens hyperbolic function
- EXP exponential function
- LN natural logarithm function
- LOG base 10 logarithm function
- SQR square root function
- ABS absolute value
- INT integer part

## Index

Author: George Knight

Index is an easy-to-use database program designed like an electronic card index. If you want a catalogue of programs, LPs or books, or if you have a business and wish to store staff or stock records, this is for you! Index helps you to find what you want easily.

It operates on the basis of a two-dimensional array. Each item of data is regarded as an item belonging to a particular class, such as a program (item) on a disk (class).

The class is always stored and displayed in alphabetical order whereas each item is stored in order of entry. To find any item of data, you either find the class and then examine the items belonging to it or you use the search facility provided to find the item directly. You define display headings to suit your own needs.

## How it works

The program opens to a largely blank window. Choose Open from the File menu and select the file Disks.fx, a small file created for demonstration purposes.

In the top box, you will see a list of disk titles. Click on any one of these and several lines will appear in the lower box giving the names of programs stored on the selected disk. Search as often as you wish to travel through the disks.

If you want to find something quickly, choose Search from the Special menu and type a name into the string requester. The search is not case-sensitive, so don't worry about whether the entry is in upper or lower case.

If the search is successful and the search string is located,

the item containing it will be highlighted in the lower box and the disk which has this item will be highlighted in the upper box. Choose Continue from the Special menu if you want to proceed with the search through the remaining items.

You will notice that there are keyboard equivalents for the menu items, so things can speed up a bit once you get used to playing about with Index. As long as you remember the distinction between classes and items, it's easy to create your own database, as the on-disk documents contain a thorough tutorial section. If you get stuck try reading those, but you shouldn't have any real problems with Index - it's friendly, simple and fast.

## Faulty Disk?

### Subscribers

If you subscribe to Amiga Computing and your disk has been damaged in the post, please return it to:  
Amiga Cover Disk  
Database Direct, FREEPOST, Egherton Park, South  
Wistol LA6 3EB

### Non-subscribers

If you bought your magazine from a shop and found that the coverdisk was damaged, please return it within two months to:  
Amiga Cover Disk, Storey Precision, Unit 6, Coverdisk  
Courttyard, Sallow Road, Weldon North Industrial  
Estate, Cusby, Northants, NN17 1JK.

Please allow 28 days for the delivery of your replacement disk.

## Think you can do better? Want to be famous?

We are always on the lookout for new, quality Amiga programs for the cover. If you think you have written something good enough for others to share and enjoy, please send it in and we'll have a look.

The Amiga Computing coverdisk is used by thousands of Amiga owners every month in places all over the world from New Zealand to the U.S.A. so if your submission finds its way onto the disk, you could be famous!

Please make sure you list ALL Workbench and other files necessary for the program to work. Feel free to design your own icons for programs which run from Workbench, but please don't make them too big.

If you ensure your program is as compatible as possible with a wide range of Amigas, it will also stand a better chance of publication. We are especially inter-

ested in programs designed to work with the A3000, although if they work only with the new machine they'll have to be quite small.

We are prepared to pay our current rates for original work which hasn't been distributed in any other way and which has not been put in the public domain. If you wish your program to be released as shareware or freeware we will be happy to publish it, but would, of course, be happier if we'd been given it first!

Your submission MUST be accompanied by the submissions form, a copy of it, or a signed declaration to the same effect. Please supply your full name address and phone number.

Unfortunately we cannot undertake to return disks sent to us as the volume of submissions makes this an impractical exercise.

Name ..... Age .....

Address .....

Daytime phone ..... Evening phone .....

Submission name ..... Submission size .....

### You must sign this declaration

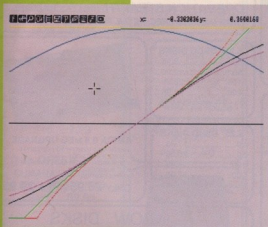
The material on this disk is mine. I didn't steal it from someone else. It hasn't been published before and I haven't submitted it elsewhere because I want Amiga Computing to publish it. I understand that by submitting my work to Amiga Computing and signing this declaration I am giving full copyright control to European Publications Ltd.

I understand that if my submission is bought by Amiga Computing I will be paid the current applicable rate. I know what copyright means and I will be responsible for any possible litigation arising from breach of it by European Publications Ltd as a result of using my submission.

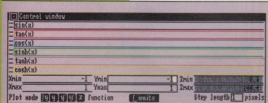
Signed

Date .....

Post your submissions  
WITH A COPY OF THIS FORM to:  
Stevie Kennedy, Amiga Computing,  
CoverDisk Submissions, Europa House,  
Addison Park, Marlow, Bucks, MK14 6NP



Plot up to six functions at once



A mass of mathematical



# MEDIA DIRECT

## AMIGA MEGA PACKS

### PACK 1 (1MB PACK)

AMIGA A500 COMPUTER INCLUDES:-

- ❑ 512K MEMORY
- ❑ BUILT IN DISK DRIVE
- ❑ 4096 COLOUR GRAPHICS
- ❑ 4 CHANNEL STEREO SOUND
- ❑ KICKSTART 1.3
- ❑ WORKBENCH 1.3
- ❑ EXTRAS 1.3 AND TUTORIAL DISK
- ❑ AMIGA MOUSE
- ❑ TV MODULATOR
- ❑ POWER SUPPLY UNIT
- ❑ A500 KEYBOARD

- ❑ 512K RAM EXPANSION
- ❑ INCREASES MACHINE TO 1MB
- ❑ SHADOW OF THE BEAST II
- ❑ DAYS OF THUNDER
- ❑ BACK TO THE FUTURE II
- ❑ NIGHT BREED
- ❑ DELUXE PAINT II
- ❑ MOUSE MAT AND POCKET
- ❑ 10 BLANK DISKS AND BOX
- ❑ QUICKSHOT JOYSTICK

### PLUS 10 MORE GAMES

- ☆ FOOTBALL MANAGER
- ☆ HOTSHOT
- ☆ LAS VEGAS
- ☆ FLIGHT PATH 737
- ☆ FIREBLASTER
- ☆ KARTING GRAND PRIX
- ☆ THAI BOXING
- ☆ SECONDS OUT
- ☆ MOUSE TRAP
- ☆ PLUTOS

ALL FOR ONLY **399.95**

### PACK 2

AS PACK 1 PLUS:-  
★ STAR LC200 COLOUR PRINTER

ONLY **604.95**

### PACK 3

AS PACK 1 PLUS:-  
★ STAR LC200 COLOUR PRINTER  
AND PHILLIPS CM8833/1  
STEREO COLOUR MONITOR

ONLY **828.95**

### CUMANA 3.5" EXTERNAL DRIVE



- ❖ VERY QUIET
- ❖ SLIMLINE DESIGN
- ❖ THROUGHPORT CONNECTOR
- ❖ ON/OFF SWITCH ON REAR
- ❖ LONG CONNECTING CABLE
- ❖ 880K FORMATTED CAPACITY
- ❖ FITS ALL AMIGAS



ONLY **59.95**

### MEDIA DIRECT EXTERNAL DRIVE

- ❖ VERY QUIET
- ❖ SLIMLINE DESIGN
- ❖ QUALITY CITIZEN DRIVE MECHANISM
- ❖ ON/OFF SWITCH ON REAR
- ❖ LONG CONNECTING CABLE
- ❖ 880K FORMATTED CAPACITY
- ❖ FITS ALL AMIGAS

ONLY **54.95**

### BUDGET SOFTWARE

16 BIT POCKET POWER RANGE  
A BREAKTHROUGH IN 16 BIT BUDGET SOFTWARE  
REPRESENTING OUTSTANDING VALUE

HOTSHOT  
FOOTBALL MANAGER  
LAS VEGAS  
FROST BYTE  
FLIGHT PATH 737  
SPACE STATION  
FIREBLASTER  
ARTIFICIAL DREAMS

KARTING GRAND PRIX  
THAI BOXING  
SECONDS OUT  
MOUSE TRAP  
PLUTOS  
PROTECTOR  
WARZONE

ANY OF THE ABOVE GAMES  
ONLY **£2.99 EACH**  
OR CHOOSE 10 FOR ONLY **£24.95**

TRADE, GOVERNMENT AND  
EDUCATION ORDERS WELCOME

### NAKSHA UPGRADE MOUSE



- ❖ SIMPLY THE BEST
- ❖ 280 DPI RESOLUTION
- ❖ ERGONOMIC DESIGN
- ❖ SMOOTH PRECISE OPERATION
- ❖ 2 YEARS GUARANTEE
- ❖ FREE MOUSE MAT
- ❖ FREE MOUSE POCKET

**Naksha**

ONLY **22.95**

NOW INCLUDES:-  
OPERATION STEALTH



FROM U.S.GOLD REC. RETAIL PRICE £24.99

### 5.25" DSDD DISKS

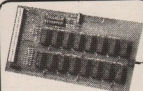
30.....	8.95
50.....	12.95
100.....	23.95
200.....	45.95

(ALL DISKS 100% ERROR FREE INCLUDES ENV LABELS)

### 5.25" DSDD DISKS

30.....	17.95
50.....	20.95
100.....	35.95
200.....	67.95

(ALL DISKS 100% ERROR FREE INCLUDES ENV LABELS)



### AMIGA 0.5 MEG UPGRADE

- ❖ INCREASES MEMORY TO 1 MEGABYTE
- ❖ 16 BIT TECHNOLOGY
- ❖ REPLACEMENT FOR A501 EXPANSION
- ❖ FIT IN MINUTES
- ❖ ON/OFF SWITCH

ONLY **26.95** CLOCK VERSION **29.95**

### RAINBOW DISKS

(RED, GREEN, YELLOW, ORANGE, BLACK, WHITE COLOURS AND CITY'S OF YOUR CHOICE)

#### 3.5" DSDD DISKS

25 DSDD.....	13.75
50 DSDD.....	26.45
100 DSDD.....	44.95
200 DSDD.....	84.95

#### 5.25" DSDD DISKS

25 DSDD.....	10.45
50 DSDD.....	18.95
100 DSDD.....	34.95
200 DSDD.....	67.95

(ALL DISKS 100% ERROR FREE AND ARE SUPPLIED WITH ENV LABELS)

REMEMBER !!! WE ONLY SELL HIGH QUALITY DISKETTES MADE  
BY K.A.O OR ATHANA. WE DO NOT SELL SUB STANDARD  
DISKETTES FROM THE FAR EAST.

MORE THIS WAY TEL 0782 208228 MORE THIS WAY

# MEGA DEALS

## AMAZING OFFERS ON 3.5" DSDD DISKS

25 DSDD 135 tpi .....	11.45
50 DSDD 135 tpi .....	21.45
75 DSDD 135 tpi .....	31.45
100 DSDD 135 tpi .....	35.95

ALL DISKS SUPPLIED WITH LABELS AND ARE 100% ERROR FREE 2 FOR 1 GUARANTEE



**BANX BOX**  
HOLDS 90 3.5" DISKS  
CAN BE STACKED  
HORIZONTALLY AND VERTICALLY

1.....	9.00
3+.....	8.50
5+.....	8.00

## DISK STORAGE BOXES

3.5" 100 CAPACITY.....	5.95
3.5" 80 CAPACITY.....	5.45
3.5" 50 CAPACITY.....	4.95
3.5" 40 CAPACITY.....	4.45
5.25" 100 CAPACITY.....	5.95
5.25" 50 CAPACITY.....	4.95

DEDUCT £1.00 FROM  
ABOVE BOX PRICE  
IF PURCHASING  
DISKETTES

5.25" OR 3.5" 10 CAP BOXES

5 FOR	4.50
10 FOR	7.50

## GENERAL

### ACCESSORIES

MOUSE MAT	2.50
MOUSE POCKET	1.50
3.5" DISK CLEAN	1.95
5.25" DISK CLEAN	1.95
ATARI D/COVER	3.95
AMIGA D/COVER	3.95
PRINTER STAND	5.95
MONITOR STAND	12.95
MONITOR PLYNTH	19.95

ALL OUR ACCESSORIES  
ARE OF THE HIGHEST  
QUALITY

## GENUINE SONY 3.5" DSDD BULK DISKETTES

25.....	12.45	200.....	79.95
50.....	22.95	500.....	179.95
100.....	41.95	1000.....	339.95

(ALL DISKS 100% ERROR FREE AND ARE SUPPLIED WITH LABELS)

## THIS MONTH'S SPECIALS

### ☆☆ OFFER 1 ☆☆

CUMANA EXT.DRIVE  
PLUS 512K RAM EXP.  
~~86.90~~ 84.95

### ☆☆ OFFER 2 ☆☆

ACCESSORY PACK  
MOUSE MAT  
MOUSE POCKET  
DISK CLEANING KIT  
DUST COVER  
~~9.90~~ 7.99

### ☆☆ OFFER 3 ☆☆

CUMANA EXT.DRIVE  
PLUS XCOPY PRO  
~~94.90~~ 89.95

### ☆☆ OFFER 4 ☆☆

M.DIRECT EXT.DRIVE  
PLUS XCOPY PRO  
~~89.90~~ 84.95

### ☆☆ OFFER 5 ☆☆

200 3.5" DSDD+  
2 100 CAP BOXES  
~~79.95~~ 67.95

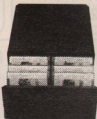


**XCOPY  
PROFESSIONAL**  
(THE ULTIMATE BACKUP UTILITY)

- ☆ FLOPPY DISK BACKUP
- ☆ HARD DISK BACKUP
- ☆ BACKS UP IBM/ST DISKS
- ☆ CHECKS DISKS FOR ERRORS
- ☆ FAST FORMATTING UTILITY
- ☆ INCLUDES HARDWARE FOR EXTERNAL DRIVE BACKUP
- ☆ BACKS UP VIRTUALLY ALL KNOWN DISKS

THIS UTILITY IS RECKONED  
TO BE THE BEST ON THE  
MARKET

ONLY 34.95



## POSSO BOX

HOLDS 150 3.5" OR 70 5.25" DISKS  
CAN BE STACKED  
HORIZONTALLY AND VERTICALLY  
ONLY 15.95



**QS128F MAVERICK**

Standard --  
Autofire 13.95



**SPEEDKING**

Standard 9.95  
Autofire 10.95



**NAVIGATOR**

Standard --  
Autofire 13.95



**ZIPSTICK**

Standard 11.95  
Autofire 13.95



**COMP. PRO 5000**

Standard 11.95  
Autofire 13.95



**MANTA RAY**

Standard 12.95  
Autofire 14.95



**STING RAY**

Standard 14.95  
Autofire 15.95






**QS131 APACHE**

Standard 6.95  
Autofire --



**QS130F PYTHON III**

Standard --  
Autofire 9.95

MORE THIS WAY  TEL 0782 208228  MORE THIS WAY 



# THE NAKSHA SCANNER

FOR ALL AMIGA A500 COMPUTERS

400 dpi 32 GREY SHADE HANDHELD SCANNER

## PACKAGE INCLUDES:-

- ★ Naksha A500 Scanner
- ★ Interface
- ★ Power Supply
- ★ Data scan professional software "the ultimate scanner software"

**naksha** ONLY 149.95

## star PRINTERS

**STAR LC10 120/25 cps 159.95**

Multiple font options Excellent paper handling facilities  
Simultaneous continuous 240 X 240 dpi Graphics  
and single sheet stationary

**STAR LC24-10 180/60 cps 214.95**

Exceptional letter quality print Additional font cartridges available  
8 resident fonts 360 X 360 dpi Graphics

**STAR LC200 COLOUR 214.95**

240 dpi 8 pin colour printer Additional font cartridges available  
8 resident fonts 360 X 360 dpi Graphics  
16 kb buffer Supplied with mono and colour ribbons  
165/40 cps Front panel pitch selection

**STAR LC24-200 MONO 259.95**

360 dpi 24 pin mono printer Additional font cartridges available  
10 resident fonts Supplied with mono ribbon  
7 kb buffer expandable to 32k Front panel pitch selection  
220/35 cps

**STAR LC24-200 COLOUR 309.95**

360 dpi 24 pin colour printer Additional font cartridges available  
10 resident fonts Supplied with mono and colour ribbons  
32k buffer expandable to 62k Front panel pitch selection  
225/55 cps

## PRINTER RIBBONS

	1	5
STAR LC10 MONO	2.95	13.25
STAR LC10 COL	5.95	26.75
STAR LC24-10	4.95	22.25
STAR LC200 MONO	5.50	24.75
STAR LC200 COL	10.95	49.25
STAR LC24 200 MONO	4.95	22.25
STAR LC24 200 COL	11.95	53.75

WE STOCK A LARGE RANGE OF RIBBONS  
FOR ALL TYPES OF PRINTER IF YOU DON'T  
SEE YOURS LISTED CALL US FOR A QUOTE

## ABACUS BOOKS

Advanced system programmers guide	32.45
Amiga 3D graphics basic programming	18.45
Amiga basic inside and out	18.95
Amiga C advanced programmers	32.45
Amiga C for beginners	18.45
Amiga DOS inside and out	18.45
Amiga dos quick reference	8.95
Amiga desktop video guide	18.45
Amiga disk drives inside and out	27.95
Amiga for beginners	12.95
Amiga machine language	14.95
Amiga printers inside and out	32.95
Amiga system programmers guide	32.95
Best Amiga tricks and tips	27.45
Making music on the amiga	32.95

## PHILLIPS CM 8833/II STEREO COLOUR MONITOR



THIS SUPERB STEREO  
COLOUR MONITOR  
ONLY £244.95

## SOFTWARE

ALL THE SOFTWARE LISTED  
BELOW HAS RECEIVED  
BETWEEN 70% AND 95% REVIEWS IN  
MAGAZINES

TOWER OF BABEL  
MICROPROSE SOCCER  
SHUFFLEPUCK CAFE  
KID GLOVES  
GRAND MONSTER  
SLAM  
E-MOTION  
DUNGEON QUEST  
DATASTORM  
RVF HONDA  
POWERPLAY

4.99 each  
or all 10 for only  
39.95



LOW  
COST  
AMIGA/ATARI  
REPLACEMENT MOUSE  
ONLY 14.95

## HOW TO ORDER

BY POST: Computer Supplies Ltd, Unit 3, Railway  
Ent. Centre, Sheilton Road, Stoke on Trent, ST4  
7SH, Dept AMCB  
Print name, address, order requirements and a  
daytime telephone number if possible. Enclose a  
personal cheque, bankers draft, building society  
cheque or postal order made payable to MEDIA  
DIRECT C.S.Ltd. Please note cheques require 5  
working days for clearance.

FAX **0782 281506** As post but include credit  
card number, expiry date and cardholders full  
address for immediate despatch.

DELIVERY SERVICE. Please add £2.95 for  
standard delivery or £9.00 for next working day  
delivery. UK mainland only (excluding highlands).

## TELESALES HOTLINES :-

**0782 208228**

COME AND VISIT OUR SHOWROOM



Electronic Arts have been bringing award-winning software to the Amiga since its earliest days.

Stevie Kennedy went to find out how they do it

# The producers

**C**ramped smoke-filled offices in a back room over a Chinese laundry, filled with half-eaten Pot Noodles and long-haired ex-hippies dreaming of the ultimate game. Pink Floyd posters on every available surface, a few weather-beaten and thoroughly under-used filing cabinets, and perhaps the odd game in development – this is the traditional image of the average games software company. Electronic Arts could hardly be more different.

Maybe it's the ultra-modern headquarters building in the security-conscious business park, or the obviously Californian-style open plan offices. Perhaps it's the award certificates plastering the reception area walls like so

much adulatory wall-paper, or the reception desk groaning under the weight of Tilt D'Or awards. Whatever it is, the visitor is left in no doubt that EA are in the serious business of producing leisure software, and they're in it to stay.

As Sara Shrapnell, EA's effervescent PR co-ordinator, told me, "We're not just here to make a fast buck – we want to be here in fifty years' time."

To date, the European subsidiary has been here for only four years, but in that time they have released dozens

of titles on seven different formats including programs as diverse as James Pond, Interceptor, and the all-conquering Deluxe Paint III. The sleek offices in Langley, Berkshire are now home to nearly 50 staff, and exude an aura of quiet confidence.

What, I wanted to know, was the secret behind EA's success?

"Some companies," Sara told me, "are

formed by successful programmers who want to start a business. We were formed by businessmen who wanted to make successful software."

Surely business acumen isn't the only way to make good games? Is EA just a business?

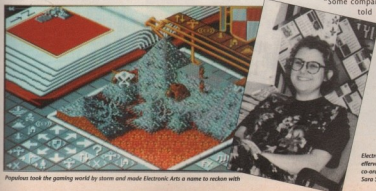
"No. We put a lot of effort into producing good games. Our Producer system allows us to adopt an entirely 'hands-on' approach."

## Movie makers

Electronic Arts, I found, are very proud of what they call their Hollywood-inspired Producer system, adopted in an attempt to engender the "optimum environment" for software development.

The idea basically involves a producer (project manager by another name) whose job it is to take a game from the initial stages and oversee its production and development right up to packaging and marketing.

In this way, individual programmers and development teams code games out of house under the EA banner, liaising with producers who do their best to



Electronic Arts effervescent PR co-ordinator Sara Shrapnell

Populous took the gaming world by storm and made Electronic Arts a name to reckon with

## From Tanx to John Madden

Our regular readers could not help but remember the feature game on our May coverdisk, Amiga-Tanx, written by Gary Roberts. The same Gary Roberts now spends his days in a cube at Electronic Arts which he shares with Stefan Walker, the other half of EA's relatively new in-house programming team.

For years EA have relied on outside authors and coders to develop and convert the games they market, but in a recent move to promote flexibility and ensure titles appear on as many formats as possible, the in-house team was formed to carry out the work of converting successful games to new machine formats.

Gary is at this moment working on John Madden's American Football, already a smash hit on the Sega Megadrive, and Stefan is in the middle of bringing LHX Attack Chopper over from the PC to the Amiga.

Gary's route into the games software business was more conventional than traditional. After college and the almost compulsory three A levels, he went to IBM for a year on a work experience placing. While working on one of Big Blue's multimedia projects, however, he still hankered after a job writing games.

To this end, he set out to code Amiga-Tanx and a mammoth six-disk one-hour-long Pong Flyk demo (now available in the public domain) and sent them to a number of software companies. The results weren't long in coming.

"You'd be surprised", Sara told me, "at just how much of

the stuff we receive from programmers is instantly forgettable. When we saw the Amiga-Tanx game we reached for the phone".

### Artistic Choices

Gary, meanwhile, had received an offer from another large software house. So why did he choose EA?

"Everyone here was so friendly, and when I came to see the company I just thought 'wow!'"

Electronic Arts have a reputation which attracts good programmers, but that's hardly unique to them.

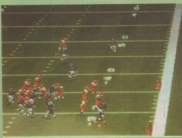
There are other large software houses with a track record to match, so was it the EA working style that appealed to Gary?

"Yes, it's all quite relaxed. There's no-one standing over you cracking a whip, but the work still gets done. Coming from IBM I was looking for somewhere less formal, and here you can turn up wearing anything you want and work more or less to your own deadlines. People sometimes turn up in fancy dress and have discos in their cubicles!"

What's the most productive aspect of your weekly routine? It's all very well coming to work in a chicken suit, but is there an aspect of the work you could put your finger on as especially important?

"Communications are very good. Everyone gets to know what the other departments are up to at our Friday meetings. That way if we have any means we can get them sorted out."

Other than that, it's just the atmosphere here that's very productive".



John Madden's American Football looks set to become as big a hit on the Amiga as it was on the Sega. Look out for it at Christmas

relaxed and informal office and is popular from the point of view of the authors as well. Marc Dawson from Mandarin software, formerly of Eidtich

The Cat, and co-author of Projectile (another of Kevin's projects) told me, "When they decide they like something, they go away and sort out all the

red tape, then you sign a contract and they take care of you."

So the system works?

"Yes. They're definitely the best people to work with from the author's viewpoint. Kevin looked after everything for Eidtich."

And do you think this is what produces good games? Isn't it true to say that games such as Bullfrog's Populous can land on EA's lap as a fait accompli?

"True to a point, but EA can spot a game's potential, and with their reputation they attract good software teams."

### Talent hunters

Bullfrog are a prime example of the sort of team whose work finds the light of day under the EA flag. Populous was one of the most original games to appear on the Amiga, and it was only after one software company turned it down that EA's Joss Ellis said "yes".

Bullfrog's Peter Molyneux told me he had originally approached EA "when it was a flat in Bayswater" with a database program which EA turned down. Bullfrog then developed the shoot-'em-up, Fusion, and a fledgling demo version of Populous.

TelecomSoft turned them down, but EA saw the potential offered by Populous and one of the most successful partnerships of the last couple of years was born.

"The game (Populous) was really

Here's a quick rundown of the releases Electronic Arts would like to remember with affection, and a few they would not! All scores in parenthesis are as awarded by Amiga Computing's reviewers at the time.

1987 - Deluxe Paint released in Europe and makes EA a name in Amiga software. The company, just launched as a

EA roll  
of honour



Battle Chess and the Bard's Tale series - typical of EA's early successes in that they're unusual and a far cry from arcade shoot-'em-ups

Game	Score	Year
Amiga Computing's Reviewers		
1987 - Deluxe Paint	9.0	1987
1987 - Fusion	8.5	1987
1987 - Populous	9.5	1987
1987 - Projectile	8.0	1987
1987 - The Cat	7.5	1987
1987 - The Bard's Tale	8.5	1987
1987 - Battle Chess	8.0	1987
1987 - LHX Attack Chopper	7.5	1987
1987 - American Football	8.5	1987
1987 - Tanx	7.0	1987
1987 - Pong Flyk	6.5	1987
1987 - The Cat	7.5	1987
1987 - The Bard's Tale	8.5	1987
1987 - Battle Chess	8.0	1987
1987 - LHX Attack Chopper	7.5	1987
1987 - American Football	8.5	1987
1987 - Tanx	7.0	1987
1987 - Pong Flyk	6.5	1987

*We're not just here to make a fast buck - we want to be here in fifty years' time*

nothing more than a demo when we showed it to Electronic Arts, and we had about six month's work to put in on it, but they liked it straight away."

What was your overriding impression of the EA way of doing things? Is there one word that sums them up?

"Professionalism", Peter told me. "They have faults too, of course, the main one being the way their decisions can be driven by the parent company in the States."

And do they, in your opinion, have one secret to help produce quality games?

"Their quality control is very tight. It can be incredibly frustrating for programmers to have a game returned to them for the smallest of changes, but EA's thoroughness pays off in the end."

"They're also quite flexible. The knights facility in Populous became one of the most important aspects of gameplay, but it was only included a week before the original deadline for the program."

"We convinced EA that it was an important feature and they agreed to its inclusion, even though they had to delay things by three weeks as a result."

## Cubes and QA

Electronic Arts' most thorough games testing takes place in what is called a "cube" – everyone at EA works in a "cube" of an open plan office – filled with games software and computers. There the customer services lads are locked for a week at a time to play games eight hours a day.

If that sounds like fun, stop and think again. The CS people have a brief to play every game to exhaustion, and to the bitter end. Every move is recorded on VCR so that if a bug should arise, it can be played back for the coders to see for themselves what's gone wrong.

"Customer services have a vested interest in finding every bug", Sara told me, "because if there's anything wrong

*When I came to see the company I just thought WOW!*

with a game it's them who have to take the calls from irate customers. They also get to know the games very well, and so can help with any queries, better sometimes even than the programmers."

After all the marketing and production has taken place, the documentation with its six language translations dotted to the last "I", and the advertising splash planned, a game's release date and final form are determined by a trio of joystick-wielding game players. As a last stage of development, the advantages of having a game tested to destruction by critical gamers should be obvious.

In the final analysis it's the game players who count, and even if you level the obvious criticism that EA is the corporate face of games software, and an acute departure from the sort of companies which brought us many of the older classics, you'd still have to agree they produce games that game players like to play.

They've had their turkeys, of course, and the policy of taking on a certain number of odd or very different game projects has led EA into more than one flop. With a long list of smash hits, however, and a development process favoured by the accountants and coders alike, you'd have to be a few sprites short of a shoot-'em-up if you didn't think EA would continue to produce the goods.

I for one am looking forward to Populous 2.

subsidiary of the giant American Electronic Arts, begins small but with a bang.

1988 – Bard's Tale (84%) and F/A-18 Interceptor (96%) become smash hits and the latter is bundled with A500s. Other hits include Fusion (73%), Battle Chess (77%). Flops include Ferrari Formula 1 and Earl Weaver's Baseball. EA now established as a name in the games market as well as productivity.

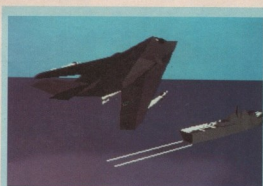


Seed of Twilight fared worse than it deserved

1989 – DPaint III launched to critical acclaim. The punters go wild for its Anim facility and a buoyant EA successfully completes their first issue of shares to the public. Populous (87%) attracts rave reviews. Other hits: Powerdrome (82%) and Zany Golf (90%) – though the punters didn't agree totally with our reviewer! Flops include Reach For the Stars and Swords of Twilight.

1990 – Though launched too late for the year, Powermonger becomes the most awaited game of 1991. The EA/Bullfrog combination is proving a huge success. Other hits: 688 Attack Sub (82%), Neuromancer (80%). Flops include Keef The Thief and Hound of Shadow.

1991 – Powermonger finally launched and is as good as promised. The game is smothered in awards. Other hits include PGA Tour Golf (75%) and



## Birds of Prey

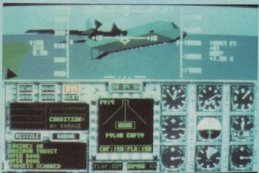
Electronic Arts, as has been pointed out, have the reputation to attract top games writers and development teams, and this is the case with their next most awaited release, the flight simulator Birds of Prey.

Coded by Stargider author Jez San and Argonaut Software, the game will be released "later this year" and we have been reliably informed that it will feature no fewer than 40 different combat aircraft. Realistic flight perfor-

mance is promised, as is a high degree of realism both in the air and on the ground.

## Son of Starglider?

With Argonaut's past history, Birds of Prey is likely to feature at the least a lot of smooth 3D action, but whether they can combine this with realism is something you'll have to watch our game zone to find out.



Centurion (reviewed this issue). Bard's Tale 3 is a surprising disappointment – the RPG genre has overtaken the series' old-fashioned style of gameplay.

Releases to look forward to include John Madden's American Football, LHX Attack Chopper, Zone Warrior, and Jez San's (of Starglider fame) Birds of Prey.



Zone Warrior will be a smash 'em up and a departure from EA's usual strategy games

# PUBLIC APOLOGY

M. D. Office Supplies would like to apologise to all its competitors in this magazine. As ever we shall be offering Diskettes, Storage Boxes, etc at prices which are simply **INCREDIBLE**

**JUST LOOK AT THESE SUPERB OFFERS**

**100% CERTIFIED**

**Disk Offer 2**

20 Double Sided,  
Double Density 3.5"  
**PLUS**  
Deluxe storage box  
and Labels  
**£16.99**

**Disk Offer 1**

100 Double Sided,  
Double Density 3.5"  
**PLUS**  
100 Capacity 3.5"  
lockable box  
**PLUS**  
100 Labels **£44.95**

**100% GUARANTEED**

**Disk Offer 3**

40 Double Sided,  
Double Density 3.5"  
**PLUS**  
Deluxe storage box  
and Labels  
**£24.99**

## LIFETIME DISKETTE WARRANTY

**Disk Offer 4**

80 Double Sided,  
Double Density 3.5"  
**PLUS**  
Deluxe storage box  
and Labels  
**£39.95**

**Disk Offer 5**

200 Double Sided,  
Double Density 3.5"  
**PLUS**  
2, 100 Capacity 3.5"  
lockable boxes  
**PLUS**  
200 Labels **£74.95**

**Disk Offer 6**

400 Double Sided,  
Double Density 3.5"  
**PLUS**  
4, 100 Capacity  
boxes and Labels  
**£139.95**

ALL STORAGE BOXES SUPPLIED ARE  
ANTI STATIC, LOCKABLE, HAVE  
AMPLE DIVIDERS AND TWO KEYS

### 'MAGIC MEDIA' HIGH DENSITY 3.5" DISCS

10 DS HD 3.5" 1.44 MEG DISCS IN LIBRARY CASE	£14.99
30 DS HD 3.5" 1.44 MEG DISCS WITH STORAGE BOX	£39.95
50 DS HD 3.5" 1.44 MEG DISCS WITH STORAGE BOX	£49.95
100 DS HD 3.5" 1.44 MEG DISCS WITH STORAGE BOX	£64.99

(AS EVER LIFETIME GUARANTEED, UNQUESTIONABLE QUALITY)

### 5.25" 'MAGIC MEDIA' DS DD DISCS

20 DS DD 5.25" 720K DISCS WITH OUR DELUXE STORAGE BOX	£13.95
50 DS DD 5.25" 720K DISCS WITH OUR DELUXE STORAGE BOX	£19.95
70 DS DD 5.25" 720K DISCS WITH OUR DELUXE STORAGE BOX	£23.95
100 DS DD 5.25" 720K DISCS WITH OUR DELUXE STORAGE BOX	£29.95
200 DS DD 5.25" 720K DISCS WITH 2 DELUXE STORAGE BOXES	£54.95

What can we say, simply these are the best value money can buy. These diskettes are packed in 10's, certificated, sealed, 100% quality product  
**YOU CANNOT BUY BETTER**

### ACCESSORIES

100 CAPACITY 3.5" LOCKABLE STORAGE BOX	£7.95
100 CAPACITY 5.25" LOCKABLE STORAGE BOX	£7.95
3.5" OR 5.25" PACK OF 5 LIBRARY CASES	£4.95
TILT N TURN MONITOR STAND	£12.95
UNIVERSAL PRINTER STAND	£7.95
PROFESSIONAL PRINTER STAND	£24.95
3.5" OR 5.25" HEAD CLEANERS	£2.95
DELUXE MOUSE MATS	£2.95
ROLL OF 1000 3.5" DISKETTE LABELS	£12.95

### BRIILLANT EXCITING NEW PRODUCT

Re-link the product that will allow you to re-use your fabric ribbons up to 50 times. Sounds amazing and it is, just think of the saving you will make.  
1 can of Re-link is all you need, and the price!

**£12.95!**  
Simply Incredible!

### BANX BOXES

BY OVERWHELMING PUBLIC DEMAND  
WE ARE NOW ABLE TO OFFER THESE BOXES  
AGAIN. THEY STACK HORIZONTALLY  
OR VERTICALLY  
FIRST COME - FIRST SERVED  
ONLY **£9.95**

### AMIGA REPLACEMENT MICE

Probably the best two mice on the market.  
Logitek or Naksha, host of features, reliable, very  
smooth operation, superb value and best of all  
only **£22.99**

**18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS. TELESales HOTLINE: 0689-861400**

(All prices quoted are inclusive of VAT and carriage UK Mainland only) E.&O.E.  
EDUCATIONAL & GOVERNMENT ORDERS WELCOME





Hunter .....46



Logical .....48



Centurion .....52



Stormball .....50



Proflight .....56



Game Cheats .....64



Crime doesn't pay .....56



Hydra .....60

## GALLUP CHART

Compiled exclusively for

AMIGA  
COMPUTING

1	Eye of the Beholder	US Gold	£30.99	11	Treasure Island Dizzy	Code Masters	£4.99
2	Monkey Island	US Gold	£29.99	12	Miami Chase	Code Masters	£7.99
3	Fantasy World Dizzy	Code Masters	£9.99	13	North and South	Digital Integration	£7.99
4	Kick Off - Winning Tactics	Anco	£12.99	14	Toki	Ocean	£24.99
5	PGA Tour Golf	Electronic Arts	£25.99	15	Railroad Tycoon	Microprose	£34.99
6	Lombard RAC Rally	Hit Squad	£7.99	16	Little Puff	Code Masters	£5.99
7	Hero Quest	Gremlin Graphics	£25.99	17	Xenon 2	Mirror Image	£9.99
8	Defender of the Crown	Mirror Image	£9.99	18	Armour-Geddon	Pygnosis	£25.99
9	Lemmings	Pygnosis	£24.97	19	Carrier Command	Mirror Image	£9.99
10	3D Pool	Mirror Image	£9.99	20	Speed Ball 2	Mirrorsoft	£24.99

This chart is compiled by Gallup Ltd

tip SHOP

Activate cheat mode by hitting Page 64

# The

**Are you confused by CLI?  
Baffled by backups?  
Frustrated by files?  
Now your problems are over.**

# WORKSTATION

# is here!

It's no secret that the Amiga is the most powerful home computer of them all. What has remained a mystery for most newcomers is how to make the most of its immense potential. Now **Amiga Computing** has produced a floppy disk that is packed with everything you need to take the hassle out of harnessing the inbuilt power of your Amiga.

Many months of research and testing have resulted in a **simple-to-use**, single disk replacement for Commodore's Workbench which we're calling **The WorkStation**.

This indispensable collection of utilities, including some outstanding shareware never before assembled together on one disk, is now available for just £3.50.

**It's too good to miss!**

Got a faulty floppy? When vital disks get damaged, you'll now have the chance to try the seemingly impossible mission of recovering all your work. Workbench's geriatric DiskDoctor can be sent into retirement by this super utility!

The ability to design custom icons as standard is virtually unique to computers in the Amiga's class. The WorkStation turns your Amiga into a comprehensive design studio, providing a wide range of graphic tools that can make icon creation child's play.

Heart of The WorkStation is a powerful shareware package called S/D. When you use it you can say goodbye to faceless blank screens and complex commands. Instead your mouse takes full control. Fiddle with files, display text and graphics, archive... all this and more with just a click of a mouse button.

Aspiring artists: Here's the package you've been waiting for! Using nothing more than your trusty mouse you can now freeze and store any Amiga screen that runs under Workbench. Grab screens from your favourite PD game and "edit" those high scores using any popular paint package.

The WorkStation has a fully configured dynamic recoverable ram drive which acts like an extra invisible drive to your standard Amiga drive because it is very flexible and goes easy on memory.

Putting print to paper? The WorkStation disk includes a superb text editor. This unashamedly no-frills approach to producing and formatting professional looking text that would be envied by many of the more expensive commercial products.

## PLUS! PLUS! PLUS!

As well as all these superb features The Amiga Computing WorkStation also includes a wide range of programs designed to make life with your Amiga a whole lot easier. There are simple solutions to everyday problems, such as mouse utilities which display screen co-ordinates and give your rodent a much needed speed boost.

- You can even define extra pulldown Workbench menus that cut out the familiar icon clutter and let you really get down to business.
- In addition to all of these valuable new features all traditional CLI commands have been retained - for the old hands among you!

All this  
- and much,  
much more for just

## £3.50

Including fully detailed,  
easy-to-understand  
manual

**To order, please use the form on Page 143**

## PEGASUS – Gremlin

After milking the race game genre a tad, the lads at Gremlin have gone back to the days of ancient Greek mythology for their latest offering, Pegasus. Set in the days of monsters and magic, Satan (the baddy) has



shattered the magic crystals which hold the souls of the incarnations of six planes of existence. Satan now has ultimate rule over the planes and the mortal world.

You play the famous Perseus. With your friend and flying companion the Pegasus, you must thwart Satan's evil plan by collecting all the fragments of the crystals, bringing them together so that the incarnations can function once more.

## BEAST BUSTERS – Activision

Fans of the gory Operation Wolf-like shoot-'em-up Beast Busters will be pleased to hear that Activision have snapped up the rights to convert it to the Amiga. You must frantically blast through seven levels of Zombie-infested screens ranging from the Subway section on level one, to the final confrontation with the mad scientist on level seven.

In true Operation Wolf style, two players can blast away simultaneously at the Zombies which will attack you relentlessly.



# PREVIEWS

Jason Holborn spills the beans on the latest offerings from the Amiga games scene

## PROJECT X – Team 17

Team 17 are a busy lot. With their first release, Full Contact, doing very nicely thank you and Alien Breed now only a matter of days away, the team are already hard at work on their latest project, a very flash looking (but yet unnamed) 1 Mb only shoot-'em-up.

The game features a full screen, scrolling overscan display, 50 frames per second animation, 32 colours and 10 butt-kickin' weapons. Packed to the hilt with speech, fabulous graphics, special effects and arcade-like gameplay, Team 17's latest looks set to be a real scorcher!

Above is a picture of the team itself, sat on the bonnet of a very flash Iroc sports car. From left to right they are – Andreas Tadic (programmer), Rico Holmes (artist), Peter Tuleby (programmer) and Martyn Brown (Team 17 leader).

Team 17 would like to apologise for the silly shades, but apparently they are standard issue in such PR shots.



## THE GATEWAY TO THE SAVAGE FRONTIER –SSI/US Gold

If you're after a decent role-playing game, then there's no better label to look for than that of SSI, the US-based company that brought such classics as the Pool of Radiance series to the Amiga.

Gateway to the Savage Frontier begins a new era of role-playing adventure in the Forgotten Realms. Starting in the town of Yartar, you must venture through a large area of wilderness on a quest to gather four magical statues.

With these items of magical power, you can stop the advance of evil across the previously impassable Great Desert of Anaurach.



## MAD TV – Rainbow Arts

Falling in love is all very nice, but it can also get you into an awful lot of trouble. Take young Archie for example. He's fallen in love with Betty Botterblom, the attractive television



announcer at Mad TV. In an attempt to get close to Betty, Archie takes on the identity of Manfred L. Feinbein, the new programme director.

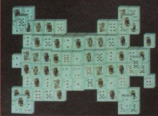
Unfortunately, in this humorous simulation of television life, Archie is also expected to save the Mad TV studios from liquidation by increasing its viewing figures substantially.

He must plan the programmes, search for the hottest news and finalize contracts for TV spots to get extra revenue, but also not forget Betty – she needs lots of devoted attention to keep her interested.

## SHANGHAI II: DRAGON'S EYE – Activision

The original Shanghai was a real corker of a game and Activision hope to achieve similar success with the launch of the sequel which is due some time in September.

The game builds on everything that made the original such a playable game, but adds even greater challenges to bring the game right up to date. It uses 12 different layouts taken



from the Chinese calendar in the shape of the rabbit, ram (ram with horns, not expansion ram!), snake, 'ox, rooster and more.

After you've successfully cleared all the tiles, you're rewarded with an animated picture of the animal. Pretty good, huh?

And when you have successfully mastered all the levels, you earn the right to take on the challenge of the Dragon's Eye...



*I wandered lonely as a cloud, or something like that. Anyway there's no time for sightseeing – there's a war on you know*



*Ahh, nice of HQ to lay on transport like this. Nothing like nicking the General's car to get you in a good mood*

**W**hen you hear that a dictator backed by a huge army has invaded a small territory you may start to think, uh oh, they didn't take long to make a game out of that! Indeed, it does sound very similar to what a certain person did to a certain country not so long ago.

But before the accusations begin about cashing in, let me say that Hunter was formulated way before anything happened out in the Gulf. Hunter comes from the revamped Activision. This month sees them staging a comeback the likes of which would make even George Foreman think twice.

Just a matter of months ago it looked like Activision were to be a name of the past, another of the glory boys who couldn't quite hack it. Well just to prove everybody wrong, they've returned. With The Disk Company in France at the helm, Activision are back in business and out to impress.

In Hunter, a small but strategically important group of islands has been invaded by an army of some considerable strength. Your commanders do

not want to risk a full-scale military counter-attack just yet as the casualties would be unacceptably high.

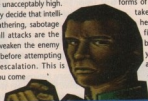
So they decide that intelligence gathering, sabotage and small attacks are the way to weaken the enemy enough before attempting further escalation. This is where you come in. You

are one of a new breed of soldier, trained in undercover work and all forms of combat. Chosen to undertake the missions deep in the heart of enemy territory, you find yourself working alone behind enemy lines where you have to keep your wits about you just to survive, let alone complete your mission and make it back home.

Before you start each mission you are given a briefing by your superiors in which they tell you what you have to do and how long you have to do it.

This ranges from a couple of hours to a couple of days – not real time I might add. After that you'll have to pop off to the stores to fill up your kitbag and away you go.

One of the things which makes Hunter so damn addictive is that



*Stand by to be hunted down*

# HUNTER

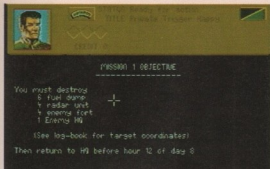
Publisher: Activision Price: £29.95 Release date: Late August



*A moop! Now that'll be handy. I wonder if they'll mind if I borrow that armoured car?*

*Cos, I can fit loads more in my kit bag and the thing weighs a ton already. Can anyone see a porter anywhere?*

*A lousy drive in the country and not a Granada service station in sight. I'll just pop behind this house for a you-know-what*



At a dodgy Eight days to cause this much carnage – no problem

regardless of which mission you are on there are no restrictions, apart from time, over how you do it. You can use whatever transport or equipment you like. This sense of freedom allows exploration and experimentation over transport and equipment mixes.

For example a typical mission could go like this. Exit briefing and go to stores. Fill up kitbag and grab ammo. Jump in the car and head to the church. Nick the vicar's bike and go to the boat. Sail over to the next island and jump in the helicopter.

Then fly over to enemy territory.

## Graphics

The limited use of colour doesn't detract from the game in any way, in fact it adds to the atmosphere, especially at night. The different vehicles are wonderfully drawn and look really good when in use.

## Sound

The game is let down badly by the sound. There is no in-game music at all, so you have nothing to listen to on those long walks with no transport. The effects are limited to a few different blasts and some engine noises.

## Gameplay

Hunter is in a class of its own as far as gameplay goes. Loads of missions ranging from dead easy to outrageously tough. With so many variations possible no two games need be alike. If you buy no other game this month, buy Hunter.

Land and raid some enemy buildings. Wear an enemy uniform and start talking to enemy soldiers. Nick an enemy's car and run him over. Then find your mission objective, blow it up and still be home in time for tea and Neighbours.

Or it could be completely different – that's the beauty of Hunter, so long as it's within the time limit anything goes. There are heaps of different modes of transport but each has its own problems – just try controlling the helicopter when it's at maximum thrust!

On completion of a mission you are awarded a bounty for your efforts – but if you don't like chocolate they'll give you money instead.

Hunter is very addictive with tons of missions, each requiring different skills and each like a game on its own. Try the last mission where you have to assassinate the enemy leader and bring back his head – great fun.

You can do the job quickly and wander about the islands for a while sight-seeing. Everything you do has a knock-on effect. If, for example, you blow a radar tower in one mission it won't be able to detect you on any later missions and any soldiers you take out stay dead.

The graphics are 16-colour solid 3D with the game viewed from an independent perspective, and the controls are easy to master.

If this is what we can expect from Activision in the future then it looks like they're back with a vengeance. Just watch this one zoom up the charts when it's released at the end of August.

Fred Reagan



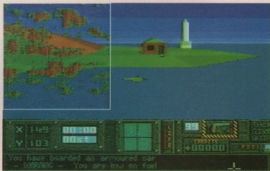
Part of your specialist training was obviously in house-breaking, and this time it reaps rewards



That monument must need some close-up examination, or maybe I should just blow it up?



The vehicles have a nasty habit of running out of fuel so make sure you raid a dump somewhere for some more



Just popping into the sea for a dip. No pollution problems here, but watch out for sharks

**T**he mere mention of a puzzle-style game usually has arcade freaks turning to the next page. If there are no aliens to blast or end-of-level guardians to wipe out and no death and destruction to deliver, they just aren't interested.

All that could be about to change with the release of Logical from Rainbow Arts, the team who brought you Curse of Ra - remember? This new game requires a combination of fast reactions and a little brain power and should appeal to just about everyone, even little Johnny next door who is obsessed with playing John Madden's Football on his Mega drive.

The basic concept, as with all the best puzzle games, is very simple and can be picked up in minutes. All you have to do is manoeuvre the marbles through the various receptacles until you have filled each one with four balls of the same colour.

Sounds simple so far doesn't it? Well there's a bit more to it than that. The receptacles are connected by channels all over the screen along which you can pass the marbles. Each one can be rotated through 90 degree angles so that marbles can be collected and despatched through the channels. And just to make things a little more difficult, it is timed.

Still sounds simple? Well that's all there is to the first few levels, but just when you're getting used to it and

thinking you're really hot a few elements are thrown in to make you stop in your tracks.

Little things like colour stoppers that will only allow marbles of a certain colour through and colour changers that will let any marble through but change its hue on the way.

And how about the traffic lights which mean that you have to fill the receptacles in a certain order before you can progress with the game?

If all that isn't enough there are also one-way channels and colour handicaps and forecasts to contend with, but if I told you about everything it

wouldn't be any fun would it? There are 99 levels to play through and a password system has been included so that you can avoid all those easy levels you have done before. And believe me, when you get up to the higher levels you will need all of your time to concentrate on those tricky traps instead of messing about with the easy stuff.

When you have completed all 99 levels (some chance!) you receive a password that enables you to enter the level construction kit where you can devise your own devious levels. You can save your creations on disk to amaze and confuse your friends with later.

Logical may have you bashing your mouse in frustration but it will also have you coming back for more - a lot more!

Fred Reagan



Now it's time to lose your marbles

# LOGICAL

Publisher: Rainbow Arts Price: £19.99

*The next ball to come onscreen is blue. If it was yellow you would be able to finish this level. The indicator at the bottom centre of the screen shows what's coming next*



*For some reason on this level the balls seem to be flowing exactly in the right order, but be assured that normal service will be resumed shortly and then you won't feel so sure!*



*This level has more elements than most, the colour receptacle in the middle needs to be copied in an empty receptacle to enable any progress to be made*



*As each level wears on there is less room to manoeuvre and the action soon becomes mind-blowingly complex. This level shows the one-way channels at the bottom right and the transporters*



*You're almost out of time on this level and judging by the state of the screen it's probably just as well 'cause you're in a bit of a mess aren't you?*

## Graphics

The onscreen presentation is very good and sports very clear graphics so that you know exactly what is going on - most of the time. There are four different sets of background graphics to choose from, which adds some variety.

## Sound

The effects used throughout the game are quite neat but not exactly what you would call mind blowing. There is some title music, but again, nothing to rave about.

## Gameplay

Very easy to get into with the early levels serving as an introduction to the many features of the game. One poor response from your mouse and you will start bashing it about in frustration as you miss that last marble by a whisker. You'll find yourself coming back to try and suss that last level many times.

# PICTUREWARE®

IS HERE!!! © N.J.N. Williams 1991

"Extraordinarily high quality... impressively clear images"...Amiga Shopper  
"Digitization of the pictures is very impressive"...New Computer Express

## Eight Disk Hyperdemonstration! Only £9.90 all in!!

So much more than just a games machine, the Amiga will astonish you. We've astonished ourselves!!! HOW??? Well we put this hyperdemonstration together, (using Gold Disk's Hyperbook) packaged it with our HAM & IF demos, added another disk of 14 pictures for good measure, put it in a box and decided to sell it for £9.90 all in!! Our hyperdemo requires one meg of memory to run properly, (there's a lot in it!). We can supply a half meg board and hyperdemo for £42.90. The regular demo are of course still available, our 4 disk demo set (including two catalogue disks) is £3.90, (and only requires a standard half meg); for this set please specify IFF or HAM disks.



Our most popular Pictureware titles include:-

- Sunset Disks 1&2
- Motorbikes Disks 1,2&4
- Compilation Disks 1&2
- The Nude Disks 1&2
- People Disks 1&2
- Hothouse Plants Disks 1,2&3

Over 40 disks now available!!!

**UNBEATABLE VALUE - Specially Preformatted Floppies**  
During Pictureware's development we created pictures in all sizes and formats. We're providing them for your fun and entertainment on SPECIALLY PRE-FORMATTED FLOPPIES. £9 for 10 disks, post free! No guarantee on this exceptional offer, if you like the pictures use them, if not delete them (much quicker than a disk format), and use the disks as blank floppies!!!

### ASK ABOUT OUR HIGH QUALITY DIGITIZING SERVICE!

Orders by post to: NIK WILLIAMS Broadcast, Dept.  Visa, Access,   
A.C. Asquith House, 21 Brynmill Crescent, Brynmill, Swansea, SA2 0AL.

Orders normally dispatched same day.

24 Hr Credit Card Phone/Fax Hotline 0792 645495

(When ordering by telephone please wait for FAX line to finish, at which point you'll be connected to our telephone system).

ONLY AVAILABLE FROM

NIK WILLIAMS

BROADCAST

0792 470503

GUIDING LIGHT PRESENT: THEIR NEW INTERACTIVE ADVENTURE

# INFERNO

THE ONLY THING WORSE  
THAN GOING TO HELL WHEN YOU'RE DEAD  
IS GOING THERE WHEN YOU'RE STILL ALIVE!

**0898 442 777**

Interial Puzzles, Frenzish Riddles, Stygian Touch, Demonic Closets, Hot-Air Balloons and a Diabolical Elvish Impersonator. All this and more when you enter the Inferno!  
ESCAPE FROM HELL OR ROT FOR ETERNITY - THE CHOICE IS YOURS!

**£500 PRIZE**

YOU THINK 15 HOURS OF TONY BLACKBURN JOKES IS HOT!  
WAIT UNTIL YOU VISIT - INFERNO

Full details of the competition rules, forthcoming games and all other services can be obtained by dialling the above number.

PROF. J Wright, PO Box 34, 5 W Manchester, M15 4LS

CALLS CHARGED AT 33p Min "Cheap" Rate and 44p Min at all other times.

From ONLY

**60p**  
per disk



Catalogue  
Disk

**75p**

### UTILITIES

- 0001 Amiga Assistant
- 0002 Amiga Backup
- 0003 Amiga Backup
- 0004 Amiga Backup
- 0005 Amiga Backup
- 0006 Amiga Backup
- 0007 Amiga Backup
- 0008 Amiga Backup
- 0009 Amiga Backup
- 0010 Amiga Backup
- 0011 Amiga Backup
- 0012 Amiga Backup
- 0013 Amiga Backup
- 0014 Amiga Backup
- 0015 Amiga Backup
- 0016 Amiga Backup
- 0017 Amiga Backup
- 0018 Amiga Backup
- 0019 Amiga Backup
- 0020 Amiga Backup
- 0021 Amiga Backup
- 0022 Amiga Backup
- 0023 Amiga Backup
- 0024 Amiga Backup
- 0025 Amiga Backup
- 0026 Amiga Backup
- 0027 Amiga Backup
- 0028 Amiga Backup
- 0029 Amiga Backup
- 0030 Amiga Backup
- 0031 Amiga Backup
- 0032 Amiga Backup
- 0033 Amiga Backup
- 0034 Amiga Backup
- 0035 Amiga Backup
- 0036 Amiga Backup
- 0037 Amiga Backup
- 0038 Amiga Backup
- 0039 Amiga Backup
- 0040 Amiga Backup
- 0041 Amiga Backup
- 0042 Amiga Backup
- 0043 Amiga Backup
- 0044 Amiga Backup
- 0045 Amiga Backup
- 0046 Amiga Backup
- 0047 Amiga Backup
- 0048 Amiga Backup
- 0049 Amiga Backup
- 0050 Amiga Backup
- 0051 Amiga Backup
- 0052 Amiga Backup
- 0053 Amiga Backup
- 0054 Amiga Backup
- 0055 Amiga Backup
- 0056 Amiga Backup
- 0057 Amiga Backup
- 0058 Amiga Backup
- 0059 Amiga Backup
- 0060 Amiga Backup
- 0061 Amiga Backup
- 0062 Amiga Backup
- 0063 Amiga Backup
- 0064 Amiga Backup
- 0065 Amiga Backup
- 0066 Amiga Backup
- 0067 Amiga Backup
- 0068 Amiga Backup
- 0069 Amiga Backup
- 0070 Amiga Backup
- 0071 Amiga Backup
- 0072 Amiga Backup
- 0073 Amiga Backup
- 0074 Amiga Backup
- 0075 Amiga Backup
- 0076 Amiga Backup
- 0077 Amiga Backup
- 0078 Amiga Backup
- 0079 Amiga Backup
- 0080 Amiga Backup
- 0081 Amiga Backup
- 0082 Amiga Backup
- 0083 Amiga Backup
- 0084 Amiga Backup
- 0085 Amiga Backup
- 0086 Amiga Backup
- 0087 Amiga Backup
- 0088 Amiga Backup
- 0089 Amiga Backup
- 0090 Amiga Backup
- 0091 Amiga Backup
- 0092 Amiga Backup
- 0093 Amiga Backup
- 0094 Amiga Backup
- 0095 Amiga Backup
- 0096 Amiga Backup
- 0097 Amiga Backup
- 0098 Amiga Backup
- 0099 Amiga Backup
- 0100 Amiga Backup

### BUSINESS

- 0200 D-Base - Database Programme
- 0201 D-Base - Database Programme
- 0202 D-Base - Database Programme
- 0203 D-Base - Database Programme
- 0204 D-Base - Database Programme
- 0205 D-Base - Database Programme
- 0206 D-Base - Database Programme
- 0207 D-Base - Database Programme
- 0208 D-Base - Database Programme
- 0209 D-Base - Database Programme
- 0210 D-Base - Database Programme
- 0211 D-Base - Database Programme
- 0212 D-Base - Database Programme
- 0213 D-Base - Database Programme
- 0214 D-Base - Database Programme
- 0215 D-Base - Database Programme
- 0216 D-Base - Database Programme
- 0217 D-Base - Database Programme
- 0218 D-Base - Database Programme
- 0219 D-Base - Database Programme
- 0220 D-Base - Database Programme
- 0221 D-Base - Database Programme
- 0222 D-Base - Database Programme
- 0223 D-Base - Database Programme
- 0224 D-Base - Database Programme
- 0225 D-Base - Database Programme
- 0226 D-Base - Database Programme
- 0227 D-Base - Database Programme
- 0228 D-Base - Database Programme
- 0229 D-Base - Database Programme
- 0230 D-Base - Database Programme
- 0231 D-Base - Database Programme
- 0232 D-Base - Database Programme
- 0233 D-Base - Database Programme
- 0234 D-Base - Database Programme
- 0235 D-Base - Database Programme
- 0236 D-Base - Database Programme
- 0237 D-Base - Database Programme
- 0238 D-Base - Database Programme
- 0239 D-Base - Database Programme
- 0240 D-Base - Database Programme
- 0241 D-Base - Database Programme
- 0242 D-Base - Database Programme
- 0243 D-Base - Database Programme
- 0244 D-Base - Database Programme
- 0245 D-Base - Database Programme
- 0246 D-Base - Database Programme
- 0247 D-Base - Database Programme
- 0248 D-Base - Database Programme
- 0249 D-Base - Database Programme
- 0250 D-Base - Database Programme
- 0251 D-Base - Database Programme
- 0252 D-Base - Database Programme
- 0253 D-Base - Database Programme
- 0254 D-Base - Database Programme
- 0255 D-Base - Database Programme
- 0256 D-Base - Database Programme
- 0257 D-Base - Database Programme
- 0258 D-Base - Database Programme
- 0259 D-Base - Database Programme
- 0260 D-Base - Database Programme
- 0261 D-Base - Database Programme
- 0262 D-Base - Database Programme
- 0263 D-Base - Database Programme
- 0264 D-Base - Database Programme
- 0265 D-Base - Database Programme
- 0266 D-Base - Database Programme
- 0267 D-Base - Database Programme
- 0268 D-Base - Database Programme
- 0269 D-Base - Database Programme
- 0270 D-Base - Database Programme
- 0271 D-Base - Database Programme
- 0272 D-Base - Database Programme
- 0273 D-Base - Database Programme
- 0274 D-Base - Database Programme
- 0275 D-Base - Database Programme
- 0276 D-Base - Database Programme
- 0277 D-Base - Database Programme
- 0278 D-Base - Database Programme
- 0279 D-Base - Database Programme
- 0280 D-Base - Database Programme
- 0281 D-Base - Database Programme
- 0282 D-Base - Database Programme
- 0283 D-Base - Database Programme
- 0284 D-Base - Database Programme
- 0285 D-Base - Database Programme
- 0286 D-Base - Database Programme
- 0287 D-Base - Database Programme
- 0288 D-Base - Database Programme
- 0289 D-Base - Database Programme
- 0290 D-Base - Database Programme
- 0291 D-Base - Database Programme
- 0292 D-Base - Database Programme
- 0293 D-Base - Database Programme
- 0294 D-Base - Database Programme
- 0295 D-Base - Database Programme
- 0296 D-Base - Database Programme
- 0297 D-Base - Database Programme
- 0298 D-Base - Database Programme
- 0299 D-Base - Database Programme
- 0300 D-Base - Database Programme
- 0301 D-Base - Database Programme
- 0302 D-Base - Database Programme
- 0303 D-Base - Database Programme
- 0304 D-Base - Database Programme
- 0305 D-Base - Database Programme
- 0306 D-Base - Database Programme
- 0307 D-Base - Database Programme
- 0308 D-Base - Database Programme
- 0309 D-Base - Database Programme
- 0310 D-Base - Database Programme
- 0311 D-Base - Database Programme
- 0312 D-Base - Database Programme
- 0313 D-Base - Database Programme
- 0314 D-Base - Database Programme
- 0315 D-Base - Database Programme
- 0316 D-Base - Database Programme
- 0317 D-Base - Database Programme
- 0318 D-Base - Database Programme
- 0319 D-Base - Database Programme
- 0320 D-Base - Database Programme
- 0321 D-Base - Database Programme
- 0322 D-Base - Database Programme
- 0323 D-Base - Database Programme
- 0324 D-Base - Database Programme
- 0325 D-Base - Database Programme
- 0326 D-Base - Database Programme
- 0327 D-Base - Database Programme
- 0328 D-Base - Database Programme
- 0329 D-Base - Database Programme
- 0330 D-Base - Database Programme
- 0331 D-Base - Database Programme
- 0332 D-Base - Database Programme
- 0333 D-Base - Database Programme
- 0334 D-Base - Database Programme
- 0335 D-Base - Database Programme
- 0336 D-Base - Database Programme
- 0337 D-Base - Database Programme
- 0338 D-Base - Database Programme
- 0339 D-Base - Database Programme
- 0340 D-Base - Database Programme
- 0341 D-Base - Database Programme
- 0342 D-Base - Database Programme
- 0343 D-Base - Database Programme
- 0344 D-Base - Database Programme
- 0345 D-Base - Database Programme
- 0346 D-Base - Database Programme
- 0347 D-Base - Database Programme
- 0348 D-Base - Database Programme
- 0349 D-Base - Database Programme
- 0350 D-Base - Database Programme
- 0351 D-Base - Database Programme
- 0352 D-Base - Database Programme
- 0353 D-Base - Database Programme
- 0354 D-Base - Database Programme
- 0355 D-Base - Database Programme
- 0356 D-Base - Database Programme
- 0357 D-Base - Database Programme
- 0358 D-Base - Database Programme
- 0359 D-Base - Database Programme
- 0360 D-Base - Database Programme
- 0361 D-Base - Database Programme
- 0362 D-Base - Database Programme
- 0363 D-Base - Database Programme
- 0364 D-Base - Database Programme
- 0365 D-Base - Database Programme
- 0366 D-Base - Database Programme
- 0367 D-Base - Database Programme
- 0368 D-Base - Database Programme
- 0369 D-Base - Database Programme
- 0370 D-Base - Database Programme
- 0371 D-Base - Database Programme
- 0372 D-Base - Database Programme
- 0373 D-Base - Database Programme
- 0374 D-Base - Database Programme
- 0375 D-Base - Database Programme
- 0376 D-Base - Database Programme
- 0377 D-Base - Database Programme
- 0378 D-Base - Database Programme
- 0379 D-Base - Database Programme
- 0380 D-Base - Database Programme
- 0381 D-Base - Database Programme
- 0382 D-Base - Database Programme
- 0383 D-Base - Database Programme
- 0384 D-Base - Database Programme
- 0385 D-Base - Database Programme
- 0386 D-Base - Database Programme
- 0387 D-Base - Database Programme
- 0388 D-Base - Database Programme
- 0389 D-Base - Database Programme
- 0390 D-Base - Database Programme
- 0391 D-Base - Database Programme
- 0392 D-Base - Database Programme
- 0393 D-Base - Database Programme
- 0394 D-Base - Database Programme
- 0395 D-Base - Database Programme
- 0396 D-Base - Database Programme
- 0397 D-Base - Database Programme
- 0398 D-Base - Database Programme
- 0399 D-Base - Database Programme
- 0400 D-Base - Database Programme

### MUSIC

- 0401 4-Min Music
- 0402 4-Min Music
- 0403 4-Min Music
- 0404 4-Min Music
- 0405 4-Min Music
- 0406 4-Min Music
- 0407 4-Min Music
- 0408 4-Min Music
- 0409 4-Min Music
- 0410 4-Min Music
- 0411 4-Min Music
- 0412 4-Min Music
- 0413 4-Min Music
- 0414 4-Min Music
- 0415 4-Min Music
- 0416 4-Min Music
- 0417 4-Min Music
- 0418 4-Min Music
- 0419 4-Min Music
- 0420 4-Min Music
- 0421 4-Min Music
- 0422 4-Min Music
- 0423 4-Min Music
- 0424 4-Min Music
- 0425 4-Min Music
- 0426 4-Min Music
- 0427 4-Min Music
- 0428 4-Min Music
- 0429 4-Min Music
- 0430 4-Min Music
- 0431 4-Min Music
- 0432 4-Min Music
- 0433 4-Min Music
- 0434 4-Min Music
- 0435 4-Min Music
- 0436 4-Min Music
- 0437 4-Min Music
- 0438 4-Min Music
- 0439 4-Min Music
- 0440 4-Min Music
- 0441 4-Min Music
- 0442 4-Min Music
- 0443 4-Min Music
- 0444 4-Min Music
- 0445 4-Min Music
- 0446 4-Min Music
- 0447 4-Min Music
- 0448 4-Min Music
- 0449 4-Min Music
- 0450 4-Min Music
- 0451 4-Min Music
- 0452 4-Min Music
- 0453 4-Min Music
- 0454 4-Min Music
- 0455 4-Min Music
- 0456 4-Min Music
- 0457 4-Min Music
- 0458 4-Min Music
- 0459 4-Min Music
- 0460 4-Min Music
- 0461 4-Min Music
- 0462 4-Min Music
- 0463 4-Min Music
- 0464 4-Min Music
- 0465 4-Min Music
- 0466 4-Min Music
- 0467 4-Min Music
- 0468 4-Min Music
- 0469 4-Min Music
- 0470 4-Min Music
- 0471 4-Min Music
- 0472 4-Min Music
- 0473 4-Min Music
- 0474 4-Min Music
- 0475 4-Min Music
- 0476 4-Min Music
- 0477 4-Min Music
- 0478 4-Min Music
- 0479 4-Min Music
- 0480 4-Min Music
- 0481 4-Min Music
- 0482 4-Min Music
- 0483 4-Min Music
- 0484 4-Min Music
- 0485 4-Min Music
- 0486 4-Min Music
- 0487 4-Min Music
- 0488 4-Min Music
- 0489 4-Min Music
- 0490 4-Min Music
- 0491 4-Min Music
- 0492 4-Min Music
- 0493 4-Min Music
- 0494 4-Min Music
- 0495 4-Min Music
- 0496 4-Min Music
- 0497 4-Min Music
- 0498 4-Min Music
- 0499 4-Min Music
- 0500 4-Min Music

### MUSIC UTILITIES

- 0501 Future Computer
- 0502 Future Computer
- 0503 Future Computer
- 0504 Future Computer
- 0505 Future Computer
- 0506 Future Computer
- 0507 Future Computer
- 0508 Future Computer
- 0509 Future Computer
- 0510 Future Computer
- 0511 Future Computer
- 0512 Future Computer
- 0513 Future Computer
- 0514 Future Computer
- 0515 Future Computer
- 0516 Future Computer
- 0517 Future Computer
- 0518 Future Computer
- 0519 Future Computer
- 0520 Future Computer
- 0521 Future Computer
- 0522 Future Computer
- 0523 Future Computer
- 0524 Future Computer
- 0525 Future Computer
- 0526 Future Computer
- 0527 Future Computer
- 0528 Future Computer
- 0529 Future Computer
- 0530 Future Computer
- 0531 Future Computer
- 0532 Future Computer
- 0533 Future Computer
- 0534 Future Computer
- 0535 Future Computer
- 0536 Future Computer
- 0537 Future Computer
- 0538 Future Computer
- 0539 Future Computer
- 0540 Future Computer
- 0541 Future Computer
- 0542 Future Computer
- 0543 Future Computer
- 0544 Future Computer
- 0545 Future Computer
- 0546 Future Computer
- 0547 Future Computer
- 0548 Future Computer
- 0549 Future Computer
- 0550 Future Computer
- 0551 Future Computer
- 0552 Future Computer
- 0553 Future Computer
- 0554 Future Computer
- 0555 Future Computer
- 0556 Future Computer
- 0557 Future Computer
- 0558 Future Computer
- 0559 Future Computer
- 0560 Future Computer
- 0561 Future Computer
- 0562 Future Computer
- 0563 Future Computer
- 0564 Future Computer
- 0565 Future Computer
- 0566 Future Computer
- 0567 Future Computer
- 0568 Future Computer
- 0569 Future Computer
- 0570 Future Computer
- 0571 Future Computer
- 0572 Future Computer
- 0573 Future Computer
- 0574 Future Computer
- 0575 Future Computer
- 0576 Future Computer
- 0577 Future Computer
- 0578 Future Computer
- 0579 Future Computer
- 0580 Future Computer
- 0581 Future Computer
- 0582 Future Computer
- 0583 Future Computer
- 0584 Future Computer
- 0585 Future Computer
- 0586 Future Computer
- 0587 Future Computer
- 0588 Future Computer
- 0589 Future Computer
- 0590 Future Computer
- 0591 Future Computer
- 0592 Future Computer
- 0593 Future Computer
- 0594 Future Computer
- 0595 Future Computer
- 0596 Future Computer
- 0597 Future Computer
- 0598 Future Computer
- 0599 Future Computer
- 0600 Future Computer

### GAMES


- 0701 Future Computer
- 0702 Future Computer
- 0703 Future Computer
- 0704 Future Computer
- 0705 Future Computer
- 0706 Future Computer
- 0707 Future Computer
- 0708 Future Computer
- 0709 Future Computer
- 0710 Future Computer
- 0711 Future Computer
- 0712 Future Computer
- 0713 Future Computer
- 0714 Future Computer
- 0715 Future Computer
- 0716 Future Computer
- 0717 Future Computer
- 0718 Future Computer
- 0719 Future Computer
- 0720 Future Computer
- 0721 Future Computer
- 0722 Future Computer
- 0723 Future Computer
- 0724 Future Computer
- 0725 Future Computer
- 0726 Future Computer
- 0727 Future Computer
- 0728 Future Computer
- 0729 Future Computer
- 0730 Future Computer
- 0731 Future Computer
- 0732 Future Computer
- 0733 Future Computer
- 0734 Future Computer
- 0735 Future Computer
- 0736 Future Computer
- 0737 Future Computer
- 0738 Future Computer
- 0739 Future Computer
- 0740 Future Computer
- 0741 Future Computer
- 0742 Future Computer
- 0743 Future Computer
- 0744 Future Computer
- 0745 Future Computer
- 0746 Future Computer
- 0747 Future Computer
- 0748 Future Computer
- 0749 Future Computer
- 0750 Future Computer
- 0751 Future Computer
- 0752 Future Computer
- 0753 Future Computer
- 0754 Future Computer
- 0755 Future Computer
- 0756 Future Computer
- 0757 Future Computer
- 0758 Future Computer
- 0759 Future Computer
- 0760 Future Computer
- 0761 Future Computer
- 0762 Future Computer
- 0763 Future Computer
- 0764 Future Computer
- 0765 Future Computer
- 0766 Future Computer
- 0767 Future Computer
- 0768 Future Computer
- 0769 Future Computer
- 0770 Future Computer
- 0771 Future Computer
- 0772 Future Computer
- 0773 Future Computer
- 0774 Future Computer
- 0775 Future Computer
- 0776 Future Computer
- 0777 Future Computer
- 0778 Future Computer
- 0779 Future Computer
- 0780 Future Computer
- 0781 Future Computer
- 0782 Future Computer
- 0783 Future Computer
- 0784 Future Computer
- 0785 Future Computer
- 0786 Future Computer
- 0787 Future Computer
- 0788 Future Computer
- 0789 Future Computer
- 0790 Future Computer
- 0791 Future Computer
- 0792 Future Computer
- 0793 Future Computer
- 0794 Future Computer
- 0795 Future Computer
- 0796 Future Computer
- 0797 Future Computer
- 0798 Future Computer
- 0799 Future Computer
- 0800 Future Computer

**FREE MEMBERSHIP \*REGULAR UPDATES TO MEMBERS OF NEW PD**

1 Disk 1-479 Printed Catalogue £1.50  
1 Bag (1.50) Arrows on Catalogue Disk  
Send for Catalogue

1-5 = £1.25  
6-10 = £1.10  
10-Over = £0.99  
+ P&P £0.60

## HOW TO ORDER

Choose from this selection or from our catalogue disk **ONLY 75p** and add 60p P&P. Bulk orders of blank disks add £2.50 P&P and send to 

**ENQUIRIES TEL: 091 419 2805**

Dept. 78  
**Horsley House AC.**  
Barmston, Dist. 10  
Washington,  
Tyne & Wear,  
England NE38 9HQ

**3.5" D5/DD BLANK DISKS**  
**32p EACH**  
If ordered with P.D. Members only.

## STORMBALL



TONIGHT ONLY  
STORMBALL SYRUP  
VS.  
THE MEXON

...take on Dan Trent and the rest of the Stormballers to make your way to the top of the league

It's just as well that the software industry doesn't follow the pessimists. Just think if they followed that "the end is nigh" bunch - there would be no such thing as future sport. And where would we be then? No Future Basketball, no Speedball, no Speedball II, and God forbid, no Cyberball and no Stormball.

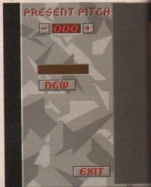
Just a few weeks ago Dan Trent was wishing that the world was at an end.

He was a major star on the Stormball circuit before he lost his hand in a freak accident while playing.

Thanks to the miracle of modern surgery he was fitted with a mechanical glove which enabled him to keep playing the sport he loved. And now he's back, hungry for success. You can take on Dan Trent and the rest of the Stormballers to make your way to the top of the



The Stormball flies overhead in the action begins in the stadium below



If the 40 pitches provided can't keep you happy, you can design your own

league. The basic rules of Stormball are a doddle. Two opponents move around on hover boards over their own half of the pitch. The ball is then thrown into your opponent's half, hopefully in such a way that your opponent can't intercept or catch it.

By throwing the ball over bonus tiles and score multipliers you rack up points. The player with the most points at the end of the four quarters is declared the winner.

This is a one or two-player action-packed game. In one-player mode you



Before you enter the stadium you can set the game up to suit yourself



This is more like it, the start of the third quarter and SIDD is getting smashed all over the pitch



SIDD is out of position so now is the chance to put one away for loadpoints



Thad against Larry, a bit one-sided this as Larry has never actually won a Stormball match



After practice join the league and take on the big boys to earn some big dosh



The ball comes flying towards you so try to intercept it and send it whizzing back

There's a big battle brewing...

# STORMBALL

Publisher: Millenium/US Gold Price: £24.99

can practise against a droid known as SIDD to hone your skills. When you have attained the appropriate skill level you are ready to enter the league.

To play the professionals you must first put up some money – the better your opponent the more money it costs to play him. If you win you get back your original stake plus the same again as a bonus. Of course, if you lose it's back to the training ground.

If you are really confident of a win you can always stake a bet outside the arena with Dodgy Dexter. He is the man responsible for getting Trent back into the Stormball arena after his injury but he is despised nonetheless, and the feeling must be mutual as the odds he gives on you winning are never that good.

Control of the man is fairly easy –

simple movement causes the board to move over the pitch, and to catch the ball position your man to one side as it passes.

Then throw it back and try to aim it so that your opponent can't reach it. This can be frustrating as he catches it with no difficulty and you race all around your half in a seemingly pointless pursuit.

If you become bored with the computer-generated pitches you can always design your own. Stormball really only comes into its own in two-player mode where the screen splits to allow both players the same view.

There's loads more pleasure in beating a mate than beating the computer opponents. But this is the same for all games in this genre.

Unfortunately, a less than brilliant

use of colours mars what could have been an excellent sports game. When it comes to the couch, buy Speedball 2 instead – it's infinitely more playable and more fun than this. Stormball is a real disappointment, but Millenium will bounce back.

Thad Beaumont



## Sound

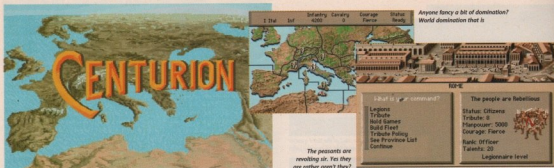
Nothing major here. The few bits of speech are good, if not very varied. There is no music during the match and the spot effects are chirpy but again, nothing special.

## Graphics

Unimaginative use of colour – I'm sure there's more than just brown in an Amiga's palette. There are some very nice intro screens but it's the game graphics proper that should be well done. The movement is smooth enough but there isn't much detail to the characters.

## Gameplay

It's awkward at first to intercept and catch the ball – it's really frustrating to miss it only to see it go whizzing by, bounce off your tiles and straight back to your opponent. There just isn't enough here to hold your attention for very long.



**A**ll I can say about the Romans is that they must have had good night vision. Well they say that Rome wasn't built in a day! But enough of the bad jokes.

As you probably already know, the Romans' idea of a good time was either to organise gladiator battles that made even Millwall football fans look like wimps, or to race around in chariots that would put boy racers to shame. And if that failed to amuse, they would go and invade some poor country for a bit of fun.

In Centurion it's up to you to do just that. You begin as a lowly officer, the lowest commanding rank in the Roman army. This lack of status is not for you – you have to move up through the ranks until you attain the respect of the masses in the role of caesar.

There are several ways to gain favour and you will have to use a combination of them to advance in rank. The most obvious is by adding other provinces to the Roman Empire.

There are two ways to do this – you either negotiate a treaty or you go in and kick the butt of the defending army. Of course, with the latter option you run the risk of having your own butt kicked in the process.

Strengthening any peace treaties

you have made is also a good way to gain popularity with the hierarchy. A slightly more action-packed way to gain favour is to organise chariot races or gladiator fights. This method never fails to please an angry population and make you a few talents in the process.

The main screen of the game shows a map from which you can move your forces into neighbouring countries, but be prepared to be met at the border by some pretty angry natives. You have the choice of behaving aggressively or politely towards them in your attempt to add their lands to your own.

If all else fails you move to the battlefield where the two opposing forces line up to fight.

You can adopt various strategies in battle which will affect the eventual outcome – and whether your army is decimated or not.

The arcade-like parts of the game are the races and the gladiator battles. The races feature a two-part screen, the top is a map showing your position on the track and the position of your opponents. The bottom shows your chariot as it hurtles around the track – just watch out for the corners.

In the gladiator battles you train up a gladiator and take him to battle with an opponent. The idea is to make the fight as bloody as possible to please the crowd.

Centurion is a fine

Anyone fancy a bit of domination?  
World domination that is

The peasants are revolting sir. Yes they are rather aren't they?

[illegible]

- Legions
- Tribute
- Hold Games
- Build Fleet
- Tribute Policy
- See Province List
- Continue

### The people are Rebellious

Status: Citizens  
Tribute: 8  
Manpower: 5000  
Courage: Fierce  
Rank: Officer  
Talents: 20

Dave Luckhurst

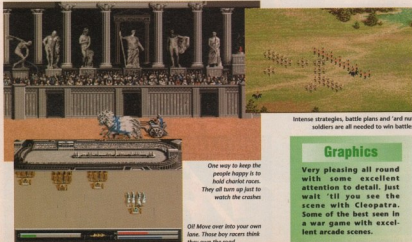
## FINAL JUDGEMENT

80

## Rome wasn't built in a day

# CENTURION

**Publisher:** Electronic Arts    **Price:** £25.99



Really good tunes and effects - quite surprising for a game of this ilk. The battle effects are especially tasty but it is generally very impressive throughout.

## Gameplay

The intense strategy is broken up by the arcade scenes. It's very easy to get into because it has an easy control system but perseverance will be needed to get anywhere near the rank of caesar. This could become one of the classics of the genre.

## Graphics

Very pleasing all round with some excellent attention to detail. Just wait 'til you see the scene with Cleopatra. Some of the best seen in a war game with excellent arcade scenes.

One way to keep the people happy is to hold chariot races. They all turn up just to watch the crashes.

Oil Move over into your own lane. Those boy racers think they own the road!

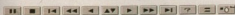


# If your database looks like this, you're ready to face the future.

Given the chance to gaze at the future of database computing, what would you see?

Graphical applications that are intuitive and yet incredibly powerful, supporting sound samples and even pictures.

Applications like Superbase 4 Amiga.



Unique features like the VCR panel mean browsing and reporting on data have never been simpler.

Superbase's WYSIWYG Form Designer lets you draw and design forms that are easy to understand and use.

And, with its own comprehensive Database Management Language, you can develop professional applications.

You can share data with users of IBM-compatible PCs, while developers can make sophisticated database solutions available on both Amiga and Microsoft Windows platforms.



All trademarks acknowledged. Screen shot taken on an IBM PC.

Superbase 4 Amiga also supports import/export of dBase, Lotus 1-2-3 and Microsoft Excel files.

So, for your future's sake, clip the coupon, send us your business card or call us on **081 330 7166** to find out more about Superbase 4 Amiga. After all, the benefits are staring you in the face.



Denote the relational links between the files referenced in your form.

## SUPERBASE® PROFESSIONAL 4

I currently own a copy of:

- ☐ Superbase Professional    ☐ Superbase Personal 2  
☐ Superbase Personal    ☐ Neither

Name \_\_\_\_\_ Job Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Postcode \_\_\_\_\_ Tel \_\_\_\_\_

Precision Software Ltd, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ.  
Tel: 081 330 7166 Fax: 081 330 2089



Praying for luck, I flipped

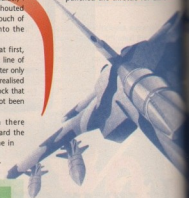
## Graphics

Not as good as some flight sims, but screen update is smooth and quite fast, which is a nice change.

### Sound

Good enough for the purposes to which it is put, which are necessarily limited in a flight sim. The explosions are satisfyingly loud and violent.

I flattened out of the turn with difficulty, hit the deck at 100 feet, and punched the throttle for all



## Gameplay

Complex and involved in the long run, but with very good dogfights to keep the excitement levels high. ProFlight is pitched at just the right level for flight combat fans.

[illegible]

```
H      MAP COORDINATES  
       NITROGEN BOYS HOOS  
       WAY POINT HEIGHT  
       TARGET INFORMATION  
       MISSING SITE .....  
       PRIMARY TARGET  
  
P      PRIMARY TARGET SET  
G      GOTO WAY POINT FO  
       TARGETS DEPROVED  
       000% OF PRIMARY  
       001% OF CRAFT
```

Mission planning is where all the tactical decisions are made.

was worth, reaching 800 knots in no time. Then I noticed I had another problem – an airborne one.

The Mig was above me and on my seven o'clock, so I pulled up as sharply as the controls would allow, hit the air-brake to lose speed, and went into a yo-yo roll.

The manoeuvre worked! Unfortunately for my opponent, he obviously had slower reactions than I, and before he knew I was now on his six, I'd sent a Sidewinder up his tailpipe. Scratch one bird!

All that was left for me to do was return to the correct flight path, finish my precision bombing attack, and nurse my damaged ship back to base. As I said, all in a day's work for a Tornado pilot.

HiSoft's first entertainment release may be a serious flight simulation, but as it revolves around one of the world's fastest warplanes, it also comes with a comprehensive combat option, allowing it to challenge F16 Combat Pilot and Falcon for the crown of the flight combat simulations.

ProFlight starts off on the right foot by concentrating on the Tornado which, as the fastest aircraft in the world at low level, is ideal for a flight combat sim. Fast flying and a healthy wedge of combat options carry the pro-

gram along so well that it's possible to forget ProFlight is designed to be more simulation than stimulation.

From the word go the program was developed to be as realistic as possible, and was built around complex flight algorithms to match as closely as possible the feeling of flying the real thing.

I was relieved, therefore, to discover that my version of ProFlight supports analogue joysticks. The first version sold did not contain this feature, but owners of these copies can receive a free update from HiSoft if they register as a user before July 1st, so send in those cards now, folks!

Without the analogue option, con-

trol is centered around the mouse, which as a proportional device goes some way to providing realistic flight controls.

There is a digital joystick option for those with a perverse need to cripple the aircraft before it gets off the deck, but I wouldn't recommend it.

With an analogue stick, the armchair flyer has the best possible simulation of real aircraft controls, so the omission would have been a serious one, especially considering the realism angle taken by HiSoft. Please take note, software companies!

With analogue joysticks such as the Voltmace Delta 3A selling for only £17,

there's no excuse for not providing for them in flight sims. Now I've got that off my chest, I have to admit that ProFlight flies like a dream, and both mouse and analogue joystick control works very well once you get used to it.

Digital joystick aids might need some time to adjust, but with practice, both offer a much more sensitive and manageable form of control.

Once on the runway the pilot can configure his or her aircraft to make the level of realism, and hence flight difficulty, as high or low as required using the extensive autopilot option.

Flaps and stabilisers can be taken care of by the computer, as can a host of other tricky flight controls, to make life as easy as possible for the harassed pilot lining up for the final bomb run. It's even possible to have the autopilot take the aircraft all the way to the target via several waypoints, though it won't drop the bombs for you.

For beginners there's a crash inhibitor, so you can bounce the plane off the ground as hard as you please while you're still got your L plates. All in all, the extent to which the program can adjust to the individual pilot's needs is very gratifying.

Combat, rather than being a throw-away concession for adrenalin freaks, is an integral part of the program, and includes a detailed mission planner, ground and air targets, and a campaign option.

The map area is very large and conveys the impression of space often missing from other flight sims. There's nothing like a "now leaving map area" message to burst the realism bubble.

Dogfights are very enjoyable, with enemy fighters acting intelligently and using tactics of their own. Locking on and firing a missile is not the end of a fight, as the Mig will often decoy your missile with chaff or flares. So towards the end of long missions I usually found myself having to resort to cannons, all six of my missiles having been used.

Bomb runs are also rather hairy, as many of the targets are protected by missile sites. This forces you to plan the final approach to a target carefully, so that exposure to SAMs is kept to the minimum. In some sims it's possible just to fly straight to the target and back again, but in ProFlight, mission planning means just that.

ProFlight's long term appeal is guaranteed if you're a sim buff, and it will be a big hit for people who enjoy F16 Combat Pilot. Those who prefer the more simplistic flight combat games might give up at the prospect of having to master aircraft controls, or fly within the realistic limits of pilot and airframe.

Any serious gamer who perseveres with ProFlight, however, will be rewarded by a simulator that blends flight realism and excellent combat in a way that few can match.

Sandra Foley



Canon-firing dogfights are great fun in ProFlight

HiSoft launch a serious contender

# PROFLIGHT

Publisher: HiSoft Price: £39.99



The automatic throttle makes landing relatively easy



**Y**our beloved Uncle Don C has decided to quit the family business before someone makes him quit. The only person who could possibly take over is you.

It's up to you to become the crime king of the city and the easiest way of doing this is by becoming mayor. Don't laugh, someone has to get elected, so it might as well be you. If any of the other contenders get in your way you can always deal with them in true Mafia fashion – you know, concrete boots or something like that.

The basics are simple. You choose whether you want to lead an Italian or Chinese crime family consisting of three characters, and you take control of one of these as he or she walks around the town.

Now this ain't no ordinary town and lying around the streets you will find useful everyday objects like safe codes, door keys and ammo. These are used to gain access to buildings, and to the people and objects inside. The objects can then be used for the gentler art of blackmail – now that's one way to win elections!

There are 20 files dotted around which could reveal some juicy gossip on any of the town's leading figures. Store these and use them later on.

Avoiding the police is also a good idea, especially if you're a bit trigger-happy, but a police locator beacon will soon sort that problem out. When you have a bit of skill on the gun and have found some dynamite and a detonator, you could always try to rob a bank to increase your finances and your social standing.

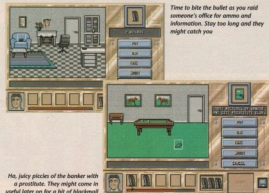
Crime Does Not Pay players will spend hours at first just wandering around trying to work out what you are supposed to do.

The control method, although somewhat unusual, is quite easy to get used to and there are loads of different places to explore but they all look a bit "samey". It's not a bad game but then it's no Eye of the Beholder either.

Thad Beaumont



Now meet the only people who can get close. The Chinese are hard, dirty and apparently know something about the use of tongs. But why use kitchen utensils?



Ha, juicy pieces of the banker with a prostitute. They might come in useful later on for a bit of blackmail

Ronnie Biggs says...

# CRIME DOES NOT PAY

Publisher: Titus Price: £25.99

FINAL JUDGEMENT  
**6/5**

## Graphics

Big bold characters look fun but aren't terribly well animated. In fact, if it wasn't for the way the different characters pull their guns, it would be lousy. The scenery is very well done but the interior scenes start to look the same after a while.

## Sound

Crime Does Not Pay is let down badly by the sound. Terrible music greets you at the start and the effects seem to be limited to a pathetic gunshot and a few others. If ever a game could be played with the volume down, this is it.

## Gameplay

Initially it's very compelling as there is loads to explore, but after a while it becomes boring and repetitive. Although it won't be finished at the first attempt there isn't enough there to keep you trying. Spend your hard-earned dosh on something else this month.



**FREE COLOUR KIT  
OFFER ENDS  
JUNE 30th  
1991**

# CITIZEN

# PRINTERS

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), **FREE OF CHARGE!**

**FREE DELIVERY**

Next Day - Anywhere in the UK mainland

**FREE STARTER KIT**

Worth £29.95 - With every Citizen printer from Silica

**FREE COLOUR KIT**

Worth £39.95 - With Swift 9 and Swift 24 printers

**2 YEAR  
WARRANTY**

Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica

**WINDOWS 3.0**

Free Windows 3.0 driver - in the Silica Starter Kit

**FREE HELPLINE**

Technical support helpline open during office hours

**MADE IN THE UK**

Citizen printers are manufactured to high standards

**144 CPS DRAFT 9 PIN**



## CITIZEN 120D+

The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- 9-pin Printhead
- Print Speed 144cps Draft
- 30cps NLD
- Epson & IBM Graphics Emulation
- Pull Tractor & Bottom Feed
- Superior Graphics - 240 x 216dpi
- FREE Starter Kit

RRP £23.83  
STARTER KIT £29.95  
TOTAL RRP £53.78  
SAVING £12.20  
SILICA PRICE £41.58  
+VAT = £50.29

**144 CPS DRAFT 24 PIN**



## CITIZEN 124D

The second winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- Print Speed 144cps Draft
- 24-pin Impact Printer
- 2 KLG Fonts (48cps)
- 2K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- Superior Graphics - 360 x 360dpi
- FREE Starter Kit

RRP £29.56  
STARTER KIT £29.95  
TOTAL RRP £59.51  
SAVING £12.20  
SILICA PRICE £47.33  
+VAT = £57.59

**192 CPS DRAFT 9 PIN**



## SWIFT 9 - COLOUR!

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturers 24-pin models.

- 24-pin Impact Printer
- Print Speed 192cps Draft
- 2 KLG Fonts (48cps)
- 2K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £29.56  
STARTER KIT £29.95  
COLOUR KIT £44.85  
TOTAL RRP £104.36  
SAVING £12.20  
SILICA PRICE £92.16  
+VAT = £110.60

**192 CPS DRAFT 24 PIN**



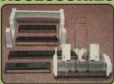
## SWIFT 24 - COLOUR!

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1989. Its rapid print speed, black and colour outputs, make it a natural choice.

- 24-pin Impact Printer
- Print Speed 192cps Draft
- 2 KLG Fonts (48cps)
- 2K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £42.86  
STARTER KIT £29.95  
COLOUR KIT £44.85  
TOTAL RRP £117.66  
SAVING £12.20  
SILICA PRICE £105.46  
+VAT = £126.55

## PRINTER ACCESSORIES



### SHEET FEEDERS

PFA 1200 1200	£71.20
PFA 1215 1240swt 9024	£88.70
PFA 1220 1240swt 9024	£42.80
<b>SERIAL INTERFACES</b>	
PFA 1089 1200+	£56.45
PFA 1200 Swift 9124D	£32.25
PFA 1709 Swift 24	£26.30

### PRINTER STAND

PFA 1242 1240swt 9024	£24.80
RS 3520 1280swt 9 Black	£4.11
RS 3524 1280swt 9 Black	£4.70
RS 3535 Swift 924 Color	£13.63

### COLOUR KITS

PFA 1230 Swift 924	£26.85
--------------------	--------

All prices include VAT and Free delivery

## FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately. **FREE OF CHARGE!**

- 315" Dual Format Disk with Amiga & Z8 Printer Drivers
  - 315" Disk with Drivers for Microsoft Windows 3
  - 2 Metre Parallel Printer Cable
  - 200 Sheets of High Quality Continuous Paper
  - 200 Continuous Address Labels on Tractor Feed
  - 5 Continuous Envelopes on Tractor Feed
- If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref. KIT 5000) for the special price of £24.95 - £5 off RRP!

**NORMAL RRP £29.95**

## SILICA SYSTEMS OFFERS YOU

- **FREE OVERNIGHT CREDIT DELIVERY:** On all hardware orders shipped in the UK
- **TECHNICAL SUPPORT HELPLINE:** Team of PC technical experts at your service
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales
- **24hr TURN-ROVER (with 40 staff):** Solid and reliable with maintained growth
- **BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches
- **THE FULL STOCK RANGE:** All of our PC requirements from one supplier
- **FREE CATALOGUES:** Will be mailed to you with offers and specialist/peripheral details
- **PAYMENT:** By cash, cheque and all major credit cards

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you receive the best service. Silica Systems is one of the UK's leading independent computer dealers and provides a quality service to users of home, in education and in business throughout the nation. Silica has been established for over 12 years, and has an annual turnover of £10 million. With our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

**SILICA  
SYSTEMS**



**MAIL ORDER:**  
Order Lines: Mon-Sat 9.00am-5.00pm, Sun 10.00am-4.00pm  
1-4 The Mews, Hatherly Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111 Fax: 081-309 5000  
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-507 4990 Fax: 071-507 4990  
LONDON SHOP: 54-56 Tottenham Court Road, London, W1P 0BA Tel: 071-507 4990 Fax: 071-507 4990  
SIDCUP SHOP: 1-4 The Mews, Hatherly Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111 Fax: 081-309 5000

## PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Ms/Ms: \_\_\_\_\_ Initials: \_\_\_\_\_ Surname: \_\_\_\_\_  
Address: \_\_\_\_\_  
Tel (Home): \_\_\_\_\_ Tel (Work): \_\_\_\_\_  
Company Name (if applicable): \_\_\_\_\_  
Which computer, if any, do you own? \_\_\_\_\_  
ECSC - Advertiser codes and specifications may change. Please retain this coupon for the latest information.

**M**orio leapt the final divide as the first disc slammed into the wall. As he landed, instinct was all that stopped the second disc from hitting home. The third he never saw, never had the chance to block.

It hit hard and burned hot and every breath of air was blown from his aching body. Across the court cruel laughter echoed from his opponent.

Then in a split second of silence a single bead of sweat fell from his tortured face and dripped slowly down on to the last remaining tile. He knew this had to be the one, and with a final desperate lunge his only chance hurtled across the divide.

The smug expression of his opponent turned instantly to one of shock as she frantically tried to stop the unstoppable. This final desperate scramble was no more than a vain gesture and as the wall smashed into a thousand shards of exploding crystal her shock turned to horror as infinity appeared beneath her feet.

A scream rang out as she plummeted into the abyss... this is Disc.

When describing an essential simple game it's difficult to convey the emotions, excitement and desperate struggles it contains. Hopefully this little monologue will give you a taste of what lurks within perhaps one of the best action strategy games of the year.

### Combat options

After loading and choosing the number of players the next task is to select the character of your choice. Initially all eight available players start at the rank of novice, this of course can change if you successfully challenge your peers in the arena.

There doesn't seem to be any difference between individuals, so it's purely a case of which particular persona you want to take on. As all of the eight are men, this was a rather tricky decision for you truly.

Once your choice is made it's time



The challenger savours the taste of victory

### Killer frisbees in the 21st Century

# DISC

Distributor: Infogrammes Price: £25.99

to pick a particular challenge. This can vary between training, challenge, tournament or championship.

The training option is an essential for the newcomer as throwing, aiming and blocking need to be second nature if you want to make any progress through the rankings.

Once your training is complete it's time to take on the opposition. In the two-player game the choice is limited

solely to your opponent, but the singles championship mode is probably best for the beginner, as it pits you initially against opponents of similar skill.

As you progress your rank will improve, but unfortunately so does that of your opponents. The tournament option is perhaps the fastest way to glory, but be warned, if the gods are against you, your first match could have you facing a champion or perhaps



The ultimate challenge, a lone human takes on the Great Guide

even a great guide. As with the championship game, your ranking improves as you progress, the only problem is you might not live long enough to enjoy your new-found fame.

The last option is a straight challenge so, for example, if you've just lost a close contest you could set the record straight without the hassle of facing a whole bunch of bad guys before you get to your man.

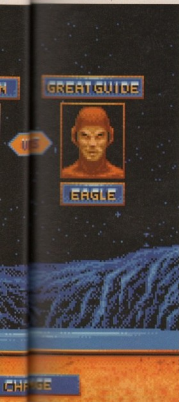
Challenging isn't limited to players of similar skill, so if you feel lucky you



Leaping a divide while dodging the discs in a life and death struggle

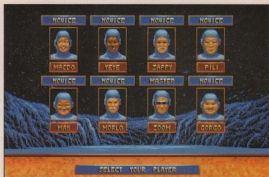


Our hero defends himself against an incoming missile with ease



could go straight to the top and by beating a high ranking player instantly leapfrog the rest of the field.

The gameplay is the real strength of Disc, being a combination of action



The choice is yours, pick your hero and take on the world

and strategy. This combination has already been proved a winner this year by the massively popular Lemmings.

This may seem a rather strange comparison, but nevertheless there's definitely a similarity between the two. Disc is certainly fast and furious, but if logical strategy isn't applied along with some fast reactions your challenge will definitely be a short one.

The game is simple and not a million miles away from the arcade classic Tron. The aim is simply to survive, and to do it you must either deprive your opponent of all of his or her body points or alternatively send them screaming into the abyss by destroying the tiles on which they stand and which make up their end of the court.

To do the damage you hurl discs across the void. If your opponent is struck a body point is lost. However, if the disc is defended you become the one under attack and as the weapon ricochets back across the court it's your

turn to defend. If a disc is thrown which neither strikes the player nor is defended it will inevitably hit your opponent's wall and this is where the strange shapes and symbols come into play.

The number of sides on each symbol tells how many hits are left on its particular panel. When a circle is struck the tile disappears and its counterpart on the floor of the court vanishes. There is a slight pause beforehand, but if you're too slow it's game over...

Some games have as many as four discs in play. As you can imagine, things can become just a little confusing as they bounce around the walls slamming into tiles and players alike.

If you can't keep a track on which have been thrown, rebounded or defended finding out can be a painful experience.

The only way to defend yourself and your precious platform is to deflect your aggressor's incoming arsenal with a defensive disc, the only use of which is

to protect you and your wall. Once defended, a disc is on the attack and if it returns undefended it can be caught and launched at the target of your choice.

Various bonus discs become available intermittently thanks to special tiles caught at random. If hit they endow a specific ability such as speed, added power and so on to your discs for a limited period.

## Two player perfection

Disc is a rare beast, not only is it excellent as a solo challenge but it becomes even more impressive as a two-player contest. The human v human option is one of Disc's real strengths, putting it easily on par with such two-player classics as Kick Off.

The two-player game differs from the rest as it's played over several legs, with victory only being secured by two wins in a row.

As each player takes turns at either end of the court as opposed to the single game which always places the human player closest to you.

Against a machine it's good, against a screaming, yelling and often swearing human it's even better.

Stephanie Ross

## Sound

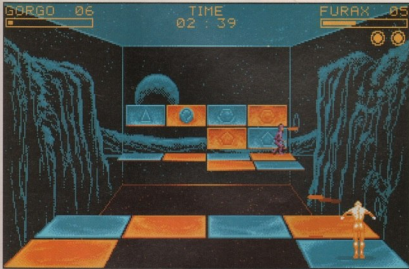
Sound is not always a strong point in action strategy but Disc is an exception. The samples are, in general, superb and add a good deal to the atmosphere.

## Gameplay

Gameplay is very impressive and as a two-player struggle it's nothing short of faultless. If you want to take on a friend in a fight to the death this is a must.

## Graphics

The animation and range of character movement are very good and when these are combined with the well designed and drawn court the overall effect is excellent.



A fraction too slow and the disc hits home



**B**eing a courier may not seem like a very exciting job. About the most fun you will get is delivering those suspiciously shaped "plain brown wrappings" to old men in trench coats.

But in the 21st Century all this has changed. Standard couriers just couldn't make the grade any more, their methods of delivery weren't reliable. One man rose above the rest for security and speed of service. No one knows his real name, but if the various governments can find him, they can hire Hydra.

The roads, airways and waterways are now ruled by terrorists. Nowhere is safe because they plunder anyone who dares to travel those routes. It's up to Hydra to run the gauntlet of terrorists and deliver sensitive and top secret packages to their destinations.

The game puts you in the role of the great courier himself as he tries to deliver these packages. At the beginning you pick up cargo in your jet boat and then you're off.

The terrorists know you're coming and throw all they have at you. Of course, you're not unprepared yourself and your boat is equipped with the very latest state-of-the-art firepower, so let those lowlife terrorists have it.

They will attack either singularly or in groups but these attack patterns are predictable so there's no real problem. When they're shot some of these craft very conveniently drop either fuel, boosts or money icons.

As your own fuel supply is very limited you will need to pick up as many of these as you can to finish the mission. The boosts can be used to make your boat leap out of the water for a short



That's a nuclear device you have in the back

time and catch the money balloons that sometimes appear in the sky.

There are nine missions with a total of 31 levels to go through to deliver cargo which varies from the Crown Jewels to a top-secret nuclear device. Cor, aren't these governments trusting! At the end of each stage there is a shop where, if you have enough money, you can buy extra weaponry for your boat.

Hydra should have been an enjoyable 3D shoot-'em-up arcade conversion, but unfortunately it isn't. The action is quite slow and the gameplay is very repetitive and boring.

This seems to be the norm lately with Domark's arcade coin-op conversions, this and Skull And Crossbones being the latest. Give this one a miss.

Thad Beaumont

*If the Post Office can't do it, call in...*

# HYDRA

Publisher: Domark Price: £24.99

Look out for these power-ups lying around the water - you won't finish the course without them

## Graphics

The 3D visuals are unremarkable and about the only thing I can say in the game's favour is that the swirling effect on the water is very nice. Otherwise it's nothing special.

## Sound

Having already seen the coin-op I was expecting some half decent sound. Again I was badly disappointed - half-hearted tunes and effects ruin a potentially good licence.

## Gameplay

Hydra suffers badly from repetition. It gets very boring after the first couple of games. There's no addictive quality to keep you coming back for more. With slow-moving graphics it just doesn't take off.



Nine levels in all, solid arcade-blasting action. Well, I did about the last bit, it's about as exciting as watching paint dry



Not bad for a special weapon - it may be a bit extreme to let off a nuke but now you can collect those floating power-ups

Suffering from tunnel vision as you come to the end of a level. Just sit tight and wait for the next one

FINAL JUDGEMENT

6/10

**SAME  
DAY  
DESPATCH**

# AT LAST!!

**A PREMIER TRADE SUPPLIER COMES DIRECT TO YOU - THE PUBLIC!**

**ALL  
PRICES  
INC  
V.A.T.**

## 3.5" DISKS

Large or small users - we have the prices for you!

<b>SONY D5 D/D 135 tp</b>		
50's	42p each	£21.00
100's	41p each	£41.00
400's	36p each	£156.00
800's	36p each	£288.00
1200's	35p each	£420.00
<b>MITSUBISHI D5D 135TPH</b>		
50's	37p each	£18.50
100's	36p each	£36.00
400's	33p each	£132.00
800's	30p each	£240.00
1200's	29p each	£348.00

All disks are PIN numbered and carry a 100% quality control/no quibble guarantee. Disk labels supplied

**3.5"**  
**DISKS**  
**FROM 29p**  
**inc VAT**

## ACCESSORIES

Philips CM8833/1084 Dust Cover	£4.95
Printer Stands (80 col)	£5.50
Printer Stand with tray (80 col, 132 col)	16.95
Tit 'n' turn monitor stands for Amiga	£9.95
4 Player Adaptor	£4.95
Data Switches (5 way serial or parallel)	£15.95
Mouse/Joystick extension	£3.95
A4 Desk Top Holder	£7.90
Mousemats (boxed firm) red, blue, grey	£4.95
Mousemats 5mm packaged	£1.95
Mousebrackets	£1.95
Amiga primer leads	£4.95
3.5" cleaning kits	£1.95
Amiga Dust Covers	£2.95
Star LC10241 0/24200 Dust Cover	£4.95
Roll of 1000 3.5" labels	£7.50
1000 Tractor feed labels	£9.95
Mouse/Joystick Switch - Manual	£9.95
Mouse/Joystick Switch - Auto	£19.95

## RAM EXPANSIONS

1/2 meg upgrade (without clock)	£27.95
1/2 meg upgrade (with clock)	£32.50
1/2 meg upgrade (with clock)	£39.95

Features include: ON/OFF memory switch, auto-recharge battery backed clock.

## AMIGAS

Screen Gems (1 Meg Pack)	£349.94
Basic Amiga including modulator & mouse	£329.99

## POWER SUPPLY

Fully compatible replacement  
Power Supply for Amiga 500  
**ONLY £38.95**

## JOYSTICKS

Quickshot Apache	£5.99
Quickshot III Turbo New Micro Switch	£3.95
Quickshot 128T Maverick	£12.99
Quickshot 128T Maverick New Micro Switch	£12.99
Quickshot III Turbo	£7.95
Quickshot III Turbo	£8.95
Competition Pro Colour	£9.95
Quickshot Topstar	£23.95
Cheatah 125+	£3.95
Quickshot 127 Infra Red Remote	£29.99
Quickshot Fightrip	£7.99

## STORAGE BOXES

3.5" (10 capacity box) "Slimpak" (New see through "Sлимпak")	£39.95 each
3.5" (10 capacity box) see through "Vision 10"	£1.00 each
3.5" (40 capacity box) lockable disk storage box	£3.50 each
3.5" (50 capacity box) lockable disk storage box	£3.95 each
3.5" (80 capacity box) lockable disk storage box	£4.30 each
3.5" (100 capacity box) lockable disk storage box	£4.95 each
3.5" (120 capacity box) lockable disk storage box	£5.50 each
3.5" "POSSO" stackable box (holds 150)	£15.95
3.5" "BAND" lockable/stackable (holds 80)	£7.95

All disk boxes are anti-static, Amiga beige, contain keys, dividers and rubber feet (with the exception of 10's)

## PRINTER RIBBONS

	QTY1	QTY5	QTY10
Star LC24-10 Mono	£3.90	£3.70	£3.20
Amstrad DMP 2000/3000	£3.90	£2.60	£2.30
Amstrad DMP 4000	£3.90	£3.60	£3.20
Amstrad PCW £250/5512	£3.90	£3.20	£3.00
Amstrad PCW 9512	£2.90	£2.60	£2.30
Brother HR15/20/25/35	£2.50	£2.30	£2.15
Brother M1009/1109	£3.90	£3.60	£3.20
Citizen 120D/LSP10	£2.90	£2.70	£2.40
Epson MX/FX80/85/800	£2.90	£2.70	£2.40
Epson FX100/105/1000	£3.60	£3.40	£3.10
Epson LX80/86	£2.90	£2.70	£2.30
Panasonic KXP 100B/11B2	£2.90	£2.70	£2.30
Star LC10	£3.90	£3.70	£2.40
Star LC10 4 colour	£3.90	£3.30	£3.00
Star LC24-200 Mono	£4.90	£4.70	£4.50

PLEASE NOTE THAT THIS IS JUST A SMALL SELECTION OF OUR LARGE RANGE. TELEPHONE 0530 813591 FOR PRICING ON OTHER RIBBONS NOT LISTED

## AMIGA

### OMC AMIGA STARTER PACK

COMPRISES:  
A500 Screen Gems  
1/2 meg additional RAM upgrade  
3.5" external disk drive  
10 3.5" D5/D 135 tp diskettes  
1 (40 cap) lockable storage box  
1 mousemat  
1 mouse  
1 mouse bracket  
1 joystick  
1 Amiga disc cover  
PLUS the usual 4 great software titles  
PHONE FOR DETAILS ON CLASS OF 90'S PACK

**NO NEED TO  
SHOP AROUND**  
R.R.P. £679

**OMC All inclusive  
price of  
£465.00 inc. VAT**

**A saving of £214.00**

## PRINTER SUPPLIES

Star LC10 Mono	£158.95
Star LC200 Colour Printer	£229.95
Star LC24 200 Colour Printer	£299.95
Listing Paper	
11" x 9.5" S.P. Plain 70 GSM Micro Perf.	
Pack of 100	£2.50
Pack of 250	£3.95
Pack of 500	£5.95
Pack of 1000	£8.95
Pack of 2000	£16.95

## DISK DRIVES

3.5" External disk drive for Amiga,  
Stimline design colour co-ordinated  
throughport connector. Double sided.  
1 year guarantee  
**ONLY £58.00**

## MICE

Amiga mouse, two button fully compatible as replacement	£17.95
Nakasha Mouse inc 2 Year Warranty, Mouse Mat and Mouse Bracket	£29.95
(Operation Stealth with £24.99)	FREE
Genisac GS4000 Scanner	£159.95

## SOUNDBLASTER

ZY-FI  
Twin stereo amplified speaker system for the Amiga/Atari STE/Archimedes or Sega Mega Drive. Built in power supply. Easy fitting instructions included.

**ONLY £39.95 inc VAT**

## TO ORDER

CHEQUES AND P.O.'S PAYABLE TO OMC LTD  
AND SEND TO ADDRESS BELOW  
CREDIT CARDS SIMPLY TELEPHONE YOUR  
ORDER ON 0530 813591 (8 LINES)  
FAX 0530 813595 FOR OUR IMMEDIATE  
ATTENTION

**O.M.C.  
Ltd**

V25A

**THE ORIGINAL MEDIA COMPANY LTD**

**DEPT AC, MEDIA HOUSE, UNIT 14, ASHBY ROAD,  
COALVILLE, LEICS LE6 2LA**

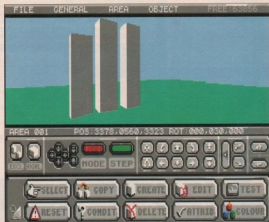
**TEL: 0530 813591 (8 lines) FAX: 0530 813595 Mobile No: 0860 922436**

Trade a/c's welcome. All prices include VAT at 17.5%. Corporate, education orders welcome. Personal callers welcome. POSTAGE: £3.95 CARRIAGE: £9.95

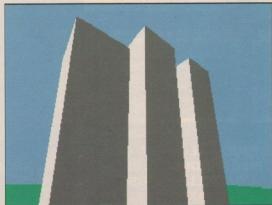
**O.M.C.  
Ltd**

## 3D CONSTRUCTION

## Phil South opens up a new construction kit and forms an opinion



Just a trio of blocks, but these babies are many storeys high. Whole cityscapes can be built with the 3D Kit, then moved around in and explored



You can design a control screen – or what the 3D Kit calls a “border” – and incorporate it within a game. The control spots on the screen you use to move around the world are mapped to the areas covering the controls drawn onscreen

**T**he 3D Construction Kit is a new interactive version of the famous Freespace 3D modelling system from Domark/Incentive. Freespace was Incentive's contribution to the 3D game era, with famous games like Driller and Castle Master. Now Domark/Incentive have put Freespace II at your disposal so you can create 3D games for yourself.

But the 3D Construction Kit is being sold as more a virtual reality system than merely a game creator. And to be fair it is more than this. The system allows you to make not only games but other more useful things – which is not to say that games aren't worthwhile, just that there are other uses for a 3D system.

Virtual reality has become something of a buzzword over the past year, and it has long been clear that for any product to be hot in '91 it would have to feature this concept. So the 3D Construction Kit, or 3D Kit as it is known, is heavily flagged as a virtual reality system.

This is stretching the truth a bit, as there is no provision yet for a pair of 3D

goggles to make the view of your world truly “virtual”. But having said that, it's a very fast, flexible and highly usable 3D system.

### 3D kit in use

Creating your own shapes and putting them together is simplicity itself, and the process is made vastly easier by virtue of the fact that shapes cannot pass through each other at any point. So fitting the pieces of an object together is easy – you just slide the bits together until they stop.

Object creation is done with primitives, like cubes, pyramids and rectangles. A group of buttons on the main screen is used to select the most frequently used options: Select, Copy, Create, Edit, Test, Reset, Condition, Delete, Attribute and Colour.

Select lets you select an object you've created, either by choosing it from the menu or clicking on an icon.

Reset clears everything, leaving you with a blank sheet of paper, as it were. Create allows you to choose from a variety of primitives, and the Edit function lets you alter the primitive objects and move them around.

Colour lets you select the colour of all the faces of an object. Each colour you select from the menu can be attached to a face, so you have to choose the right shades to complement the shading on the object or it looks funny. There's no light source shading here – you have to do it all yourself.

Condition and Attribute are game-related functions, and using these you can set what happens when you manipulate an object in a game.

Copy is a powerful feature. If you've created a perfect shape, you can dupe it for moving around. Walls, for example, are easy to create but hard to repeat, so copying them is the only way to get them all the same.

All the tools are easy to use and very little space has been wasted on the buttons. There are more complex choices on the menu bar, but most of the frequently used features of the program are on these buttons, meaning that they are always to hand.

### Uses for the system

One of the first uses for the 3D Kit is the creation of environments which you can walk around. This is the virtual reality side of the system and enables you to make rooms and buildings. As with the games you create with the program, you can create a stand-alone version of your objects for other people to walk around.

3D games are also easy to do, although you'll need to have a scenario worked out before you can create a game. It doesn't pay to try to bolt a game together from scratch with the program in front of you.

Different rooms can be made and the

whole thing customised by creating a control screen using DPaint or other graphics package and pasting them into the program. Having done that you can tell the program where to find the control buttons and which part of the screen is the view window, and then you're away.

The final use for the program is object rendering. You create a complex object and rotate it to see how it shapes up to your idea. The example given is that of the space shuttle, and this is an easy example. You can't get much detail into the thing, but rough shapes are easy. As far as the creation of complex objects go, you may be better off with a full-blown rendering program like Real 3D v1.3.

## Summing up

On the pro side you have to admit that 3D Kit is an excellent piece of programming and is very easy to use. The objects are created quickly, and even a complete beginner can be up and running in a matter of moments. You can make shapes, whiz them around the screen and bolt them together with ease.

The manual is a thickish wad of lightly printed instructions for the various controls, and hints and tips for the creation of objects.

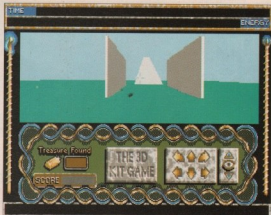
But there are a few drawbacks to all this wonderment. All things considered, 3D Kit makes a fair attempt at being all things to all men. But as a 3D design tool it is coarse and not very colourful, and you can't transport the 3D figures you make into any other format.

It is, however, very fast and allows you maximum freedom in the creation and placement of your objects. But where it really excels is in the creation of 3D Freescape-type games. Actually there's no "type" about it, they are real Freescape games! And using the DIY borders you can create exotic variations on this very popular theme in a stand-alone form.

So is it virtual reality? Well, yes and no. You never really feel like you are there in the flesh, and the 3D effect is a trifle wide-angled in most cases, giving you the impression that you have the angle of view of a fish.

But despite these technical reservations, 3D Kit is very enjoyable to use, and one of the most absorbing programs just to goof around with that I've seen for a long time. Now all it needs is an interface to X-Specs or a pair of eyephones and then you'd really be talking!

*3D Kit is an excellent piece of programming and is very easy to use. The objects are created quickly and even a complete beginner can be up and running in moments*



Once the program has been designed, it can be saved as a stand-alone program, like this one showing a view of the city skyscrapers



Movement control is easy using the point and click panel



Then all you need do is colour your world. Shapes and lettering can be put in, and each shape can be animated and display various effects



A group of buttons on the main screen is used to select the most frequently used option

# tip & SHOP

## We need you!

If you're the kind of person who can walk through Rainbow Islands, thrash Lotus Esprit and get home in time for Neighbours, then you're the kind of person we want to hear from. We're after tips for brand new games, particularly those reviewed within this issue of Amiga Computing. Not only will you be internationally famous, but you could even win something!

Send your tips to: **THE TIP SHOP**, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP. Come on, stop reading and get writing!

## Jason Holborn is the man with the very hottest of the hot games tips

### PREDATOR 2

The film may have been rather naff (Arnie wasn't in it, so it was bound to be), but Activision's computer adaptation was quite a fun little blast-'em-up.

To get infinite lives, pause the game and type in **YOUR ONE UGLY MOTHER**. Restart the game and you'll be able to come back from the dead more times than Bobby from Dallas!



### CAR-VUP

Here's a great little series of cheats for Core's Car-Vup sent in by reader Barry Whitehouse in Norwich.

When the high score is displayed



### STRIDER 2

Add a touch of Perestroika to US Gold's excellent Strider 2 with this great little cheat sent in by Lisa Humphries of Semington in Wiltshire. To activate it, press Help, the left cursor key and 1 together. You can now skip levels by pressing 1-5.



type **BUMPER** for unlimited bumpers, **PUSSY CAT** for an extra nine lives, **WOOARRGH** for speed turn (whatever that is), **WHOOPSIE** to start in the pre-historic level and finally **ARNIE** to get 100,000 points.

### VIZ

**B\*\*\*\*\*KS!!** (or should that be Mellie??) If Virgin's (fnarr fnarr) game of the adult comic is too hard (Ooer!), then try out this great little cheat sent in by John Maslin in York.

On the character selection screen, type in **WHAT A GREAT LOAD OF B\*\*\*\*\*DS** (I'll leave you to work this one out!) and the screen border will change colour. You can now skip levels by pressing 1-5.



### SUPERCARS II

The original Super Cars was a pretty sedate little offering compared to its sequel, what with all your competitors trying to blow you off the track with laser guided missiles and such.

If you fancy getting your own back, type in player one's name as **I WALK THE HILL** and player two as **INNARDS**.

You will then be rewarded with 99 per cent of every weapon on offer. Not only that, but you'll qualify automatically, regardless of your finishing position.

Now get out there and win!

### TURRICAN 2

Old Turrican may be one mean mamma, but even he needs a little help occasionally. To make him indestructible, select tune one, type in 42 and then press Escape twice. Like Badlink (remember him?), bullets will bounce off his bonce!



### PP HAMMER

A cheat code for PP Hammer? Isn't he the chappy who wears the baggy trousers and the sequenced jacket and sings *You Can't Touch This*? No? Oh well, it made a pretty good intro didn't it!

Anyway, here's the entire list of passcodes for Demonware's PP Hammer, a brand spanking new game that hadn't even been released at the time of going to press. How's that for an exclusive!

Level	Code	Level	Code	Level	Code
1	BEVDESRR	22	SJEDAATT	43	BURDIEGW
2	UDICGRAJ	23	HHUDJVST	44	JTDGCDUW
3	JCBBAJWI	24	SGRGSUGSI	45	BRAEBIV
4	UAVBCHRI	25	DFDGRITUB	46	IIIVAHU
5	AAWATGBH	26	SDAGERIR	47	BIGVWWCU
6	TVDWVFTG	27	DCWJGIGJ	48	JGWRJUIT
7	ITWJDSCG	28	SBVWAIUJ	49	FFTRITET
8	TSYVSCBF	29	CWAACGII	50	JEFHRSDS
9	ARCURBFG	30	RVBTFHHH	51	FDJERVIR
10	TWGWGME	31	CUGBWECH	52	BBSGIFR
11	IHISAVHD	32	RSWJCJGJ	53	FAETAHJD
12	TGFCSDUC	33	CRTCSSEG	54	IMVSCGVI
13	AEVTUJCD	34	RJCFADFD	55	EURSUFE
14	TDJTWBFB	35	CIBGWEVE	56	ATHWYDAH
15	ICJHJEI	36	RCSBAUFE	57	ESAVJCWH
16	TBCRSJWA	37	CFIADTAD	58	IIJUSARG
17	WWSHFGGA	38	REANUSWC	59	EGHWEVBF
18	SVIRHFAW	39	CCUWWJRC	60	ADHWGVTF
19	HUBJCFAW	40	RBHGCJKB	61	EFUABTSE
20	SSVJECRV	41	CAECSSHUB	62	IERBDSGD
21	WRHVEBVB	42	JUGGFTTA		

### CHIP'S CHALLENGE

Never has a cheat been as obvious as this one. There's no messing around with secret code, no pressing pause and moving your joystick in strange patterns, just press C to skip levels - it's as easy as that!



0530 411485

**ASHCOM**

0530 411485

**NEW****PRESENTS  
THE POWER WITHIN****END OF ALL  
DUPLICATING  
PROBLEMS****FOR ONLY  
£39.95**

INC. VAT &amp; P/P

**THE MOST POWERFUL SOFTWARE BACKUP SYSTEM EVER PRODUCED FOR THE A500  
THERE IS NO SOFTWARE YET PRODUCED THAT CANNOT BE COPIED USING THE MAC II SYSTEM****OUTSTANDING FEATURES**

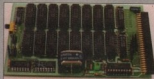
- Menu driven options which make it easy to use
- Load and save copy parameters in the built in filing system
- Backs up all protection schemes: Long/short tracks, strong bits, data compression/expansion
- On/off switch to make all hardware fully transparent when not in use
- Data verification & optimisation for fast loading
- Also backs up other formats: IBM, MAC, ATARI etc
- Quick and easy to install - hardware just plugs into the disk drive interface (second disk drive is required)

Mac II is the best, most professional and most versatile disk to disk copier ever made for the Amiga 500. The Mac II system is designed with a future, because it penetrates into the very heart of the Amiga. It's powerful software and hardware devices allow the user to navigate around any method of protection. Other copiers can only cope with existing methods of protection (and as you may already know not all of them as claimed). Other copiers have to be updated to compensate for new protection schemes.

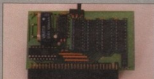
**MAC II DOES NOT! IT WILL SERVE YOU FOR EVER**  
Order Mac II now and you will never need to purchase another backup utility

**MAC II UTILITIES DISK**

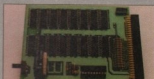
The Mac II UTILITIES DISK is a powerful addition to the MAC II system for the advanced user. It provides routines for alignment and disk speed check and the MFH analyser. The MFH analyser allows the user to analyse individual tracks on a disk quickly and easily to determine the optimum method of copying for the Mac II. This makes the Mac II system an incredibly powerful copier.

**ALL THIS FOR ONLY £19.95.****BUY THE UTILITIES DISC WITH THE MAC II SYSTEM FOR ONLY £49.95****TRADE ENQUIRIES WELCOME ON ALL PRODUCTS****1.8 MB RAM EXPANSION  
ONLY £139.45**

Populated to 512K	£53.95
Populated to 1MB	£89.95
Populated to 1.5MB	£116.05
Expander board for 512K version	£15.95
All versions work with 1.2 Kickstart except 1.5MB	

**512K RAM EXPANSION  
(4 CHIP VERSION)**

With clock only	£35.55
Without clock only	£30.95

**NEW LOW PRICE  
512K RAM EXPANSION  
(16 CHIP VERSION)**

With clock only	£23.95
Without clock only	£21.95

**12 MONTHS WARRANTY ON ALL PRODUCTS.****ALL PRICES INCLUDE VAT & P&P  
SEND S.A.E FOR MORE INFORMATION**

1986 Copyright Act. Ashcom neither condones nor authorises the use of this package for the reproduction of copyrighted material. The facilities offered by the Mac II are designed to reproduce users own software, PO software & other such programs where permission has been clearly given. It is illegal to make copies of copyrighted material without permission of the copyright holder or the licensee thereof.

**Only from ASHCOM, 10 The Green, Ashby-De-La-Zouch, Leicestershire LE6 5JU**MON - FRI 9.30-5.30  
SAT 9.30-4.00**Telephone: (0530) 411485 Fax: (0530) 414433**

**New Showroom**  
232 Tottenham Court Road  
London W1  
BUSINESS CENTRE 1ST FLOOR  
071 631 4044



**New Showroom**  
232 Tottenham Court Road  
London W1  
AMIGA WORLD IN BASEMENT  
071 631 4044

# DIAMOND

## COMPUTER SYSTEMS LTD

**WARNING WARNING WARNING WARNING WARNING WARNING WARNING**

We have limited numbers of our Diamond Packs 1 to 9. When these run out we will be supplying different packages incorporating the Screen Gems Pack from Commodore. These will cost at least £50.00 more.  
**PRICES INCLUDE VAT PRICES INCLUDE VAT PRICES INCLUDE VAT PRICES INCLUDE VAT**

**NEW PACK NEW**  
**AMIGA 500 MEGA PACK INCORPORATING AMIGA 500 +**

- \* 512K RAM
- \* 1Mb Disk Drive
- \* 4096 Colours
- \* Mouse
- \* Extra 512k RAM with Clock
- \* Three Manuals
- \* Operating System
- \* Built-in Speech
- \* T.V. Modulator

ONLY **£339.00**

WITH

8833 MK II Colour Monitor  
ONLY **£559.00**

**LIMITED STOCK**

**NEW PACK NEW**  
**AMIGA 500 MEGABLAST PACK INCORPORATING**

- \* 512K RAM
- \* 1Mb Disk Drive
- \* 4096 Colours
- \* Mouse
- \* T.V. Modulator
- \* Three Manuals
- \* Operating System
- \* Built-in Speech
- \* Synthesis

\* MEGA PACK \*

Man United, Total Recall, Speed Ball II, Xenon II, Teenage Mutant Ninja Turtles, Final Battle, Stunt Car Racer, Golden Axe, Cadaver, Super Off Road Racer

ONLY **£349.00**

WITH

8833 MK II Colour Monitor  
ONLY **£559.00**

**LIMITED STOCK**

**PACK**  
**ONLY WHILE STOCKS LAST**  
**AMIGA 500 AXE PACK INCORPORATING**

- \* 512K RAM
- \* 1Mb Disk Drive
- \* 4096 Colours
- \* Mouse
- \* T.V. Modulator
- \* Three Manuals
- \* Operating System
- \* Built-in Speech
- \* Synthesis

\* 10 GAMES \*

Golden Axe, Hard Drivin', Phobia, Shuttle Puck, Cafe, Silk Worm, Datastorm, Continental Circus, Turrican, Ninja Warriors

Emotion

ONLY **£349.00**

WITH

8833 MK II Colour Monitor  
ONLY **£559.00**

**LIMITED STOCK**

**NEW PACK NEW**  
**AMIGA 500 SKILL PACK INCORPORATING AMIGA 500 +**

- \* Disk Storage Box
- \* 1Mb Disk Drive
- \* 4096 Colours
- \* Mouse
- \* T.V. Modulator
- \* Dust Cover
- \* 10 3.5" Disks
- \* Three Manuals
- \* Operating System
- \* Built-in Speech
- \* Synthesis
- \* EXTRA 512k RAM
- \* Mouse Mat
- \* Dpaint II

\* "DIAMOND MEGA 10 GAMES" \*

Man United, Total Recall, Speed Ball II, Xenon II, Teenage Mutant Ninja Turtles, Final Battle, Stunt Car Racer, Golden Axe, Cadaver, Super Off Road Racer + Joystick

ONLY **£369.00**

WITH

8833 MK II Colour Monitor  
ONLY **£579.00**

**LIMITED STOCK**

**PACK**  
**AMIGA 500 NINJA PACK INCORPORATING AMIGA 500 +**

- \* Disk Storage Box
- \* 1Mb Disk Drive
- \* 4096 Colours
- \* Mouse
- \* T.V. Modulator
- \* Dust Cover
- \* 10 3.5" Disks
- \* Three Manuals
- \* Operating System
- \* Built-in Speech
- \* Synthesis
- \* EXTRA 512k RAM
- \* Mouse Mat
- \* Dpaint II

\* "DIAMOND MEGA 10 GAMES" \*

Golden Axe, Hard Drivin', Phobia, Shuttle Puck, Cafe, Silk Worm, Datastorm, Continental Circus, Turrican, Emotion, Ninja Warriors + Joystick

ONLY **£369.00**

WITH

8833 MK II Colour Monitor  
ONLY **£579.00**

**LIMITED STOCK**

**PACK**  
**EDUCATION PACK FROM DIAMOND**

- \* AMIGA 500
- \* 512k RAM board
- \* Mouse mat
- \* Dust Cover
- \* Funschool

ONLY **£349.00**

INSTRUCTIONAL VIDEOS

AMIGA MADE EASY part 1  
ONLY **£9.95**

AMIGA MADE EASY part 2  
ONLY **£9.95**

Volume Discounts and Educational Orders Accepted

**LIMITED STOCK**

**All prices include VAT**

**No. 1 FOR**



- Dorset  
☎ 0202 716226
- Bristol  
☎ 0272 522044
- Manchester  
☎ 061 257 3999

- Southampton  
☎ 0703 232777
- London  
☎ 081 597 8851
- Edinburgh  
☎ 031 554 3557

**New Showroom**  
232 Tottenham Court Road  
Telephone 071 631 4044

**512k RAM**  
Upgrade  
with clock  
**ONLY £24.95**

**DON'T FORGET  
OUR PRICE  
PROMISE**



**DON'T FORGET  
OUR PRICE  
PROMISE**

**512k RAM**  
Upgrade with clock  
AND Disk Drive  
**ONLY £74.95**

# COMPUTERS FOR BUSINESS

At DIAMOND COMPUTER SYSTEMS we can provide you with expert advice on all your business requirements. We always have a large range of computers and software in stock. In addition to our desktop range of both Amigas and PC compatibles, we also carry a wide choice of laptops and personal organisers.

**PRICES INCLUDE VAT PRICES INCLUDE VAT PRICES INCLUDE VAT PRICES INCLUDE VAT**

**9 PIN PACK** Word Processor & DTP

**AMIGA 500**

- \* 512K RAM board
- \* Philips 8833 Mk II Monitor
- \* SWIFT 9 Colour
- \* Connecting Lead

**PLUS HOME OFFICE**  
*The ultimate word processor/DTP pack*

- \* Integrated Word Processor
- \* DTP
- \* Spreadsheet
- \* Database

**£775.00**

**24 PIN PACK** THE ULTIMATE PACK

**AMIGA 500**

**PLUS HOME OFFICE**  
*The ultimate word processor/DTP pack*

- \* Integrated Word processor
- \* DTP
- \* Spreadsheet
- \* Database

**PLUS**  
24 pin SWIFT 24 colour printer  
Including colour kit

**PLUS**  
512K RAM Board  
Philips 8832 Mk II Monitor

**£899.00**

**PACK**

**A590**  
20Mb Hard Disk with 2Mb RAM

- \* 20 FREE 3 1/2" disks
- \* 80 Disk Capacity, Disk Box

**ONLY £339.50**

**A590 20Mb Hard Disk**

0Mb RAM	£279.00
512K RAM	£299.00
1Mb RAM	£319.00
2Mb RAM	£339.00

**IVS TRUMPCARD**  
D590 40Mb Hard Disk

0Mb RAM	£399.00
2Mb RAM	£499.00
4Mb RAM	£622.00
6Mb RAM	£739.00
8Mb RAM	£939.00

For Details of Mr. Diamond's Incredible A2000 Part Exchange Deals, See Page 3 Of This Advertisement

## LEISURE SOFTWARE SPECIALS

Golden Axe	£5.00
Hard Drivin'	£5.00
Phobia	£5.00
BAAL	£5.00
Silkworm	£5.00
Ballistic	£5.00
Continental Circus	£5.00
Turnican	£5.00
Saint & Greavile	£5.00
Ninja Warriors	£5.00
Table Tennis	£5.00
Chess Player 2150	£5.00
Datstorm	£5.00
Dungeon Quest	£5.00
E-Motion	£5.00
Grand Monster Slam	£5.00
Kid Gloves	£5.00
Rick Dangerous	£5.00
RVF Handa	£5.00
Shufflepuck Cafe	£5.00
Soccer	£5.00
Menace	£5.00
Blood Money	£5.00
Netherworld	£5.00

## APPLICATION SOFTWARE

<b>HOME OFFICE KIT ONLY £69.00</b>		
Due to popular demand Mr. Diamond is having an extra 1000 copies of this package made. It will be available in mid June. This package comprises a suite of six programs selected for their flawless performance and ease of operation. Everything you need to analyse your cashflow and produce a professional report.		
Word Processor	KindWords2.0	
Spreadsheet	MaxiPlan Plus	
Database	InfoFile	
Paint	Artist's Choice	
Desk Top		
Publishing	PageSetter	
<b>PLUS</b>		
35 Cale Fonts and the Postscript utility LaserScript		
<b>GENLOCKS</b>		
Rendale 8802	£149.00	
G2	£575.00	

## THE GREAT DIAMOND PART EXCHANGE DEAL

**TRADE IN YOUR OLD AMIGA 500 FOR ONE OF OUR NEW AMIGA 1500's.**

You get the base unit plus the 1500 software pack comprising Deluxe Paint III (the video-paint system) + four games. Their Finest Hour, Sim City, Populous, Battle Chess.

**FREE collection from your home or office!**

**PRICE ONLY £499.00**

**With a monitor £699.00**

**DISKS DISKS DISKS**  
**SONY BULK**  
**3.5" 135 tpi**  
**ONLY 35p each**  
**Limited Offer**



DON'T FORGET

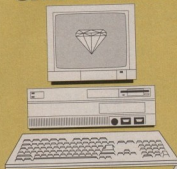
WANT A 2000?  
GOT A 500?

OUR PRICE PROMISE!

SWAP IT  
FOR ONLY  
£349.00

## GREAT AMIGA DEALS FROM DIAMOND

ALL PRICES INCLUDE VAT



## AMIGA 1500

A 1500 1Mb RAM,  
3.5" floppy disk drive,  
base machine with 2x 3.5" floppy disks  
and software pack **£999.00**all above + Monitor **£999.00**with XT Bridgeboard **£999.00**

## INCREDIBLE PX OFFER

visit Mr. Diamond and discover what  
your A500 is worth in part exchangeXT Bridgeboard  
5.25" floppy drive **£149.00**AT Bridgeboard with either  
3.5" or 5.25" floppy drive **£575.00**

## AMIGA 3000

The NEW  
Commodore AMIGAAMIGA 3000-25-40 25Mhz, 40 Mb hard disk  
**£2395.00**AMIGA 3000-25-100 25Mhz, 100Mb hard disk  
**£2695.00**AMIGA 3000 4Mb RAM expansion  
**£349.00**This machine is a veritable workstation; it comes with  
Workbench 2.0. The new Commodore Multi-tasking  
Operating System - it can run the normal video monitor or a  
multisync monitor without having to fit a flicker fixer. It can  
even run under UNIX. This is the machine to set the standard  
for professional use in the 1990's.

## AMIGA 2000

If you have reached the limits of the A500  
then take advantage of the **Diamond Part  
Exchange Upgrade Option**. Swap your  
1Mb A500 for an A200 for **ONLY £349.00**Mr. DIAMOND AMIGA 2000 PACK  
A2000 Rev. B 48Mb Autobooting Hard Disk,  
28ms average access **ONLY £995.00**  
With Colour Stereo Monitor **ONLY £1195.00**A2000 base machine **£469.00**  
Ex-demo A2000 **£545.00**

## PC XT &amp; AT Compatibility for AMIGA

XT Bridgeboard **£149.00**5.25" floppy drive **£149.00**  
AT Bridgeboard with either  
3.5" or 5.25" floppy drive **£575.00**

## IYS TRUMPCARD for AMIGA 1500 &amp; 2000

The IYS Trumpcard is the top selling SCSI hard drive controller. Representing the  
latest in technology directly from the USA, it will fit in either the A1500 or A2000. It is  
the only controller which will support IBM, Amiga and Apple MAC partitions on one  
hard disk. This allows you to run software for the three main hardware platforms in one  
machine. No more compatibility problems, only one computer can do this.

## A1500/2000 HARD DRIVE UNITS

## IMPULSE 64K CACHE

IMP525/LP	52Mb	9ms	<b>£229.00</b>
IMP805/LP	80Mb	9ms	<b>£369.00</b>
IMP1055/LP	105Mb	9ms	<b>£399.00</b>
IMP1705	170Mb	8ms	<b>£599.00</b>
IMP2105	210Mb	8ms	<b>£659.00</b>

## FUJITSU

M2612 ESA-MJ	90Mb	19ms	<b>£379.00</b>
M2613 ESA-MJ	135Mb	19ms	<b>£379.00</b>
M2614 ESA-MJ	180Mb	19ms	<b>£379.00</b>

## SYQUEST

44Mb 28ms removable  
cartridge drive. **P.O.A.**  
IYS Trumpcard for above add **£115.00**Installation and formatting **£29.00**Memory Upgrades for your  
Amiga 1500 & 2000 with the  
SUPRA 8Mb RAM boardBare board **£81.00**2Mb populated **£75.00**4Mb populated **£149.00**6Mb populated **£223.00**8Mb populated **£295.00**

## High Res

1024 x 768, 0.28 dot pitch  
Multisync Monitor  
**£349.00**

## AMIGA

3.5" external  
Drive  
**£54.95**To get those flicker free high res  
modes, use the FLICKER FIXER  
video card. **ONLY £299.00**

## Speed Up

your 1500, 2000, 3000 with a  
Co-processor Board  
Phone for details

## PHILIPS

8833 M111 colour monitor  
**only £234.00**  
inc. dust cover & lead



# CDTV AT LAST IT'S HERE!

**What is CDTV?** Are you confused by all the hype? If you are then why not come in to one of our shops for a full demonstration of this exciting new medium.

**£599.00** INC VAT

## Great Part Exchange Offers.

Come in and find out how much your old Amiga 500 is worth in exchange for a CDTV system.

**Introductory Offer** - Either 2 CD's of your choice from the list below  
Or an external Amiga drive free of charge!

## CDTV THE SOFTWARE

Time Table of Science & Innovation	£39.99	R	Lemmings	£34.99	E
Time Table of Business Politics	£39.99	R	Xenon II : Megablast	£29.99	E
Dr. Wellman	£54.99	R	Indoor Sports	£29.99	E
The New Basics Electric Cook Book	£39.99	R	Mind Run	£29.99	D
World Vista Atlas	£54.99	R	Thomas's Snowsuit	£34.99	D
All Dogs Go To Heaven, Electric Crayon	£34.99	E	Scary Poems for Rotten Kids	£39.99	D
Classic Board Games	£34.99	E	Paper Bag Princess	£34.99	D
American Heritage Dictionary	£49.99	R	The Tales of Peter Rabbit	£39.99	D
Complete Works of Shakespeare	£34.99	R	Mud Puddle	£34.99	D
Illustrated Holy Bible	£34.99	R	LTV English	£34.99	D
Music Maker	£34.99	M	Advance Military Systems Series	£29.99	A
Barney Bear Goes to School	£29.99	D	Many Roads to Murder	£29.99	E
Fun School 3 (for under 5's)	£24.99	D	Snoopy	£29.99	E
My Paint	£29.99	D	Spirit of Excalibur	£34.99	E
Women In Motion	£29.99	A	Horse Racing	£29.99	E
Psycho Killer	£29.99	E	Garden Plants	£34.99	A
Wrath of the Demon	£29.99	E	Trees and Shrubs	£34.99	A
Case of the Cautious Condor	£34.99	E	Fruits , Vegetables and Herbs	£34.99	A
Battlestorm	£29.99	E	Hutchinsons Encyclopaedia	£49.99	R
Animated Colouring Book	£19.99	A	Ninja Highschool Comix	£16.99	E
Sim City	£29.99	E	Dinosaurs for Hire	£16.99	E
A Bun for Barney	£34.99	D	Basketball	£29.99	E
Defender of the Crown	£29.99	E	Battlechess	£44.99	E
Indoor Plants	£34.99	A			



THE  
**LEISURE SOFTWARE**  
**S P E C I A L**  
RETAIL SALES PROMOTION

For the month of this coverdate we will be offering a 40% discount on Amiga leisure software to our retail customers. To qualify for this special promotion you must be a member of the Mr. Diamond software club. We are offering membership for £5.00 until the August renewal date when it is £20.00 for one year. Please bring this advertisement with you.

This discount works out like this:

Lemmings Normal Price £25.99 Club Price £15.59

We are also running promotions on some applications software. For instance, Music-X's recommended price is £99.95. Mr Diamond is offering it to club members at only £59.95 or £74.95 with a MIDI interface. Please bring this advertisement with you.

We also have a large range of budget titles for our club members.

ICON PAINT	£5.00	Final Battle	£5.00
Man United	£5.00	Stunt Car Racer	£5.00
Total Recall	£5.00	Golden Axe	£5.00
Speed Ball II	£5.00	Cadaver	£5.00
Xenon II	£5.00	Super Off-Road Racer	£5.00
Teenage Mutant Ninja Turtles	£5.00		

Mr. Diamond is also offering a 25% discount on all ABACUS books. Please bring the voucher on the next page.

D501 512k RAM card + clock  
ONLY £24.95

ALL PRICES INCLUDE VAT

D501 512k RAM card +  
Disk Drive ONLY £74.95

## CHIPS & DISKS

We only sell new chips

A590 Memory chips  
0.5Mb £17.60  
1.0Mb £35.25  
2.0Mb £69.00

A590 2Mb Populated £339.00

### 8UP BOARD & CHIPS

Bare Board (0Mb) £81.00  
add cost of RAM to your  
specification

2Mb + £69.00  
4Mb + £137.50  
6Mb + £206.00  
8Mb + £274.00

## DISK CONTROLLER CARDS

The GRANDSLAM, new SCSI controller  
from IVS. Extra Parallel port - space for  
8Mb on board RAM

ONLY £229.00

NEXUS SCSI hard disk controller card -  
space for 8Mb on board RAM

ONLY £199.00

## MONITORS

ALL PHILIPS U.K. MONITORS  
HAVE 1 YEAR ON SITE  
GUARANTEE



PHILIPS 8833(U.K.)

Colour Monitor with stereo sound  
+ FREE LEAD & DUST COVER

Only £234.00

DIAMOND Multisync Monitor

Only £349.00

COMMODORE 1084's

Only £229.00

COMMODORE 1084/SD Monitor

Only £234.00

## DISKS

FOR A LIMITED PERIOD WE ARE  
SELLING HIGH QUALITY 3.5" SONY  
BULK DISKS AT ONLY £0.35 EACH

## PRINTERS & RIBBONS

STAR LC200 COLOUR	£189.00
CITIZEN 124D	£189.00
OKIDATA LASER 400	£699.00
PHILIPS MINS 1432	£139.00
CITIZEN SWIFT 24	P.O.A.
WITH COLOUR	P.O.A.
PANASONIC KXP1123	£175.00
SWIFT 9 Colour	P.O.A.
STAR LC MONO	£139.00
STAR LC241D	P.O.A.

### RIBBONS

OKI 20 COLOUR	£4.95
OKI 20 BLACK	£4.95
PANASONIC KXP1124	£4.95
KXP1080/1203	£4.95
OKI 6100	£4.95
M.TALLY M180	£4.95
STAR LC10	£4.95
STAR LC12 COLOUR	£5.95
STAR LC2410	£4.95
EPSON L8000	£4.95
AMSTRAD PMP4000	£4.95

## APPLICATIONS

XCAD Designer	£69.33
Platinum Works!	£88.12
Transcript W/P	£29.50
ProPage 2.0	£130.41
Superbase 4.0	£81.00
Hyperbook	£34.00
Descartes Maths	£22.50
Wordworth	£85.00
Pagestream 2.1	£116.50

## VIDEO SECTION

### PAINT

Deluxe Paint III	£54.95
Digipaint III	£54.95
Photon Paint II	£23.50
Spritz	£3.50
Icon Paint	£3.50
Comic Setter	£23.50
Spectra Colour	£65.00

### FRAMEGRAB

DigiView Gold 4.0	£88.13
Rombo Vidi	£81.00
Disney Animation	
Studio	£82.25
Colour Pic	£399.00
Markam	£449.00

### VIDEO TITLING

Video Studio	£116.50
Pro Titler	£149.00

## AUDIO MUSIC AUDIO

All the latest and best audio and music  
packages from Mr. Diamond at the  
lowest prices

Musix Vx ver 1.1	£59.00
Perfect Sound	£39.00
Audio Engineer	£149.00
MasterSound	£25.00
Quartet	£33.00
MIDI I/F	£26.00
Keyboard	£25.00

Diamond Computers  
232 Tottenham Ct. Rd.  
London W1  
TEL 071 631 4044

## HOW TO ORDER

Simply telephone through your order, giving your Access  
or Visa card Number or send a cheque or postal order to  
your Local Dealer.

All prices include VAT unless otherwise stated.

Next Day Courier Service Delivery £11.75

Please allow 5 working days for cheque clearance.

Bankers drafts clear on the same day

All prices are correct at time of going to press but may change without notice.

## THE DIAMOND PRICE PLEDGE

If, whilst buying goods from us, you find a better price on the same goods  
from one of our U.K. competitors then Diamond will match that price.

Even if our prices have increased we will honour the prices in this  
advertisement on items in stock as long as you bring it with you.

This Pledge applies only to customers producing or relying on this  
advertisement before the end of the month of publication. It does not apply  
to competitors prices offered in closing down or stock clearance sales.

This Voucher is worth  
25% off all ABACUS  
computer books

WHEN ORDERING  
PLEASE QUOTE

AC07

Diamond Computers Ltd  
84 Lodge Road  
SOUTHAMPTON  
TEL 0703 232777  
FAX 0703 232679

Diamond Computers Ltd  
406 Ashley Road  
POOLE - Dorset  
TEL 0202 716226  
FAX

Diamond Computers Ltd  
443 Gloucester Rd  
Bristol  
TEL 0272 522044  
FAX 0272 693223

LAN Computer Systems  
1045 High Road  
Chadwell Heath -  
Romford  
TEL 081 597 8851  
FAX 081 590 8959



# THE SOFT ALTERNATIVE

*Real*  
Presents

## REAL 3D VERSION 1.3

*It's bigger, it's better.*

Full 3D modelling, ray-tracing and animation package featuring 8 levels of anti-aliasing. Comprehensive IFF and Texture input features including Bump, Clip & Brilliancy mapping.

## IMAGINE

*Comprehensive Animation Editor.*

A professional 3D Animation rendering system for the Amiga. Techniques include ray-tracing, solid frame, wire frame and polygon modelling with real time object manipulation.

Professional suppliers of Hardware, Software & Peripherals.  
Consult Yuri for all your AMIGA requirements.  
Specialists in Video Graphics and D.T.P.

6 LOTHAIR ROAD, AYLESTONE, LEICESTER LE2 7QB TEL: 440041 FAX: 440666

# AMEAGRE PRICES FOR AMIGA USERS

50 D5DD

£17.80

100 D5DD

£32.90

Armour-Geddon

£15.75

Lemmings

£15.75

### Double Sided Double Density with labels

Quantity	Price	Quantity	Price
10	£4.30	80	£27.60
20	£7.80	100	£32.90
25	£9.95	120	£39.95
30	£11.50	150	£49.35
35	£12.95	200	£63.45
40	£14.25	300	£94.00
45	£16.00	400	£123.50
50	£17.80	500	£152.75

Full No Quibble Replacement Guarantee

### BOXES (with keys, labels, dividers)

10	40	50	80	100	120
0.94	4.95	5.60	6.30	6.80	8.75

### Latest Games

Brat	£15.96	PGA Tour Golf	£15.96
Chuck Rock	£15.96	Powermonger	£18.95
Cybercon III	£15.96	Railroad Tycoon	£18.95
Eye of Beholder	£18.95	Speedball 2	£15.96
Gods	£15.96	Supercars 2	£15.96
Heroquest	£15.96	Super Monaco GP	£15.96
Killing Cloud	£15.96	SWIV	£15.96
MegaTraveller I	£18.95	Turrican II	£15.96
Monkey Island	£15.96	Viz	£15.75
Nam	£18.96	Wonderland	£18.95

Orders Accepted for any games not listed above

Canon BJ10e Bubble Jet Printer	£259.95
Canon BJ10e Bubble Jet Ink Cartridge	£18.25
CUMANA CAX354 3.5" External Drive	£59.95
Cortex 0.5 Meg Expansion Memory	£29.45
Cortex 0.5 Meg Expansion Memory + Clock	£34.90

All Prices Include Postage & VAT, and are effective until August 5th 1991  
Credit Card Orders (9am - 10pm 7 days)  
Cheque/Postal Orders to:

# DataGEM Limited

## 071 608 0624

Dept AC, 23 Pitfield Street, London N1 6HB.  
Showroom OPEN Monday - Friday 10am - 6pm. Exit 2 Old St. Tube

No matter how often you look at it, the drafted thing won't go away. Scoff at the mere idea, deny its existence, or even insist that the whole thing is a figment of some marketing person's perrier-soaked imagination, the parish newsletter is here to stay, and with it the demand for a certain kind of wordprocessor.

Come to think of it, so is the club newsletter, the fancy-headed notepaper, and the fanzine. The one thing they all have in common is a demand for an Amiga program which will combine words with graphics in an easy and affordable way, and Pen Pal is one of the best available options.

## The DTP touch

Pen Pal is one of the older packages available on the Amiga and one of the few major wordprocessors we haven't yet looked at in our monthly coverage of this area. It is, however, probably best considered as a package in its own right rather than as competition for the likes of Protext and Wordworth.

It boasts most of the usual wordprocessor features, with 100,000-word spell checker and comprehensive text formatting options, but its real strengths lie in its built-in database and, in particular, its DTP-like graphics tools.

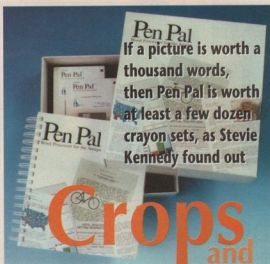
With these, the Pen Pal user finds a program capable of loading and manipulating graphics faster and easier than any other Amiga wordprocessor. The results may not be as good as the output from programs such as Pro Page and PageStream, but for those with eight-tone colour printers they're perfectly adequate.

## Cropped to perfection

Graphics are loaded into Pen Pal by the Import Picture option which allows a series of operations to be carried out before the picture is placed in the document.

You can choose on which side of the graphic the text will flow and whether it will do so in a straight line or contour itself to the graphic. Size can be scaled down with an option to retain the picture proportions of the original picture, and you can choose whether or not the picture's background colour is to be made transparent.

Once all this has been sorted out, the image is placed in the document.



From here on in it can be cropped and moved around with ease, and Pen Pal really begins to grab your attention with the speed at which it can move and redraw a graphic.

Graphics are easily picked up by clicking on them and holding down the mouse button to drag them around the screen. If repositioning operations are to be carried out, a click on the Select Graphic icon in the tool bar on the left-hand side of the screen results in a graphics box with the usual drag handles appearing around the picture.

Better still, though, is the Crop Graphic tool. Choose this and the cursor changes to a cropping tool which does a graphic up by resizing the box around the picture. This is extremely useful for removing extraneous graphics or touching them up to fit perfectly into a document, and is carried out at an impressive speed.

What's more, if a crop is made too tightly, it is possible to "uncrop" by pulling the box back out. The cropped area is not discarded and will simply

reappear when needed. This is handy if you're messing about to see what effect a crop will have on the graphic in question, and allows more experimentation with page layout.

Pen Pal's most obviously un-wordprocessor-like feature is the integral database, designed to give users the option to keep relatively straightforward databases and use them for mailmerging purposes.

The database, however, is an unusual beast and more than an electronic card index. In terms of the format taken by each database, options are pretty limited, but it will carry out simple column addition operations and is capable of including formulae so that the database takes on the aspect of a spreadsheet.

To make things easy for the user, the physical layout of the database is restricted to rows, columns and cells into which the user puts data which can take the form of dates, phone numbers, text, or formulae. There is an option to calculate the sub-total for any one column, and this in itself can be carried out in a variety of ways.

Apart from a simple total of everything in an "Amount" column, which

is useful when keeping tabs on, say, the total value of all subscriptions paid to the club secretary, you can use sub-totals on "Calc" columns with formulae containing any or all of the four arithmetic operators.

## Power options

In addition to the extensive database definition options are some quite flexible editing and sorting facilities and, most useful of all, options to print labels, columnar reports, and mailshots with the merge facility.

The latter is particularly powerful when used in conjunction with the database, and can produce letters containing several data items as well as the standard form-letter-with-address type of mailmerge.

The whole database section is fast, easy-to-use, and an extremely useful addition to Pen Pal. In itself it doesn't match the likes of Prodata or Superbase, but I found it much more appealing than the decidedly average wordprocessor.

Standing on its own two feet as a wordprocessor, Pen Pal would last about ten minutes. With the inclusion of so many DTP features and the database, however, SoftWood elevated Pen Pal above the status of a mere wordprocessor.

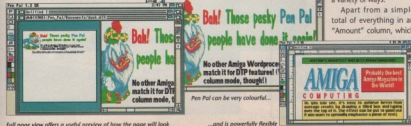
The only problem with this is that on this level Pen Pal will appeal to a rather narrowly defined set of users.

## Conclusion

I would recommend Pen Pal to anyone responsible for parish newsletters, and particularly to those involved in the administration of a user group, social club, or any other organisation that needs nice graphics touches and a database facility. Give it a whirl if you fit into those categories.

If you don't fit the bill, try a program with more wordprocessing bite or go the whole way and buy a set of dedicated utilities such as Prodata and PageSetter.

Pen Pal is a product of SoftWood Inc,  
Post Office Box 50178,  
Phoenix, Arizona 85076  
Available: Now  
Price: £79.95 (£99.95 with  
0.5 meg upgrade)  
Supplier: Gordon Harwood  
Computers (0773 836781)



Full page view offers a useful preview of how the page will look

...and is powerfully flexible

### Ease of use



### Implementation



### Value for money



### Overall



# New Products From Checkmate Digital



H

A

M

E

## High quality RGB output for your Amiga

The HAM-E system gives you high resolution **pure RGB** images on your standard 1084 RGB monitor. They are pure RGB, not smeary composite. No other graphics expansion device offers so much performance and costs so little! And all the software to run it is **free**. Even upgrades! There is not enough room to cover all of the advanced features of this system, so here are just a few.

### System Features:

- \* Paint, Render, cvt ip s/w
- \* 18/24 bit colour modes
- \* 256/512 color register modes
- \* RGB pass through
- \* Screen overlay / underlay
- \* Screens pull up / down & go front / back
- \* View with any IFF Viewer
- \* Animate via ANIM or Page Flipping
- \* Works with Digiview
- \* Completely letter-compatible
- \* NTSC encoder compatible
- \* S-VHS encoder compatible
- \* PAL & NTSC compatible
- \* Uses **only** RGB port
- \* FCC Class B, UL Listed
- \* Works w/std Amiga monitors
- \* Does **not** use Amiga power

### Paint Features:

- \* Customisable tile blitter
- \* RGB/HSV, HSL, CMY, Palette
- \* RGB and HSV spreads
- \* Extensive AREXX support
- \* 16 colour cycle glow ranges
- \* Range zoom, reverse, stop
- \* Smooth zoom, rotate or scale
- \* Area, Edge, outline fill / overfill
- \* Defined 24 bit fill palette
- \* Anti-Alias with no/low burn
- \* Anti-alias, glow GIF exactly
- \* CC source code available free
- \* Upgrade From BBS service
- \* Color or 256 greys painting
- \* 256 colour stencils
- \* Matte/colour/anti-alias/cycle burn
- \* Prints via printer device
- \* Auto enhance std IFF palettes
- \* Writes IFF24,GIF HAM-E

### Image Compatibility:

- \* 24 bit IFF, 24 bit IFF with CLUT chunks, 2 to 256 colour standard IFF, half-bright, HAM, DKB and QRT trace; RGB8 and RGBN; Targa; GIF
- \* Dynamic H-Bits: SHAM, ARZO, ARZI, AHAM, 18 bit ScanLab; UPB8 browser
- \* All of the 16 different H-Bits from 16 different types.

\* Images may be loaded and converted to 24 bit IFF files.

\* Image processing software supplied provides edge enhancement, blur, various convolutions, and much more.

**£29.00**  
**NOW WITH FREE**  
**16.7 MILLION COLOUR**  
**PAIN SOFTWARE**

BLACK BELT SYSTEMS

### The Hyper Drive System.

This exciting new system is the optimum upgrade for Amiga A500 owners, satisfying their needs for future expansion. Includes the following:-

- |  |         |
|--|---------|
| * Checkmate A1500 Expansion System.                | 230.00  |
| * Checkmate 200watt, Surge protected Power Supply. | 79.00   |
| * ICD inc ADSCSI 2000 Hard disk controller.        | 130.00  |
| * Checkmate A2000 adaptor card                     | 68.00   |
| * Fujitsu 45mb High Speed, Auto-Park SCSI Drive.   | 239.00  |
| * 62mm High Power Fan .                            | 25.00   |
| * Hyper Helpers Software from INOVAtronics         | 49.00   |
| Normal Price                                       | £811.00 |

**Hyper Drive System Price Only £ 699.00 inc VAT & P&P**

You still have room for a second Floppy Drive , Accelerator Card, upto 15 Mb of Ram, and a Flicker Free Video Card. Ring For Details.

**Larger Drives available:- 90Mb + £100.00, 184Mb + £300.00**



## The Cando Enviroment

£ 125.00

So many people ask me "What is CanDo". I will try to answer this question as simply as possible without over simplifying the power of this highly impressive package.

CanDo is a complete program authoring system which allows applications to be built by simply clicking on gadgets for the usual Hyper-Media or Multi-Media applications then you can progress onto programming using the simple but powerful scripting language built into CanDo. This scripting is written in most cases by CanDo for you, so for example, when you want to play a sound you call up a script and click on the sound tool gadget. This will bring up a requester asking for a sample from the CanDo Sounds directory, decide which one you want and click OK. Next it will ask the Volume and then which audio channel is to be used. Once these are done then CanDo will generate the correct script for you. It is quite rare to have to actually type in commands so scripting really is a click of the button away.

One great thing about CanDo is that programmers can prototype their software very quickly to iron out the design problems and if necessary can have another program

by INOVATronics called Power Windows generate the code for the windows and gadgets used in the CanDo prototype and use a printout of the script as pseudo code to generate the rest of the program. Now this is software programming automation. Remember that the programs that CanDo generates are not only fully multi-tasking and highly efficient but it can also generate full run time code with no need to licence the CanDo support library from INOVATronics.

Well there you have it. A full object based software building machine that is simple and yet extremely powerful. Hope this answers your questions; if not then give us a ring at the office.



### Checkmate Digital Hardware Prices.

A590	20MB	+ 2MB High Speed Ram	£ 349.00
A590	42MB SCSI	+ 2MB High Speed Ram	£ 499.00
A590	84MB SCSI	+ 2MB High Speed Ram	£ 599.00
A590	176MB	+ 2MB High Speed Ram	£ 799.00
A590	Replacement 20Mb Drive Unit		£ 75.00

ICD ADSCSI 2000 High Speed Drive			
Controller for A1500 / A2000, CDL A1500,			
CDL Plus, HiQ Tower, HiQ Hippo.			
As above	+ sockets for 8MB ram (pop 2MB)		£ 299.00

3.5 inch uncased Fujitsu SCSI drives, as used in			
CDL Hyper Drive System, Auto Park.			
45	MB average 25ms access, Fastest 10ms		£ 239.00
90	MB average 19ms access, Fastest 10ms		£ 349.00
184	MB average 19ms access, Fastest 10ms		£ 535.00

Ring for prices on the amazing CSA Accelerator Cards, and our competitive Ram chip prices.

DEALER ENQUIRIES WELCOME

Access

Phone Checkmate Digital Today On:-  
Tel +44 (0)71- 923 0658 Fax +44 (0)71-254 1655  
80 Mildmay Park, London, N1 4PR, UK

VISA

# Two giants of the virtual world go

## HEAD to TAIL

**A**s promised in last month's ray tracing spectacular, this time I'm looking at the two leading lights in the field of reflection and refraction. Real 3D, as many are aware, isn't a new name in the virtual world. Nevertheless this latest incarnation boasts some dramatic improvements on its predecessor.

Imagine, like Real 3D, is another product of evolution and its ancestry can be traced back to one of the founding fathers of Amigan ray tracing, namely Turbo Silver. Real and Imagine are both state of the art for quality, ability and speed but which is best for you? Hopefully what follows will point you and your cash in the right direction for perhaps the biggest software bill you're ever likely to face.

Each of the contenders has a vastly different approach to modelling. Real is a solid modeller, and as a result all its objects are combinations of primitives or "prims". This isn't to say that finished objects and images will be in any way "primitive", it refers only to the components used. A whole range of tools and techniques can be applied to stretch, extrude and generally deform simple objects to the required design, no matter how complex the result.

These techniques can be used to

such a degree that prims can become unrecognisable as their former simple forms. It's fairly safe to say that any object can be created with a combination of the tools, lathe, primitives and logical operations.

Imagine's approach to the virtual world revolves entirely around surface modelling which creates a potentially infinite number of faces or facets on the surfaces of its objects. For example, a sphere within Real 3D would be one continuous mathematical plane suspended in space. Imagine however, would consider it as a floating polyhedron made up of a vast number of tiny interconnected triangular plates.

Imagine's approach would, by definition, seem prone to producing rough results or "jaggies" due to the use of flat surfaces when producing, say, a curve. In practice this isn't the case - Imagine's objects are easily on a par with those of Real both for quality and definition.



A sign that only exists in the the imagination of Real 3D

### Paul Austin finds it hard to pick the winner as Real 3D and Imagine face up to the ultimate ray tracing challenge

The thanks for this must in part go to Imagine's phong shading routine which is responsible for the smoothing effect. Perhaps the only element which tips the quality balance slightly in favour of Real would be the inclusion of Real's eight levels of anti-aliasing, something which Imagine can't match.

You might well ask why Imagine employs surface mapping if it requires extra processing. Well, as with most things it's a case of swings and roundabouts. An object made up of multiple facets may require more attention but it's also much more flexible because of its component parts.

The spiky sphere shown in the example was produced in seconds simply by dragging several points out from the surface of the sphere. All Imagine objects are formed by stretching a skin over a framework of individual points. Each of these points can be pulled, pushed and fiddled with individually.

As a result of this flexibility, subtle forms and adjustments are easy to produce. A spiky sphere takes moments in Imagine, but the same object in Real would require the creation of a sphere and several pyramids, all of which need to be adjusted and placed. In ray tracing terms the time difference would be minimal but it's worth considering if you're working commercially.

OK, now you know how the opponents shape up, it's time to look in

detail at each package's favourite punch as well as pointing out the odd weakness. First on the scales we have...

### Imagine

Impulse's long-awaited sequel to Turbo Silver has finally arrived. Imagine, or Son of Silver if you prefer, makes its debut on a single disk which will automatically un-archive itself onto the drive of your choice as either a 68000 or 68030 version, or even both if you really want your money's worth.

Impulse claim that Imagine has thrown off the chains of complexity that haunted its predecessor. In the past, Turbo Silver was praised for its quality but was notorious for its hatred of humans. Is Imagine all that Turbo Silver was and more, while remaining easy to use? We shall see.

### Software structure

Imagine has a very different approach to Real, not only with respect to its objects but also the environment in which they're made. It employs a modular format which divides the creation of an image into several distinct sections.

For example, a single object could be created in the forms editor then moved to the detail editor for refinements such as texture, colour and so on. If animation is required it's off to the cycle editor and finally to the stage editor for camera placement and lighting.

To render an image there's another trip to the project editor. All of these trips and detours require loading and saving both before and after you've used a particular module.



As promised in the article here's a closer look at the latest talents of Real 3D, smooth lathes, polygons the lot

The program employs boolean or logical operators which allow prims and other forms to be used as tools on objects – cutting, drilling and so on. Another powerful option is the magnetic tool which boasts definable attraction and repulsion. As a result surfaces can be drawn up or forced down uniformly.

Special mould and skin functions allow you to extrude shapes in some very strange ways and these can then be draped over surfaces or basic structural skeletons.

It's also here that the attributes for all your creations are defined. This is another element of Imagine's repertoire that's been very well thought out. For example, it's possible to combine coded textures such as "Wood" and "Disturb" while mixing IFF textures within the same object's surface.

## Puzzling paths

Another idiosyncrasy of Imagine is its insistence on ridiculously complex and convoluted file paths. Each project has its own directory and then a separate sub-directory with individual directories for objects and scenes and so on. If you're one of the lucky few with a hard drive all this module swapping and path searching isn't really a problem but for mere mortals working on floppies it's a bore.

And so to the manuals. At first glance the reference and tutorial provided seemed to support Impulse's claim that Imagine is indeed easy to grasp. The main reason for this assumption came from their less than weighty appearance. After a little experimentation it soon became clear that they were quite light on detail and on several occasions left me stranded, especially during the tutorial.

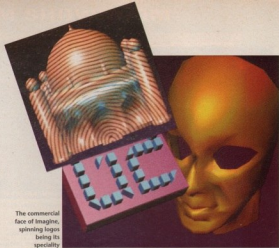
The detail editor goes a long way towards making up for the shortcomings of the manuals. It's a real joy to use, especially if you're the lucky owner of an Amiga 3000 or a flicker-fixed 2000 – the combination of the smooth and stylish four window display plus rock solid interface is wonderful.

Manipulation and altering of objects is a little tricky at first but with practice you soon master the rather delicate art of selecting objects by either point, face or edge. The ability to zoom in on individual windows is particularly handy for fine-tuning your creations.

The perspective or fourth view is another big plus as it gives you a constant reminder of exactly what's going on in your image. The option to view in either solid or shaded modes also does wonders for your perception of what's what.

Anyone who's worked with complex wireframes will certainly appreciate this particular addition. You'll be pleased to know that it has no effect on the other screens when updating, so you can work on obliviously and simply enjoy the benefit of a constant reminder.

As with Real, primitives are available but in considerably fewer numbers and variety. All the essentials are there however, – spheres, tubes, and so on.



The commercial face of Imagine, spinning logos being its speciality

## Of other editors

The forms editor is something of a strange beast and I must admit it's an acquired taste. I found it a little difficult to come to terms with, but having said that, others rave about its power and abilities – no doubt with a little more time I might agree.

In theory, the forms editor allows you to create organic and natural shapes easily and quickly by dragging and manipulating groups of points. With practice, almost any kind of form can be realised, but in my case it was definitely a case of luck rather than good management.

The stage editor is the part of the program where most of the animation and all of the object positioning is determined and set. The combination of the familiar four-way editing screen and an extensive staging sheet allow the user to choreograph complex motions for all of the elements within the defined scene. There are also pre-

defined actions like explode and grow which can be applied to any object within your virtual creation. The staging sheet is reminiscent of a professional animation sheet with a strong cartoon and movie influence – objects are referred to as "actors" and playback as "action".

Another impressive talent of Imagine is its ability to morph objects. This simply means that elements within an animation can be transformed from, let's say, a sphere to a cube. This is a strong point as such things would be a nightmare to attempt on Imagine's opponent.

But it's the animation element which is the program's real strength. It has talents and techniques that Real 3D simply can't match.

Again, it's far from simple but with patience stunning results are ready and waiting. Having said that it's worth remembering that ray-traced animations are strictly for the power users – one meg simply won't do and without acceleration a single anim may take a week to render.

## Real 3D

For those unfamiliar with Real 3D a basic outline of its approach to the virtual world is in order. The program consists of three elements, each adding its individual talents to the finished masterpiece, whether that be a single image or an entire animation.

The most heavily used element of the Real threesome has to be the editor screen. This uses the now common orthographic or tri-view screen format which displays three dimensional space from separate elevations.

Controlling what appears in your imaginary world is achieved using a variety of pull-downs which give instant access to everything you'll need, ranging from the primitives or prims, to the most complex boolean operations. The latest version boasts some new point-and-click controls which make prim selection even easier.

As well as placing and manipulating individuals, hierarchical objects are available thanks to a simple process which links individual prims to form complex objects. These are then considered to be individuals themselves and as a

## Cycling about

Imagine's cycle editor is unique to Imagine and can be a little confusing. It's used to create animated objects which can then be imported into the stage editor.

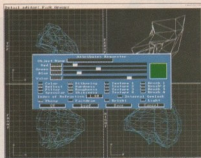
By sculpting an entire figure and then assigning object filenames to the structure's bones, a stand-alone animated character can be produced using key framing

actions. When finished it's off to the stage editor for tweaking and further animation.

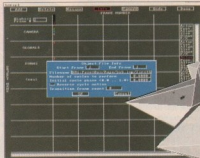
To say Imagine's rendering section is very comprehensive would be an understatement. It outputs any standard Amiga resolution as well as 24-bit. The output is excellent and the quality of rendering



A quick glance at some of Imagine's more organic masterpieces



Picking points and adding attributes within Imagine's Detail Editor.



Imagine's complex but powerful animation sheet in action.

result, can be moved, rotated, stretched and shunk in the same way as a standard prim.

The huge range of tools and prims make creation of objects simple and speedy. All the object modelling, manipulation and scene setting goes on here plus the addition of textures which can vary from imported IFF wraps straight from your favourite paint package to bumpmapping a knobby organic masterpiece.

As you might expect, a complete range of boolean operations and definable macros help to make Real the easiest modelling environment on the market.

The only moan is the lack of booleans or macros within the beginner's version. This is no doubt a play to encourage upgrades, but to be honest it seems a little mean on Activision's part—although they insist it's due purely to memory requirements.

## Wireframe

This is perhaps the most user friendly element of the program as it allows you to move at will around your creation, zooming in and out, rotating and turning with a simple drag and a click. When you're happy with the camera angle a single tap on the rodent has it ready to render.

The ability to fly around your creation opens a whole range of surprising angles and alternatives that may never have occurred to you otherwise.

Besides setting the scene, the wireframe is also responsible for previewing animation paths and designing new ones manually.

Simple paths can be assigned to objects in the editor screen but the fine-tuning is all done in the wireframe, and additions such as manually designed camera paths are easily created in swift succession, simply by moving from one to the next, hitting Record as the required position is reached.

Another new addition to Real 1.3 is the ability to animate boxes rather than the entire image. This is a real bonus if you want to render long animations quickly and opens up animation to those of us with less than a massive amount of available memory.

In general, the animation controls are far simpler than Imagine's but the results are still very impressive. Imagine's approach is much more theatrical and, of course, has the added bonus of morphing. Morphing is planned for Real but at the moment is stuck firmly to the drawing board.

If you're not desperate for ultra-complex animation, Real should be more than adequate. Its most appealing feature is the creation of animation paths that consist simply of selecting an object, drawing a line and watching as the object dutifully follows your command, automatically recording each frame in succession.

Orbits and observer positions are all definable and can be altered within the animation for added excitement.

## Rendering control

As with most elements of Real, the rendering screen at first appears relatively unchanged but, in fact, it's here that many of the new enhancements appear. For example, extra 24-bit rendering formats such as Targa and IFF 24 and, of course, the highly impressive eight-level anti-aliasing control.

This new feature adds considerably to rendering times if used to the full, but with results which challenge the output of frame buffers it's worth the wait.

The rendering controls are essentially simple, being a matter of clicking on buttons or dragging sliders to set the desired combination of effects, the range and variety of which only Imagine can match.

In Real's Turbo version every combination of resolution, light intensity and screen format are possible. The 24-bit formats herald the next generation of images waiting to appear, thanks to the increasing number of 24-bit boards. As with the editor there's a small blot on Real's copy book, namely the exclusion of the 24-bit options from the beginner's version.

## What's new?

If we start at the editor screen, the most obvious difference is the bank of prim selection buttons which make mod-

elling blisteringly fast. Hidden in the bank of buttons are a few new faces such as the smooth lathe tool which you can see in action along with the other new prim controls in the example.

There are two new tools in addition to the lathe. The first is the polygon tool which allows you to create plain polygons of any shape. The second is the more complex polyhedron tool which creates a three dimensional object using polygons as components.

The final new face is the conical tube which creates objects consisting of spheres of varying sizes joined by smooth tubes with either expanding or contracting radii. Ideal for fingers, limbs and general body building.

The next big change comes in the material device which has a whole range of new features, such as turbidity which defines the density of the material itself. So, for example, it's possible to combine turbidity with the option to smooth the material's boundaries to create a cloud of fog.

Specularity control has been added plus some handy percentage displays and a material view option. Animators will no doubt rave about the inclusion of textured animation support which makes it possible to create chameleon-



Real's bump mapping in action. Created in seconds in the all new material device.



like effects on objects within animations – a big improvement.

Mapping, as the sign shows, is big business and as a result, four new options have been added. The first is clip mapping which cuts surfaces. So if, say, a texture is mapped onto an object, any parts left uncovered are discarded.

Next there is the bumpmapping option which allows the surface of an object to be covered with countless bumps and abrasions of definable height. Once again the only real challenger in this area is Imagine, both programs being particularly talented at adding organic feel to the virtual world.

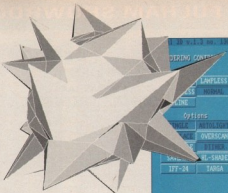
Lastly we have the standard colour and special mapping techniques. Colour mapping simply defines object colour, whereas special mapping allows you to create shiny elements on a matt surface by relating various colours within it to either transparency or brilliance.

As well as these various modelling enhancements there are some new animation additions such as direction control and the new edit orbit option. Throughout the program various additions have appeared, creases have been ironed out and keyboard short-cuts applied. In short, Real's new look is more a complete facelift than a simple nose job.

## And finally

This article has been billed as a championship match between the two contenders for the ray tracing crown, so I suppose there has to be a decision. But I'm merely the referee so I'm afraid the final points decision is down to you.

Having said that there are few points

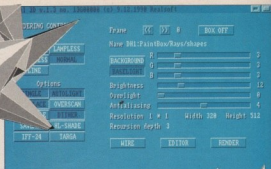


worth remembering. Firstly, Real comes in various formats with the Turbo version the only one to have a full complement of abilities. Imagine, however, is complete whether run on a standard 68000 or a Ferrari-like 68030 or 68020. This is definitely Imagine's biggest punch.

Real in any of its forms is a dream to use, with everything close at hand and all its talents merely a mouse click away. The sheer speed and ease of use are marvellous and show all its competitors to be sadly lacking in the user friendly department.

As far as finished products are concerned there's little to choose between the two, with perhaps Real scoring on image quality and Imagine hitting back with its superb, if slightly complex, animation options.

Imagine claims to have thrown off the chains of Turbo Silver's complexity. I don't agree, but with practice the results speak for themselves. Real on the other hand is a dream to use but a nightmare to pay for and Activa's tactics for potential upgrades seem a little below the belt. Who wins the fight and your money is up to you...



Real's all new rendering screen, with a whole range of extra options

## Product information

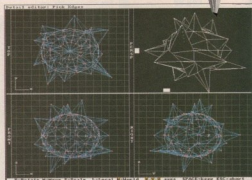
Imagine £225.25 incl vat

Real 1.3 Beginners version £142.00 incl vat

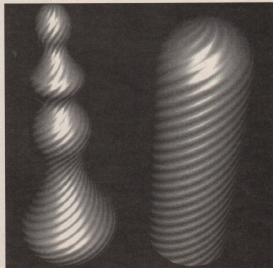
Real 1.3 Turbo version £409.00 incl vat

Supplier: Alternative Image  
6 Lethal road  
Aylestone  
Leicester  
LE2 7QB

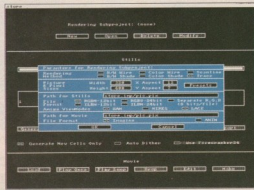
Tel: 0533 440041  
Fax: 0533 440650



The creation of Imagine's spiky sphere, all done in a matter of seconds thanks to the flexibility of point selection



A commercial example of Real's gray scale format in action



Selecting the format for your masterpiece is simple but you must be sure all the component parts are where they should be





Girl Back by  
C P McGowan

# on the Gallery

**Y**ou can't fail to appreciate the influence of ray tracing on each of this month's gallery selections. If you want to find out which software tools are used to create these beautiful artworks, take a look at the clash of the ray tracing giants elsewhere in this issue. But ray tracing is by no means all we're after, so keep those artistic submissions coming in.

As usual, this month's winner receives a full colour photographic image of their masterpiece, complete with frame, ready to hang on the wall of their choice!

Entrants in next month's Gallery have an added incentive. A brand new copy of SpectraColor, the only HAM paint and animation package capable of the 4096 colours will go to the winning artist. And if that little lot doesn't tempt you to put mouse to mat, nothing will...

**WINNER**



Sykler by Bjørn Malm



Norton by A R Meredith



Stalin by A R Meredith



Van Gogh



A selection of ray tracing classics from the nordic artisan Rikar Melom



**J**ust when you thought DeluxePaint was as good as it could get, Electronic Arts announces yet another upgrade. The program that revolutionized computer art is back in a new incarnation, sporting a much larger palette, new animation and drawing features, and an improved user interface.

If you're a serious Amiga artist, you probably own two paint programs – DeluxePaint for basic painting and work in high-resolution, and a second program such as DigiPaint 3 or Photon Paint for work in the 4096-colour HAM mode.

Many artists preferred to use DeluxePaint for most of their work, using the HAM programs only to add extra colours or special effects. Well, now's the time to sell that HAM paint program to a friend and use the cash to upgrade to DeluxePaint IV.

With support for HAM pictures and animations, as well as a suite of new special effects, DPaint IV is all the paint program any Amiga user will need.

## A Familiar (Inter)Face

At first glance, DPaint IV doesn't look any different from earlier versions of the program. However, upon closer examination, you'll notice it now has a 3-D look and feel; the flat, beige icons of DPaint III have been replaced by embossed grey equivalents. While the interface is deceptively familiar, the underlying program has received a major facelift.

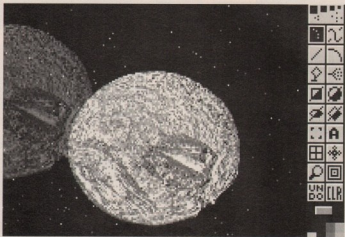
The first indication that this isn't plain old DPaint any more comes when you first launch the program, when you're asked which resolution you wish to work in. Along with the familiar choices of 2-64 colours, another gadget offers you the opportunity to work in HAM mode.

Another obvious addition is the selectable degree of overscan – you can choose STD overscan (704x566 in Hi-Res), or MAX overscan for video

# Deluxe Paint

No matter how you slice it, DeluxePaint is much better with HAM, as Simon Walker discovered when he donned his artist's smock to check out version IV

goes  
fourth



A new embossed look for DPaint tool box

applications (736x580). All the other choices are carried over from DPaint III, including the ability to work in PAL or NTSC resolutions, and to load only portions of the program, saving memory on Amigas without much ram.

## An Order of HAM, Please

The most exciting addition to DPaint IV is support for HAM mode. No longer do you have to carefully pick, choose and tweak your palette colours. The Amiga's entire 4096-colour palette is available for your picture.

If you haven't worked with HAM mode before, you'll be in for a mild surprise when you add the 17th colour to your picture. In HAM (Hold And Modify) mode, you have 16 base colours, and additional colours are created by modifying the base colours.

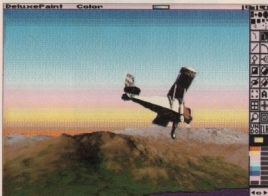
Each pixel can be modified in only one of the six bit-planes used in HAM mode, so it can take up to three pixels of intermediate colour across the screen to reach a target colour. You may draw what you hope will be an orange pixel and end up with a grey one instead. This can cause the effect known as "HAM fringing" that you see in some digitized pictures.

By carefully choosing the initial 16 colours and avoiding single-pixel-wide vertical lines, you should be able to avoid most fringing problems.

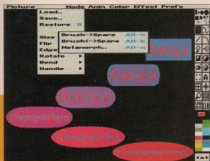
Working with all the extra colours available in HAM mode is made simple by DPaint's completely revamped palette system. In 2-64 colour graphics modes, you choose colours from a palette box in the lower left corner of the screen, just as in earlier versions.

In HAM mode, you're initially presented with a box containing the 16 base colours. Below this box is a gadget that allows you to scroll through an additional 15 sets of 16 colours, presenting you with a total of 256 readily-available colour choices. (This palette system is based on the one used in the VGA DeluxePaint Animation on MS-DOS machines, which explains the choice of 256 colours.)

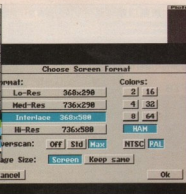
If you need to change a colour, or create a new one, hit P to bring up the palette requester. Instead of the familiar onscreen box from earlier versions of DPaint, though, you're



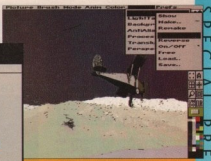
DPaint has never looked so colourful



Difficult to show in print, but DPaint IV has a powerful metamorph facility



Pick a mode, any mode



Improved stencils

instead greeted by a short, wide palette requester that pops up at the bottom of the screen.

At the top of this palette requester are 32 colour boxes, 16 of which are defined when you first enter HAM mode. Any of these 16 can be changed using the familiar RGB and HSV sliders, or you can choose one of the 16 empty boxes and define a colour for it.

A set of scroll arrows next to the palette requester allow you move through the other 256 definable colours. The palette requester still has the familiar DPaint III functions, such as spread, exchange and copy. Colour cycling and range functions have been moved to the new Ranges requester.

Next to the slider gadgets you'll notice a large, rectangular box. You now have a new way to create colours – you can mix them just as an artist does with a liquid paint palette. Just grab a brush and a colour and stamp a few swatches of "paint" in the mixer area. Then change to a new colour and smear it into the mixer area.

As the two colours meet, you'll notice they begin to blend, creating



Set your ranges in style

new shades from the mixture. Any number of colours can be mixed in this area. When you've created the shade you want, just click in an empty palette box (or one you're redefining), click the Pick gadget and click your new colour. That colour is now available to paint with.

You aren't limited to 256 colours, either. Once a colour has been drawn on a HAM screen, you can change that colour in the palette box without affecting the onscreen colours (except for the 16 base palette colours). So you can paint a picture using 256 colours, then go back and create additional shades for highlighting or 3-D effects.

Handling huge palettes of colour is made easier with the Colour Set Load/Save menu choices. You can save an entire 256 colour palette, or

just select sections of the palette to store in a file. These can then be loaded for use in another picture, or appended to your current palette. You might save a set of greens useful for landscapes in one Colour Set file, for example, and a set of blues used to draw sky scenery in another.

## Home on the Range

DeluxePaint's Range system, used in colour cycling and multi-colour flood fills, has been completely revamped. The new setup is easier to use, yet much more flexible.

When you choose Ranges from the new Color menu, a quarter-height screen pops up at the bottom of your current screen. Using this requester, you can define up to eight different colour ranges for fills and colour

cycling. A slider bar lets you choose which of the eight ranges you wish to work with. Next to that is a bar which allows you to add up to 32 colours to the range you're working with. Just click once on a colour in the palette at the bottom of the screen, then click in one of the 32 slots on the colour bar.

If you leave a few empty slots between each colour, DPaint will automatically generate the intermediate shades between the two colours. If you're working in HAM mode, the actual intermediate shades will be used when you use the range in your drawing for flood fills.

If you're using 2-64 colours, the program will either between the colours, like in earlier versions. DPaint IV now gives you a choice of two styles of dithering: Random, as in earlier version of DPaint, or Ordered, which gives you a more regular, consistent dithering style.

Random looks better when creating "natural" scenes, such as a flood-filled sky, but Ordered dithering tends to look better when drawing artificial objects, such as the silver skin of a jet aircraft.

Colour cycling is more flexible now, as the colours you choose to cycle no longer need to be adjacent in the palette box.

You can choose to cycle colours 4, 5, 10, and 23, for instance. A feature unique to DPaint IV is the ability to cycle colours in HAM mode, although you may only cycle the 16 primary palette colours. Cycling rate, as well as the degree of dithering, are easily set using slider gadgets.

## Khafka Would Be Proud

If I had to single one DPaint IV feature out as being the most fun to play with, it's the new Metamorph option under the Brush menu. With this, you can literally change one bitmapped brush into another over a series of frames.

If you're familiar with the "tweening" capabilities in some structured-graphics animation programs, imagine being able to make such transformations with a bitmapped brush. Now, instead of just changing a circle into a square, you can change Margaret Thatcher into Ronald Reagan!

Metamorph couldn't be easier to use. Just pick up a brush from your picture and copy it to DPaint IV's new Spare Brush Buffer. Then pick up the brush that you want the first brush to change into and select Metamorph from the Brush/Spare menu. Type in the number of frames you want the transformation to take place over, and DPaint will begin the alteration.

A minute or so later (depending on the size of the brush and the number of frames you've chosen), DPaint will have

created an animbrush that cycles from your first brush to the second, slowly changing over a series of frames.

You can create some spectacular effects with this feature. One of the neatest I found was changing one word into another. For instance, you could create one brush with the word "Drugs" in blue. Then a second containing the words "Just say NO!" in red. Tell it to metamorph over a period of 10 frames and the result, once you've stamped the brush down into an animation, is a spectacular, eye catching effect – the first word appears, then begins to break up into chunks of pixels which swirl around the screen and gradually begin to change to a reddish colour, eventually reforming into the second set of words.

It's a lot more exciting than a static title screen, wouldn't you say? Of course, you can also create fun effects, such as taking a digitized picture of Betty Boo and morphing it into the words "Do!n! the Do.o."

## A Transparent Play

The folks at EA could have stopped at adding HAM graphics to DPaint IV and I doubt anyone would have complained. However, developers Lee Taray and Steve Shaw (who built DPaint IV from Dan Silva's original DPaint III code) didn't call a halt there.

They also added a number of new painting modes that allow you to take full advantage of DPaint IV's enormous palette.

The feature with the biggest "this is cool" value is Translucency. With this turned on, you can set a degree of transparency for your current custom or built-in brush, ranging from 0 to 100 per cent. At a setting of about 50 per cent, you can create nice effects such as semi-transparent titles stamped on your artwork.

At high translucency settings, such as 90%, you can stamp down nearly transparent brushes for a ghostly, almost subliminal effect. It's also useful for simulating a watercolour effect in freehand drawing.

You can alter colours already on the screen as well. Under the Process menu are adjustments for altering Hue, Tint, and Value. By turning one of these modes on, you can colorize a picture, shade it in or lighten up darker areas, all without losing any detail.

There's a new painting mode available as well. Along with old favourites like Colour, Smear, Cycle, and Smooth (which incidentally works wonders in HAM mode), you can now choose Mix.

In this mode, your brush acts just like it would in the Palette requester's mixer - you can blend colours onscreen to create new ones, but you have the entire screen at your disposal. You can use this with the Pick option to create new colours, or actually integrate the mixing into your picture, to create smooth demarcations between colour changes.

## Let There Be Light

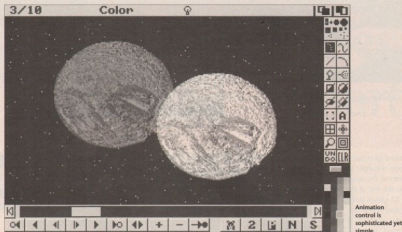
Like its predecessor, DPaint IV supports both full-screen animation and animbrushes. Now that the program will read and write HAM animations, though, it's much more useful as a post-production tool for use with other animation packages. (How many of us were using ray-tracers to create 32-colour animations?)

Moving through your animation is simplified with the addition of an Animation Control Panel, which sits at the bottom of the screen and can be toggled on or off.

If you've ever used a VCR remote-control, you have all the knowledge



Getting the right colour couldn't be easier



you need to operate this panel. Buttons allow you to move to the first or last frame of the animation, move forward or backward through it, play it, and add and delete frames. Another set of gadgets to the right of the movement buttons controls DPaint IV's new LightTable feature.

LightTable is a feature similar to the onscreen capability found in Disney's The Animation Studio. With the LightTable on, you see a dimmed representation of preceding or following frames overlaid on your picture, allowing you to see objects' movement in each frame, and to use moving objects as reference points when placing new objects in your animation.

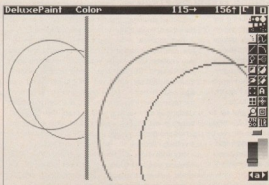
You can choose to see ghosted representations of the previous frame, the frame before that, or the next frame; or turn them all on at once to get a better perception of your object's

direction of motion. Disney's animation program supports the onscreen capability only in a black and white mode, while DPaint IV supports it in full colour. This is a mixed blessing, though.

The LightTable is most effective when your picture has a clean background, and where you have a number of darker shades in your picture that you're not using.

If you've got a very busy picture with a digitized background, using all the colours available, you may not be able to make out much of the previous frame. I got the best results working in 32 or 64 colours, using lighter shades.

You can always use the LightTable to create your animated objects on a black screen, then pick up the entire screen as an animbrush and stamp it down on a more complex background later.



DPaint's Light table, similar to Disney's onscreen

## Wrapping Up

There are many more new or improved features in DPaint IV, too many to go into in a brief magazine review. Many older features just work better.

For instance, there are a number of new options for wrapping objects onto brushes. You can now choose a direction for a light source, for instance, when mapping a picture onto a circle. With this option you can create a true 3-D sphere effect.

Also, the Stencil feature has been much improved. If you're like me, you never used it much because of the complexity of choosing only certain colours to represent the stencil.

Now, you can just paint the stencil on the screen, using any of the painting tools. Create impressive effects using circles and polygons as stencils, or just use the filled freehand drawing tool to mark off a certain area to be "paint-proof".

Electronic Arts has done an incredible job with DeluxePaint IV. New features abound, and old features are improved. There's not much to complain about, save perhaps that some operations in HAM mode are a bit slow on a stock Amiga.

DeluxePaint IV once again continues EA's tradition of breaking new ground in Amiga paint programs. About the only feature I can see adding now would be support for the new 24-bit graphics boards now appearing for the Amiga.

DeluxePaint IV has the features to satisfy even the most demanding Amiga artists - at least, until the release of DeluxePaint V.

When I first played one of the games in Scetlander's new educational package I must confess I didn't find it very exciting. But if you can put yourself in the place of the under-fives (and in my case that's only eight years back) the games take on a whole new significance.

In case you haven't made Maggie's acquaintance, have you ever seen the cartoon *The Family Ness*? Well, Maggie looks very similar to one of *The Family Ness*. She is green, wears a tartan hat and has a body which goes up and down like a rollercoaster.

Scetlander claim that everyone loves the way Maggie speaks. However, this seems strange because although Maggie speaks clearly, she doesn't use her voice very often.

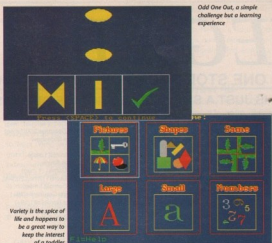
### The games

The three games are *Two of a Kind*, *Odd One Out* and *Forget-me-not*. A clock and calendar are also included in the package.

After selecting any of the three games you are presented with an options screen. Here you choose your method of play by selecting either *Pictures*, *Shapes*, *Same* (in which each picture is the same but in a different position) *Large* (capital letters) *Small* (small letters) or *Numbers*.

In *Two of a Kind* a picture is displayed at the top of the screen. You then select which one out of the four in a box at the bottom of the screen is the same. To select, press the spacebar when the pointing hand, which moves of its own accord, is pointing at your desired answer.

If you are correct a tick will appear in the box. If you're wrong a cross will appear and you can try again. And if



*Variety is the spice of life and happens to be a great way to keep the interest of a toddler*

*Odd One Out, a simple challenge but a learning experience*

# Mix and Match with Maggie

you're still struggling after the third attempt, Maggie will help you.

When you have chosen your method of gameplay for *Odd One Out* from the

options screen, you have to identify the odd picture, shape, letter or number. To select, press the spacebar when the pointer is at the right answer.

To play *Forget-me-not* you again choose what you want to play with from the options screen. In this game pictures, shapes, letters and numbers are flashed onscreen and the correct match must be identified. This game, as the name suggests, calls upon and hopefully develops memory skills.

example, could be used more often. Maggie is quite an appealing character and she, and the ease with which the program can be configured to suit any tiny user – including those with learning difficulties – are two of the best features.

Finally, the way in which scoring is handled is good for young children. Smiling faces appear for correct answers and unhappy faces for incorrect ones.

## Configuration

An important feature of *Mix and Match* with Maggie is the ease with which it can be configured by an adult to suit tiny students of differing abilities.

There are eight different options which can be saved. These are:

- Sound on/off** Determines whether the various sound effects used throughout the games are to be played.
- Scan speeds (1-10)** Sets how quickly the hand scans the available items as detailed below
- Seconds per move** Choose from 0.5 to four seconds with half a second between each choice.
- No of questions (1-10)** Determines how many questions are asked during each game.
- No of Boxes (2-4)** Lets you set how many boxes containing alternative answers appear at the bottom of the screen.
- Time Display (1-10)** Determines how long (in seconds) the target item remains on screen in *Forget-me-not*.
- No of attempts (1-10)** Sets how many incorrect attempts the user has before a hint is given by Maggie.
- Record use on/off** Determines whether students' results should be recorded or not.
- Hide this section** Determines whether or not the access instructions on the control screen are displayed.

## Clock and calendar

A 12 or 24-hour clock and a calendar are displayed on your screen. Pressing the tab key alternates between 12 and 24-hour modes. The calendar shows the month and date.

There's nothing else to the clock and calendar and it does seem rather a wasted opportunity to introduce some kind of educational activity relating to dates and times.

## Mix or match?

This educational pack is quite reasonable although some things could be improved. The games need to be made just that little bit more interesting.

Music, and Maggie's voice, for

Scetlander's pre-reading age educational program deals with recognition, discrimination and memory. Sarah Williams has been matching shapes and spotting the odd-ones-out

**Mix and Match with Maggie is a product of Scetlander Limited,**  
74 Victoria Crescent Road,  
Glasgow, G12 9RN  
Tel: 041-357 1659.  
Availability: Now  
Price: £24.99

### Ease of use

### Implementation

### Value for money

### Overall

# MEGA ITZ!

## THE ONE STOP SHOP FOR AMIGA PD SOFTWARE

### THIS IS JUST A SMALL SELECTION OF OUR VAST LIBRARY

#### UTILITIES

PDU 10 Word Processing/Databasing  
 PDU 16 Air Tunnel Simulation  
 PDU 28 Fish110 A86K Assembler  
 PDU 28 Fish114 C Docs  
 PDU 28 Fish133 Console Handler  
 PDU 27 Fish136 Create own puzzles  
 PDU 29 Fish 140/141 SBRol2 2 disks  
 PDU 31 Fish 143 RIM Database  
 PDU 32 Fish144 Analytic spreadsheet  
 PDU 38 Fish185 Official IBM IFP disk  
 PDU 43 Fish203 Assembler & C ag  
 PDU 44 Fish215 Mandelbrot V2.0  
 PDU 45 Fish210 Scientific calculator  
 PDU 46 Fish213 Icons(300 in 8 colors)  
 PDU 51 Fish219 Astronomy program  
 PDU 52 Fish252 A-Z Text Editor  
 PDU 60 Fish 237 CLPrint  
 PDU 70 Fish 193 Keymap Editor  
 PDU 72 SDV V1.06 The ultimate disk util.  
 PDU 74 C-Manual  
 PDU 78 File Archiver  
 PDU 80 Fonts and Surfaces  
 PDU 81 Disksave 1.3  
 PDU 82 Scale Wordlist  
 PDU 88 Calicos Demomaker  
 PDU 99 Ham Radio util(5 disks)  
 PDU 101 Menu-Maker  
 PDU 102 Label designer  
 PDU 103 Icon-Maker  
 PDU 104 Icon-Mania  
 PDU 105 Crossword Creator  
 PDU 118 Various CLJLits  
 PDU 146 Grocery-Video list maker  
 PDU 149 Icon Fun  
 PDU 151 Fieldsk disk repainer  
 PDU 164 Games Music Creator  
 PDU 166 Vaccine-Booster(Virus killer)  
 PDU 169 QuickBase Database  
 PDU 171 Fish215 Draw-map  
 PDU 175 Fish288 Plotlands 2D  
 PDU 185 ANC22 (Excellent util)  
 PDU 186 Falcon Bootblock Creator  
 PDU 189 Bootblock Copier  
 PDU 194 Pman Virus Killer  
 PDU 198 Synchro Packer V4.6  
 PDU 200 Virus Killer Pro V2.0  
 PDU 207 PerfectSound V1.93  
 PDU 257 Fish249 MED  
 PDU 262 MED Modules

#### DEMOS

PDD 1 Anarchy Demo  
 PDD 3 Cult Demosdisk  
 PDD 4 Deathstar Megademo(2 disks)  
 PDD 7 Elvira Demo  
 PDD 14 RAF Megademo(2 disks)  
 PDD 16 Robocop Demo  
 PDD 17 SAE Demo#12  
 PDD 18 SAE Demo#19  
 PDD 19 SAE Demo#21  
 PDD 20 SAE Demo#25  
 PDD 21 SAE Demo#32

PDD 31 Anarchy 'Och is obscene III'  
 PDD 51 Hacktrick#1 Arsewipe  
 PDD 52 Hacktrick#2 Smashing day out  
 PDD 55 Kellers Megademo(8/2 disks)  
 PDD 60 NitroAK Demos#22  
 PDD 62 NitroAK Demos#2  
 PDD 70 Rebels Megademo  
 PDD 71 Rad Sector Demo  
 PDD 72 Rad Sector Demosdisk#4  
 PDD 73 SAE Demos#23  
 PDD 74 SAE Demos#36  
 PDD 75 Scopes Demos  
 PDD 76 Scopes Megademo  
 PDD 80 Trilogy Demos#4  
 PDD 91 Trilogy Megademo#1  
 PDD 92 TWDemo-Virus killer  
 PDD 94 Vortex Megademo  
 PDD 96 Magnetic Fields Demos#36  
 PDD 97 Predators Megademo(2 disks)  
 PDD 98 Samras Megademo  
 PDD 107 Budbrain 1 (2 disks)  
 PDD 115 Magnetic Fields Demos#40  
 PDD 116 Magnetic Fields Demos#41  
 PDD 130 Chubby Brown  
 PDD 131 Critics Demo  
 PDD 132 Giants Megademo(2 disks)  
 PDD 134 Magnetic Fields Demos#45  
 PDD 138 Page One Demo#1  
 PDD 139 Page One Demo#2  
 PDD 140 Page One Demo#3  
 PDD 141 Page One Demo#4  
 PDD 145 SAE Demo#31  
 PDD 152 Flash 'No Brain No Pain'(2)  
 PDD 153 Billy Connolly Demo(2 disks)  
 PDD 154 Hacktrick 'Flux'  
 PDD 165 SAE Demos#35  
 PDD 166 SAE Demos#39  
 PDD 177 Budbrain II  
 PDD 179 Critics Total Destruction  
 PDD 180 DMOB Vectordemo  
 PDD 186 Flash Demos#2  
 PDD 209 Rutter Demosdisk  
 PDD 212 Space Pack#32

#### ANIMATION

PDA 9 Knight Animation(1 meg)  
 PDA 12 Agator Star Trek Anim 2  
 PDA 13 Agator Star Trek Anim 17  
 PDA 14 Pugs in Space  
 PDA 15 Newswaker Demo  
 PDA 18 Miller Lita Advert  
 PDA 21 Nude Girls Anim  
 PDA 34 Basketball Anim  
 PDA 35 BFO SideSHOW(18+)  
 PDA 36 BFO SideSHOW(12+)  
 PDA 37 Busy Bee Anim  
 PDA 41 Digviewer Sideshow  
 PDA 42 Dragons Lar Demo  
 PDA 45 French Horn(1 meg)  
 PDA 45 Monocycle & Soccer(1 meg)  
 PDA 47 Holden Pils Advert  
 PDA 48 Madonna Jigger Anim  
 PDA 49 Mayfair Vol 2(30+18+)  
 PDA 50 Mega Clean Show V1.7

PDA 54 NASA Graphics  
 PDA 56 Newtek Demos#1(2/1 meg)  
 PDA 57 Newtek Demos#3(2/1 meg)  
 PDA 58 Paradise Sideshow  
 PDA 61 Sabrina  
 PDA 63 Space Animals(1 meg)  
 PDA 65 Star Trek Anim  
 PDA 68 Walker Demo#1 (1 meg)  
 PDA 69 Walker Demo#1 (2 meg, 2 disks)  
 PDA 70 Walker Demo#2 (1 meg)  
 PDA 73 Westcott Cracker#4(18+)  
 PDA 74 Bodekins Bordello(18+)  
 PDA 75 Bodekins Bordello#4(18+)  
 PDA 76 Playboy(18+)  
 PDA 77 Sam Fox(18+)  
 PDA 78 Unpop#1(18+)  
 PDA 79 The Final Escape#1(18+)  
 PDA 80 Walker Demo 2(2 meg, 2 disks)  
 PDA 81 Ray Trace Art.DBW Render util  
 PDA 86 Unpop#4(18+)  
 PDA 88 Bodekins Bordello#3(18+)  
 PDA 90 Bunsen Burner-Jet Fighter anim  
 PDA 92 D.Landers Sci-Fi Show#2  
 PDA 93 D.Landers Sci-Fi Show#2  
 PDA 95 Magician Jigger Anim  
 PDA 97 Mike Tyson Knockout disk  
 PDA 106 Back to the Future II anim  
 PDA 108 Adams Family  
 PDA 110 Bruce Lee Enter the Dragon  
 PDA 111 Bruce Lee Sideshow  
 PDA 112 Dragons Lair II Demo  
 PDA 116 Terminator

#### MUSIC

PDM 2 Music Invasion I  
 PDM 3 Music Invasion II  
 PDM 4 Music Invasion III(2 disks)  
 PDM 5 MTElectric Rock(2 disks)  
 PDM 6 Winners song 2(2 disks)  
 PDM 9 Ride on time & Balance  
 PDM 19 Bad-M-Jackson  
 PDM 20 Bar Demo  
 PDM 27 DMOB Megamusic III  
 PDM 28 Chances Music III  
 PDM 30 Digital Concert II  
 PDM 31 Digital Concert III  
 PDM 33 Halloween Follow the Sign(2)  
 PDM 35 Think were alone now-Tiffany  
 PDM 36 Land of Confusion-Guns  
 PDM 38 Miami Vice Theme (4 disks)  
 PDM 40 MFI Vangelis Demo  
 PDM 65 Digital Concert IV  
 PDM 71 Noiseplayer V2.40  
 PDM 72 Popeye meets the Beachboys  
 PDM 80 Digital Concert VI  
 PDM 82 Freddy Kruger  
 PDM 83 Kellers Jukebox  
 PDM 84 Madonna-Hanky panky  
 PDM 85 Miami Vice-Croquets Theme  
 PDM 87 RIP Eruption  
 PDM 88 Slab Music  
 PDM 91 100 Most Remembered C64 tunes  
 PDM 95 Hi-Fi Demo

PDM 104 Bass#5 Power Remix  
 PDM 105 Bass#6 Sydney Youngblood  
 PDM 106 Betty Boo  
 PDM 109 Depeche Mode  
 PDM 110 DMOB Music  
 PDM 111 DMOB Music II  
 PDM 112 DMOB Music IV(2 disks)  
 PDM 117 Flash Gordon (2 disks)  
 PDM 118 Hacktrick 'Loads money'  
 PDM 120 Laurel & Hardy (2 disks)  
 PDM 125 Mr Food (2 disks)  
 PDM 128 NASP V2.0  
 PDM 131 Peshop Boys Ram#1  
 PDM 132 Peshop Boys Ram#2  
 PDM 142 The Games Chart III

#### GAMES

PGD 1 Star Trek-Final Frontier(2 disks)  
 PGD 2 Star Trek (3 disks, 2 drives)  
 PGD 5 Card & Board Games  
 PGD 16 Marble Slide  
 PGD 19 Destination Moonbase  
 PGD 21 Boing the Game (2 disks)  
 PGD 26 Treasure Search  
 PGD 31 Moria  
 PGD 32 Legend of Farghill  
 PGD 33 Arcadia(Breakout style game)  
 PGD 34 Dynamic Disk  
 PGD 35 Par II  
 PGD 36 Snake & ladders/Reversi  
 PGD 37 Super Quiz

#### CLIP ART

There is a total of 10 disks in the clip art range. All are in IFF format & are ideal for DTP. There are loads of images to choose from, ranging from fancy borders to special occasions from people to animals etc etc.

#### WE ALSO STOCK

**AMOS DISKS**  
 Various demoscenic and games  
**MAGAZINE DISKS**  
 Amiga Format & Computing  
**DOCUMENT DISKS**  
 Game Hints/Solutions etc etc

#### DISK PRICES

1-9.....£1.50  
 10-19.....£1.25  
 20+.....£1.00

**FREE CATALOGUE ON DISK**  
**FREE PAP ON EVERY ORDER**

#### UK ONLY

Please add 25p per disk for Europe 50p per disk for World  
 WE ACCEPT ALL MAJOR CREDIT CARDS  
 PLEASE MAKE CHEQUES PAYABLE TO:  
 PD DIRECT

☆☆ PACK 1 ☆☆	☆☆ PACK 2 ☆☆	☆☆ PACK 3 ☆☆	☆☆ PACK 4 ☆☆
<b>Home Business Pack</b> This 8 disk pack contains: Spreadsheet Word Processor Amiga Spell Memo-pad Inventory Database etc etc <b>A must for home accounts!</b> <b>£10-00 incl. 10 cap. box.</b>	<b>Demo Pack (10 disk pack)</b> Hudson (2 disks), & 2 Magnetic Fields #41 Kellers Megademo(2 disks) Pugs in Space Filled the Fish Scopes Megademo <b>A great starter pack</b> <b>£11-00 incl. 10 cap. box.</b>	<b>Music Pack (10 disk pack)</b> Halloween (2 disks) Cryptic Glidescope II Beasmasters III J.M. Jams Noiseplayer V2.4 + Sample(2) Freddy Kruger Croquets Theme 100 C64 tunes <b>£11-00 incl. 10 cap. box</b>	<b>Adult pack (10 disk pack)</b> Sabrina, Sam Fox (2 disks) Bodekins Bordello #2 Bodekins Bordello #3 Bodekins Bordello #10 Bodekins Movies Wood: Coast Cracker BFO #1, BFO #2 Utopia #1 <b>£11-00 incl. 10 cap. box</b>

## PD DIRECT

HOW TO ORDER:

0782 208228

PD DIRECT DET AMC 8

UNIT 3

RAILWAY ENT. CENTRE

SHELTON

STOKE-ON-TRENT

STAFFS.S74-758

FAX 0782 281506

What was once the Holy Grail in computer graphics is now a common feature in most 3D programs on the market.

Ray tracing produces realistic images through the accurate portrayal of lighting, materials and shadows, and at present a variety of packages exist on the Amiga which offer users a multitude of modelling functions and rendering possibilities.

Current raves are Real3D v1.3 and Imagine, both madly exploiting the Amiga, and producing results that would even make your Silicon Graphics-based Alias or Wavefront expert look tall. All very well you might say, but why bother with these incredibly expensive systems?

The difference is speed! All major top-end animation systems run on very powerful SPARC or Transputer-based hardware which can leave the Amiga standing.

As a basic machine – that is, just 68000-based – the Amiga can be highly productive and perform tasks such as wordprocessing and database handling very well. General graphics applications such as paint programs and 2D animation usually present no problem, but when the notion of rendering awe-inspiring epics such as checkerboard balls on mirrored landscapes becomes an obsession – watch out!

What you need to do this kind of thing is an accelerator card. It's a wonderful piece of silicon which allows you to render a complex scene in the time it takes to feed the cat and make a cup of tea. We are talking 68030-based cards with a maths co-processor as standard and at least 4 megs of 32-bit ram. So let's look at what's available.

In the left corner we have Draw 4D, new from the States, and in the right corner, Videoscape3D, ProMotion and Modeler3D – a set of software that gives you modelling, animation, and rendering all in the time it takes to say "The Unbearable Lightness of Being".

The first decent 3D animation software to grace the Amiga was Videoscape 3D. What this program offered seemed exciting and highly

desirable and anyone with more than a passing interest in the world of 3D wanted it.

Version 1 of V3D was unusual to say the least. There was no sign of any halfway decent object editor – as a matter of fact, most if not all of the object building was achieved outside the main program in separate CLI-based programs called OCT and EGG.

All your objects had to be worked out on graph paper and meticulously realised in all dimensions for the thing to work. Very, very hit and miss and unreliable. Since then it has been extensively updated and modified by the author, Allen Hastings, and released as version 2.0.

This is how the program remains now that Hastings is concentrating entirely on the production and develop-

ment of Lightwave 3D. This latest effort is a far superior piece of software which is bundled with NewTek's VideoToaster and offers high quality rendering and an intuitive modelling and animation environment.

## Draw 4D

Before the appearance of Draw 4D, you had little option but to use flat 2D titles and headings in programs such as Pro Page, Pagestream and Pro Draw. OK, you could produce titles using perspective and warp effects but they still didn't quite jump out of the page and smack you in the eye. Draw 4D allows you to reach out and grab your reader.

It's a full 3D design package, with tools and facilities very much like those offered by the stock 3D programs such

as Sculpt Animate 4D. When you start it you're presented with your 3D universe slowly rotating in space. It's up to you to fill it with objects.

Draw 4D, in common with most other 3D modelling programs uses points or vertices and vectors or edges to make up 3D objects. For example, a cube is simply eight points in 3D space connected by 12 edges.

The most basic drawing tool that you will use in Draw 4D is the freehand tool. This allows you to draw a shape or polygon in any of the three dimensions, which are labelled x, y and z. You start with a single line of two points and then by adding points you create your shape or polygon. So, to create a square you would have to add two points to your straight line.

Once you have your simple object

3D animation without the expense of ray tracing.  
Henri "mad dog" Bujko and sidekick Yuri explain how  
to create a wibbly wobbly world of your own

# 3D modelling made easy



Draw 4D turns wireframe into finished image in seconds. Why ray trace when it can be so easy?

## AMIGA BANDITS AMIGO'S WITH AMIGA'S PUBLIC DOMAIN LIBRARY

AMIGA BANDITS PDL (Dept AMC)  
Ground Floor, 28 Lemsford Road, St Albans,  
Herts AL1 3PB. Tel: 0727 836049

No Minimum Order - Still post FREE!  
Order 13-12 Disks: Free Slipcase Library Case  
Order 13-14 Disks: Free Mouse House  
Order 15-17 Disks: 2 Free Slipcase Cases  
Order 18-19 Disks: 2 Free Mouse Mats  
Order 20+ Disks: Free Amiga Dustercover

U070 D-Copy Disk Copier  
U081 Ambase V3.76/Excellent database  
U090 Bank-N-Popular accounts utility  
U101 Valact/Powerful spreadsheet  
U081 Master Virus Kill/Kill 124 viruses  
U085 M-CAD/Computer Aided Design Utility  
G001 All new Star Trek Game/3 disks 512k or 1 Meg  
G017 Star Trek Game/3 disks 1Meg 2 Drives  
G021 Pacman 67 Pacman game  
G022 Boardgames completion/Classics - Cuedo  
etc.  
G023 Return to Earth/Space Trading Game  
G023 Drop 15 Levels of Arcade Action  
G026 Buzzard/Arcade quality Shoot em up  
A008 Star Trek Fleet Manoeuvre/Animation T.  
Richter  
A129 Bruce Lee/2 Super Animations (1 Meg)  
A075 Probe Sequence/Animation/Beam on TVI  
A254 Bushman V/Super/gy & music  
A260 Lost Ark Demo/Animation/Indy shoots  
swordman

A261 Fraction horror demo/Gory over 18 demo  
A262 Simpsons Demo/Sideshow & Art by  
H.A.C.L.  
M002 Groove is in the Heart/Delightful  
M025 Digital Content/16/24 megs of House  
G010 Sabrina - Boys, boys, boys/over 18!  
A279 Iraq Demo/USA vs Iraq  
A280 Vis Slideshow/Colour Picx from 1990  
Calendar  
G008 Calendar - The Early Days/Over 18!  
G042 2 Player Soccer League  
G041 Pseudo Cop/Robocop Game  
G044 Chess/Superb Quality - Lots of Features  
M023 800 States/Reviews  
M040 Simpsons - Go the Batman/D disks  
A267 Batman/Beat Bart Dub Remix & Sides  
A268 Simpsons Demo/Superb by Decoy  
A266 Fractal Fights/Counter type fight sequence  
G047 Teen Tit/Two player Tennis game  
G048 Seven Ties/Speedball type game  
G049 Eat Mine/Boulderball type game

FREE  
POSTAGE  
FIRST  
CLASS  
Cheques made payable  
to: ABPO

DISKS NOW  
**85p**

### FANTA-STICK#1 JOYSTICK

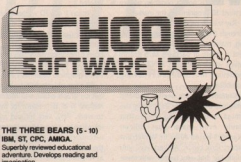
**£3.99**

POST  
FREE

#### FEATURES:

Pilot type grip handle. 3 Fire Buttons.  
Hand-held or table mount. Left or right  
hand play

\*Fanta-Stick is FREE with orders of 25 disks or more



### THE THREE BEARS (5 - 10) IBM, ST, CPC, AMIGA.

Superbly reviewed educational  
adventure. Develops reading and  
imagination.

### MAGIC MATHS (4 - 8) IBM, PCW, ST, AMIGA.

Highly rated primary maths  
programs. Selection of games.  
Add, Subtract.

### MATHS MANIA (8 - 12)

IBM, PCW, ST, AMIGA. "The best  
primary programs I have yet seen."  
Multiply, Divide, Maths Skills.

### BETTER SPELLING (8 - 18)

IBM, ST, PCW, AMIGA, CPC,  
BBC, CBM (D). Highly acclaimed  
tutor. Received excellent reviews.  
Challenging.

### BETTER MATHS (12 - 16 GCSE)

IBM, PCW, ST, AMIGA, CPC,  
CBM (D). Very comprehensive  
coverage of all the major aspects of  
maths for this age group. Excellent.

### JUNIOR TYPYST (4 - 10)

IBM, ST, AMIGA. Keyboard trainer  
which helps spelling.

### THE BEST IN EDUCATION

#### HOW TO ORDER

1. Post your order.
2. Fax your order.
3. Ring credit card number.
4. Ring for advice.
5. Ask your dealer to order.

Prices:  
IBM 514 or 315, ST & STE, AMIGA £22.95  
CPC, PCW, CBM (daisy) £16.95  
FREE CATALOGUE

ORDER DIRECT TO:  
School Software Ltd.,  
Taft Business Centre,  
Dominic Street, Limerick, Ireland.  
Tel: (UK) 010 353-61-45399.  
Fax Orders: 010 353-61-44315.  
Credit Card Hotline (U.K.):  
010 353-61-45399.  
Others Tel: 010 353-61-45399.

# ★ STAR PRINTING

## Amiga Colour Printing Service

### PRINTED T-SHIRTS

Small.....£3.99

Medium.....£4.99

Large.....£5.99

Please phone for extra large  
or small prices

**Pictures can  
be your own  
design sent  
to us on  
paper or on  
Amiga disk**

### PRINTED SWEAT SHIRTS

Small.....£7.99

Medium.....£8.99

Large.....£9.99

Again please phone for extra  
large or small prices

We offer a wide range of printed items -  
please send S.A.E for our booklet  
All prints are covered - so if the print fades  
or the cloth shrinks you will receive a full  
refund or replacement  
All prices include VAT but  
please add £1.99 for postage

★ **STAR PRINTING**  
67 Marion Street, Splott, Cardiff,  
South Glamorgan CF2 2ND.  
Tel/Fax: 0222 470463



▶ you can use Draw 4D's tools to manipulate it. There are eight main effects that you can use on your objects. These are – rotate, extrude, sweep, scale, clone, slant, stretch and mirror.

The extrude tool lets you pull a 2D shape through space to produce a 3D object – an extruded circle produces a cylinder.

Extrusion can be used to give a 3D effect to any object. A 2D headline looks much more interesting when extruded and viewed from a different angle.

The sweep tool lets you sweep an object around one of the three axes, so if you sweep half a circle around an axis you produce a sphere. It's useful for creating any object with a circular cross section.

The rest of the tools/effects are pretty obvious from their names. They can be combined to produce many other effects – with a little imagination, you should be able to create any object.

The user interface in the object modeller is very simple to use once you have grasped the basics. It allows you to view your work from any angle by rotating the three axes in a way very similar to the perspective editor in DPaint. However, you can only view your object from one direction at a time.

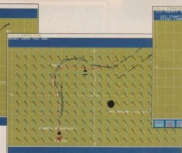
A tri-view editor, where you can view the object from all three axes onscreen at once might have been useful. Many other 3D programs use such displays to great effect. However, for the uninitiated, the single-view editor is less cluttered and can make Draw 4D a far less daunting program to use.

## Choosing fonts

Draw 4D is supplied with two fonts – Times and Block. Times needs no introduction, and Block is a sans serif font much like Helvetica. Each font is provided in two versions. The first version is for use as a 2D font and the second is for use when extruding.

If you extrude the 2D font any holes in the letters end up filled when you display them. These two fonts are roughly the same as supplied with Pro Draw. If you have used Pro Draw you will be well aware of the variety of things you can do with these typefaces.

If you want more fonts, Adspec – the



producers of Draw 4D – have allowed for font editing so that you can modify the existing fonts. In fact, all you do is load the existing letter into Draw 4D, modify it and then save it again. This process, as with any typeface design, is time-consuming but for a particular look it's very useful.

Having selected or created your typestyle you enter the text into a requester and click on OK. The text is rendered according to the spacing and placing options entered, and thankfully it appears onscreen fairly quickly. It cannot be edited after this point, so use your dictionary before rendering it.

In common with all the 3D programs on the Amiga, the more objects in your universe the slower the program redraws. The fonts used are particularly complex objects, so unless you are using a supercharged Amiga you will probably find yourself limited. You



Graphical representation of all the necessary numerics for the creation of a full-blown animation in Videospace



should have plenty of room for the average headline or title.

Before you import your work into a DTP application you need to render it. You start the process by positioning the editor's view of the object, then set the rendering options for the type of screen you want to produce.

The options are HAM, interlace, hires and overscan. The rendering screen displays the picture in full colour or grey-scale depending on the palette selected.

After the picture has been rendered for the first time access is possible to a further set of options for lighting. This requester is quite complex, but basically it allows you to set the brightness and position of the two available light sources.

It might sound like Draw 4D ray traces, but it does not. The lighting positions and brightnesses are just used to calculate the colour of each surface – no shadows or reflections appear.

At this point you can also load a background. The results produced are similar to those achieved using Videospace3D solid modelling mode as each surface is totally one colour.

Dithering can be used but is rather crude and applies to the whole of each surface.

When the image is ready it can be saved as either an IFF piccy or a Pro Draw clip. The IFF save capability is not terribly useful as the results produced are not on a par with other 3D programs which use anti-aliasing and better dithering techniques.

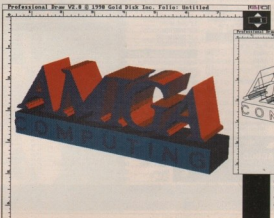
## Saving strength

Draw 4D's strength is in its ability to save your structured 3D object in a form that most DTP programs can read – it saves in Pro Draw clip format. Once in your DTP program it can be resized in any way and it will remain totally crisp.

When saving a Pro Draw clip you can specify colour, black and white, and outlined. I found in several cases that clips I stored did not load properly. Pro Draw seemed to get the layers wrong for some of them, but this was easily remedied.

Draw 4D also has the ability to animate, but I for one am bewildered as to why this feature is included. In my opinion it would have been far more

6...render a complex scene in the time it takes to feed the cat... 9



Pro Draw's view of the virtual world – simple, speedy, pretty and painless. What more could you want?



► productive for the programmers to have concentrated on the DTP aspect. The competition in the animation arena is far ahead of Draw 4D, and I can't see the likes of Sculpt Animate 4D or Real 3D being challenged. As for the competition in the 3D structured drawing market - there is none!

The animation facilities are fairly elementary. Each object onscreen is attached to a path through which it will move in the course of the animation. The objects can rotate on the way.

Objects may be placed into hierarchies so that you can animate quite complex combinations of objects, such as the human body. The example animations produced by Adspec are, to say the least, a tad un-awe-inspiring, although they might act as a guideline for a DPaint animation.

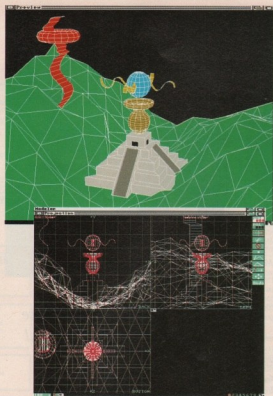
Draw 4D is an interesting program, the like of which the Amiga has not seen before. Its strengths are its easy to use 3D modelling environment, its ability to output 3D graphics in Pro Draw clip format and its simple rendering formats. However, there are certain areas which seem pointless in the arena that I think it is aimed at. If you want to produce 3D titles for DTP, there is simply no competition, but there won't be many of you out there...

## ProMotion bundle

If you are at all interested in buying Videoscape 3D, you will find that it comes bundled with another interesting package called ProMotion.

This software was devised specifically to be used as a staging environment for Videoscape. Many people felt that the process of producing animation settings files for Videoscape was tedious and complex and wanted an easier way of inputting the information that Videoscape required. ProMotion was supposedly designed to address these needs.

So, let's deal with ProMotion first.



The new familiar orthographic view adopted by many packages, and Modeler is no exception

It's an unusual program indeed, taking up the best part of 600K of precious memory and a pig to get working properly onto the hard disk.

The code and internal workings on the face of it seem to be complex and all the menus operate in hi-res interface - make sure you have a 1meg Fatter Agnus installed. But let's get to the point.

What we have here is software which

uses a graphical interface in order to plot the movement and positions of objects, lights and cameras. There's no modelling here, just pure staging of action, hence the tedious use of film directors' jargon in the way the program describes operations.

Once you have read the manual a few hundred times and also attempted the tutorials, you may feel ready to produce your own staged mini-epics.

OK, so what can you do to achieve this? Well, supposedly ProMotion gives you the ease of using the mouse to point and click on a graphical editing environment. So-called simple commands define motion paths for up to 25 objects plus the camera. Because the scene that you see is based on a top plan view of the staged action you should be able to keep track of all the elements in your animation.

Perhaps one of the most striking features of this program is the ability to assign effects such as wind, gravity and magnetism to one or all of the objects. All the effects can be defined in a variety of ways to take into account the strength and randomness of phenomena like magnetism. It is possible to combine the effects but it is unpredictable to estimate the outcome - very much as in real life.

All the parameters that are available

within the Videoscape 3D program have in ProMotion their equivalent represented by menu commands with point-and-click ease. For instance, light sources and their intensity, and focal length of camera lens can all be set and modified without typing in sequences of numbers.

Path generation within object motion can be visualised within the graphic screen. Also, the camera, objects and lights can be moved and placed around the screen.

When you are happy with the settings the program will save everything in a special format not dissimilar to Videoscape's own file structure. This can then be loaded into V3D and all the rendering will be handled by the program.

I could go on, but this is a program that's supposed to make Videoscape 3D easier to handle - and for me it doesn't.

## Modeler3D

What in all honesty should have been bundled with Videoscape3D is Aegis's Modeler3D. This fine software takes all the drudgery out of graph paper and presents you with a de facto standard tri-view screen, ready and waiting with a definable grid.

Modeler gives you a few primitives to be getting on with such as cube, sphere and tube - certainly not as many as equivalent modelling programs offer. But there are extensive tools such as spin, extrude and lathe which increase the variety of shapes which can be produced.

Useful features such as shearing, twisting and re-mapping of points help the user to define more organic-looking objects, but the ability to have spheres with perfectly defined apertures can present an almost impossible task to the software. Again, look to the new generation of 3D packages such as Real3D and imagine to achieve the impossible.

All objects are composed of polygons that are not limited to triangles. For instance, it is possible to make multi-sided polygons that take less rendering time than if they were constructed with just triangular faces.

A unique feature of the tri-view editor is a multi-layering system which allows the accurate placements of shapes within the constructed scene. Objects can be copied and deleted from successive layers, and sized and moved without interfering with other shapes within the database. This feature is very similar to CAD-type software.

The tri-view can be physically stretched and sized depending on the view to be tackled, and all scenes can be colour previewed, the representation being an outlined, unshaded picture. This screen can be sized and placed within the main tri-view to look at the whole effect. A mouse point-and-click feature makes viewing the scene at dif-



The finished masterpiece in all its glory



Videoscope's view of Modeler's creation

ferent angles a doddle. As with ProMotion, contained within Modeler is the ability to define motion and camera paths. You simply draw the paths on the tri-view and assign tweens and number of frames to them. It's certainly simpler than ProMotion but not in the long run as intuitive.

Perhaps one of the problems with Videoscope is its limited colour defining abilities. The program gives you a set palette to work with and allows some surface attributes, such as matte, glossy and transparent to be used. But these are limited textures and can't truly be combined.

Modeler makes the same concession to this palette using point-and-click mouse operations.

In conclusion, Modeler3D is a good program of its kind and complements Videoscope3D well, more so than ProMotion I feel. But editing environments such as Sculptis are better implemented and far less buggy. Modeler has not seen any kind of upgrade from version 1, and really needs some overhauling in certain areas.

## Videoscope3D

Videoscope3D has been around for quite some time, even in its 2.0 version. It was probably because Allen Hastings decided to leave development of V3D that ProMotion and Modeler3D came into prominence.

Taking Videoscope on its own virtues, what do we have as a program? The main screen consists of a fairly hi-tech looking point-and-click panel. Here you can load your objects that have either been created using the supplied CLI-based EGG and OCT programs or from Modeler3D. As the objects are loaded into Videoscope a

counter displays the total number of points and polygons.

Be aware that all the models and rendered pictures you see in this article (excepting the Draw4D images) were produced on an Amiga500 with a AS90 hard drive and in total 3 megs of ram. The point limits on this type of system are around 21,500.

After each object is loaded the program requests an associated motion file, if you have not prepared one the object is automatically placed at its point of origin. There is also a choice to metamorph the last two objects loaded into the scene. It's a pity that more than two objects can't be morphed, as it's quite a nice feature. The panel below allows you to load camera motions and alter the nature of the lens used, such as normal, wide angle or telephoto.

The motion and camera files are very

*“Once you have read the manual a few hundred times you may feel ready...”*

simple Ascii formats and consist of a special header and a collection of X,Y,Z and heading, pitch and bank co-ordinates, which you have to type in yourself.

A variety of screen resolutions and rendering modes are possible including Extra HalfBrite and HAM. The quickest results are achieved with the non-HAM modes. Typically, the featured pictures took three minutes to render on the

forementioned setup and HAM images 35 minutes, the main reason being the necessity to use the Z-Buffer option. I find that if you do not use this option the images do not look right, due to polygons being rendered in the wrong order.

The Z-buffer effectively draws the polygons within the scene correctly in relation to viewing distance. It's a memory-intensive feature and slows rendering down considerably, but nevertheless is essential.

Other options are defining sky and ground colours to use in your scenes. Unfortunately, there is no grading, just flat colouring. More interesting to the user is the ability to assign IFF images to the background and foreground of your renderings. In the example HAM pictures a marble backdrop has been placed behind the render.

Note that background or foreground images do not react with the surfaces defined in your overall scene, except for translucent objects, which do exhibit show-through characteristics – see the blue ball in the picture. It's also possible to have a sequence of numbered IFF images loaded automatically into the rendering of your animation files or frames.

For example, if you wanted to have 20 images of consecutive movement automatically loaded behind a 20-frame animation sequence which you were rendering – leave the program to do the job.

And when you have finished loading in the objects, motion files, camera info and set up the required resolution, lights, etc all this information can be saved as a settings file in a directory called, you guessed it, Set!

This can be edited quite easily afterwards, since it's only a simple text file. You can either save your scene in anim format or single IFFs for loading into other programs.

## Conclusion

In summary what we have in Videoscope3D is a program that in today's well-stocked 3D land seems slightly outmoded, and a quality of rendering that is fairly fast but needs working on to get the best results.

But with some effort in understanding the numbers and co-ordinates you get a program that can produce efficiently and quickly some of the most complex hierarchical animation you are ever to likely see or do. If you don't believe me, ask to see the Bass Robot animation.

I've dwelled less on Videoscope than ProMotion or Modeler3D because you really need either one of those two in order to maximise results.

Having said that, I reserve judgement on ProMotion until some more time is spent using it. But a combination of Modeler and Videoscope makes a fine package.



How many times can we show the same thing and from how many angles can we show it?

# DISCOUNT SOFTWARE

For The Commodore Amiga

## AMIGA A500 £309.95

Package includes A500 computer with 0.5 Mb Ram, Disk Drive, TV Modulator, Workbench, Mouse and PSU.  
with 0.5 Megclock upgrade add £25.00  
with Cumana 2nd Drive add £60.00

## AMIGA SCREEN GEMS

Includes Deluxe Paint II and 4 Top games &  
Free 0.5 Meg memory expansion  
MJC PRICE £379.95

for courier delivery on computers add £5

## COMMODORE A500 HARD DRIVE

20Mb Auto boots from WS 1.3

MJC PRICE £279.95

with extra 1 Meg Fitted £319.95  
with extra 2 Meg Fitted £349.95

## NEW - GOLDEN IMAGE SCANNER

Quality 400 dpi scanner with powerful Touch Up enhancement software

MJC PRICE £175.00

## NAKSHA UPGRADE MOUSE

280 DPI with FREE Mouse House & Mat.  
Now also includes free Op Stealth game.

MJC PRICE £24.95

## SQuik - Replacement Mouse

Same spec and design as Naksha mouse  
MJC PRICE £14.95

## MEMORY EXPANSIONS

0.5 Meg internal with clock, 4 Chip MJC PRICE £29.95  
Zydec 1.5Mb upgrade board - requires Kickstart  
1.3 and internal Gary chip connection MJC PRICE £89.95

## CUMANA CAX 354 DISC DRIVE

Quality brand name 3.5" second drive includes port, double switch and No hassle 1 year guarantee.  
INCLUDES FREE VIRUS+ UTILITY  
MJC PRICE £91.95

## VIDI COLOUR SOLUTION

Vidi Colour package - including Vidi Digitiser, Vidichrome and Photon Paint.

MJC PRICE £95.00

RGB SPLITTER - For use with Vidichrome or Digiview (includes PSU)

MJC PRICE £64.95

## COMPLETE COLOUR SOLUTION

Package includes Vidi Amiga, Vidichrome and the RGB Splitter for a complete colour digitising outfit. NOTE: For best colour pictures you require a video camera or perfect still frame VCR.

MJC PRICE £145.00

## AMIGA A1500 £679.95

Package includes A1500 computer with 1 Mb Ram, 2 Drives, Deluxe Paint III, Works Platinum and 4 Great Games. Price includes VAT and Courier delivery.  
A1500 plus 8833 M2 Col Monitor £919.95

## A1500/2000 PERIPHERALS

SUPRAM - add on Ram cards with space for up to 8 Meg of extra Ram.

SUPRAM with 0k fitted £84.95

SUPRAM with 2Mb fitted £159.95

SUPRAM with 4Mb fitted £225.00

SUPRAM with 8Mb fitted £349.95

## SUPRA HARD DRIVES

Using the fast WordSync 2000 controller and quality Quantum drive mechanisms.

SUPRA DRIVE 40Mb (11ms) £349.95

SUPRA DRIVE 52Mb (11ms) £389.95

SUPRA DRIVE 105Mb (11ms) £529.95

## GVP SERIES II HARD DRIVES

Quality drives with the ability to add up to 8 Meg of extra Ram on board

52Mb (11ms) version £459.95

105Mb (11ms) version £599.95

## PC XT BRIDGEBOARD

PC XT Bridgeboard allowing your Amiga to run PC programs in MOK or GEM modes, ideal for Wordprocessors/Spreadsheets, includes 360K 5.25" Disk Drive and MS-DOS 3.3 with full instruction manuals.

MJC PRICE £199.95

## ICD AD-SPEED ACCELERATOR

Accelerator board for the 500/1500/2000 increases clock speed from 7.1 to up to 14.3. Requires internal fitting.

MJC PRICE £169.95

## PROTEXT Version 5

A very fast command based package now with 110,000 word Collins Dictionary, Mail Merge and up to 36 titles open plus much more - call for details (1 Meg)

MJC PRICE £95.95

Protext V4.3 £84.95  
Protext Amiga £95.95

Kind Words V2 £32.95

Wordworth - NEW £39.95

Superbase £59.95

Superplan £59.95

Maxiplan Plus £49.95

Personal Finance Manager £22.95

## DESKTOP PUBLISHING

Pagesetter 2 - Great value £47.95  
Pro Page V2 - The Best? £179.95

The above programs all require at least 1 Meg and 2 Drives/Hard recommended.

## VIDEO TITLING/PRESENTATION

Home Timer - by Genesis £34.95  
Big Alternative Scroller £45.95  
TV Show - IFF slide show £54.95  
TV Text Pro - Quality fonts £79.95  
Broadcast Teller II £169.95  
Pro Video Post £179.95

## ZVP VIDEO STUDIO

Great Video production package - Call for details (Requires 1 Meg & 2 Drives)

MJC PRICE £89.95

ZVP VIDEOSTUDIO PRO - CALL FOR DETAILS

## RENDALE 8802 GENLOCK

Great value Genlock offering both Foreground and Background modes.

MJC PRICE £159.95

8802 MODE SWITCH BOX - £29.95

## GRAPHICS

Pixmate £34.95  
Digi Paint 3 £44.95  
3D Construction Kit £37.95  
Digiview 4 Gold £89.95  
Deluxe Paint 3 £59.95  
Disney Animation Studio £74.95

## AMOS V1.2

AMOS Compiler - Call for availability

## TECHNO SOUND TURBO

Great value Stereo sampler £29.95

## HARMONI

MIDI Sequencing software £34.95

## ALTER AUDIO

The complete MIDI starter kit features MIDI Interface, Tiger Cub Software & Tutorials

MJC PRICE £79.95

## THE MIDI CONNECTOR

Featuring Midi III, 2 x Midi Out, Midi Thru and Serial port Thru & 2 Cables.

MJC PRICE JUST £14.95

## AMIGA EDUCATIONAL

Fun School 2 - Featuring 8 educational games per pack on a range of subjects.

Fun School 2 Under 6 £12.95  
Fun School 2 6 to 8 £12.95  
Fun School 2 Over 8 £12.95

Fun School 3 - Featuring 6 educational games per pack - different from Fun School 2.

Fun School 3 Under 5 £15.95  
Fun School 3 5 to 7 £15.95  
Fun School 3 Over 7 £15.95

Many other educational titles available - please call or write for further details.

## PRICES INCLUDE VAT AND POSTAGE TO THE UK

Education, Local Authority and Government orders welcomed.

Overseas customers also welcome, please call or write for quotations.  
All goods subject to availability, all prices subject to change without notice. E&OE

CALLERS WELCOME : 9.30 TO 5.00, SIX DAYS

**M.J.C SUPPLIES (AC)**

2 THE ARCHES, ICKNIELD WAY, LETCHWORTH, HERTS, SG6 1UJ

TELEPHONE ORDERS AND ENQUIRIES

LEITCHWORTH (0462) 481166 (6 lines) FAX: 0462-673031

VISA

MasterCard

Proprietor: M. J. Cooper

**NEW!**  
Flight of the Intruder Packs

# GORDON HARWOOD

**'FLIGHT OF THE INTRUDER' 1Mb Packs now available!**  
FANTASTIC NEW FLIGHT SIMULATOR

**NEW!**  
1Mb. Amiga

## POWERPLAY INTRUDER PACK 1



THAT'S RIGHT HARWOODS HAVE PUT TOGETHER THE ULTIMATE  
SCREEN GEMS PACKS YET AGAIN, STARTING WITH 'FLIGHT OF THE INTRUDER'  
PACK 1 AND INCLUDING 15 GREAT GAMES!

Just look at  
what you get...



- AMIGA 5000 COMPUTER WITH 0.5Mb. UPGRADE TO A FULL 1Mb.
- FLIGHT OF THE INTRUDER
- PLUS 10 MORE GREAT GAMES...
- SHADOW OF THE BEAST II
- DAYS OF THUNDER
- BACK TO THE FUTURE II
- NIGHT BREED
- MICROSWITCHED JOYSTICK
- RIVF Horda
- AND... DELUXE PAINT II
- TAILORED DUST COVER
- MOUSE MAT

...The pack for any serious Games Enthusiast!

**INTRUDER PACK 1  
PRICED AT AN  
INCREDIBLE...**

**£399**

**INTRUDER**

## Amiga MONITORS

**THE SUPERB PHILIPS  
CM 8833/II STEREO  
COLOUR MONITOR**  
Stereo High Resolution Colour Monitor

The Philips CM 8833 Mk. II is the successor to the  
ever popular CM 8833. This versatile multipurpose 14-inch  
monitor offers excellent colour graphics performance with a wide  
range of home and personal computers.

The CM8833/II can also be used as a TV Monitor when connected to either  
a VCR, Colour or Mono Video Camera or TV tuner (available separately).

- Please ask for further details.
- ☐ RGB/AV, TTL, Comp. Video & stereo audio inputs
  - ☐ Can also be used as a TV with VCR or Tuner
  - ☐ Features retractable foot ☐ Twin Speakers
  - ☐ FREE lead for YOUR computer ☐ Earphone Jack Socket
  - ☐ FREE 12 Month on site service warranty.

**A MOST VERSATILE STEREO COLOUR  
MONITOR AVAILABLE FOR ONLY...**

**£249.95**

**CBM 1084S STEREO COLOUR MONITOR**  
Commodore's Own Stereo High Resolution Colour Monitor

- ☐ RGB/AV/TTL Comp. Video/Audio inputs
- ☐ Can be used as TV with VCR or tuner
- ☐ Twin Speakers for stereo output
- ☐ Supplied with cables for AS60, GS60, PC, C16 & C128

**£269.95**







**OPENING TIMES: 9.00 til 5.00 Monday to Saturday**  
9.00 til .00 Weekends

£79.95

- 3 240 dpi - 8 Pin COLOUR
- 3 10k Buffer, 8 Resident Fonts
- 3 Fast Panel Plot, Save font
- 3 Supplied with colour & mono ribbons
- 3 Paper pack with auto single sheet loading
- 3 Programmable turn hard panel.

[illegible]

**STARTAR LC24-200 NEW COLOUR PRINTER - 220.95 cps** — **£309.95**

Colour version of the best-selling LC24-200 Mono

Printer pack with auto single sheet loading  
Micro paper feed. Max. paper width 11"  
100 sheets of 80 gsm paper  
Supplied with colour & mono ribbons  
Super quality print (LC24) colour  
Prints 100 sheets of 80 gsm paper  
Prints 100 sheets of 80 gsm paper  
No flip switches

60 Garamond font sizes  
365 cps - 24 Pin COLOUR  
800 dpi. Fully expandable to 16K  
100 sheets of 80 gsm paper  
100 sheets of 80 gsm paper  
Prints 100 sheets of 80 gsm paper  
Prints 100 sheets of 80 gsm paper  
12 month warranty

[illegible]

**NEWLETT PACKRAT PAINTJET A4** £299.95

Our best quality full colour printer at a realistic price

- ▶ Parallel/Centronics or Serial RS232C (if specify with order. MAC option available)
- ▶ 1280 x 720 dpi resolution
- ▶ For presentation graphics, OTD, CAD and technical/scientific applications
- ▶ A full page of colour graphics in 4 minutes (typical)
- ▶ Will print transparencies
- ▶ Non impact printing
- ▶ 12 Month on-site warranty (UK Mainland)

**STARSRIPT® - 800mm POSTSCRIPT LASER** **£1595.95**

Up to the minute Laser Printer for PC, Amiga, ST or MAC

- ☐ 300 DPI, 24MB. Upgradable to 54MB.
- ☐ Emulations inc: HP Series II, Epson
- ☐ EX800, IBM Proprinter & Diablo 630
- ☐ Serial Parallel printer interfaces built in
- ☐ Inc. 12month on site warranty (UK Mainland)
- ☐ Easy desktop, pub/ethernet driven

PRINTED RIBBONS	SINGLE	6 PACK
100% COTTON RIBBON		
100% COTTON RIBBON	\$1.95	\$2.95
100% COTTON RIBBON	\$3.95	\$5.95
100% COTTON RIBBON	\$3.95	\$5.95
100% COTTON RIBBON	\$14.95	\$17.95
100% COTTON RIBBON	\$7.49	\$9.95
100% COTTON RIBBON	\$4.95	\$6.95
100% COTTON RIBBON	\$4.95	\$6.95
100% COTTON RIBBON	\$7.95	\$9.95
100% COTTON RIBBON	\$12.95	\$16.95

[illegible]

**EDUCATIONAL SOFTWARE For most age groups!**

**ESSENTIAL MATHS COURSE** Ages 3 to 12, Complete 24 Programme Cards  
We always carry large stocks of the full range of  
ABACUS BOOKS... Please see our details!

**ESSENTIAL MATHS** £21.95  
**ESSENTIAL MATHS** £21.95  
**ESSENTIAL MATHS** £21.95

<p><b>OXFORD LITERATURE:</b> A level study by world literature course, based on studying the works of Shakespeare, Milton, Keats, Wordsworth, and Tennyson.</p> <p><b>OXFORD FRENCH:</b> GCSE French tuition or revision course. Convert both classes to written French.</p> <p><b>OXFORD ENGLISH:</b> A complete programme of self-study up to GCSE standard.</p> <p><b>OXFORD THREE BEARS:</b> Ages 5-10. Develops imagination through reading picture books.</p> <p><b>OXFORD SPELL BOOK:</b> Ages 4 to 6. Developed with the help of a Primary School Teacher to help spelling skills.</p> <p><b>OXFORD JAV AND READ:</b> Ages 4 to 7. The complete reading list for ages 2-7. Includes spelling to the beginner at reading.</p>	<p><b>£21.95</b></p> <p><b>£21.95</b></p> <p><b>£22.95</b></p> <p><b>£17.95</b></p> <p><b>£18.95</b></p>
--	--

**ACCESSORIES**

**5" DISK HEAD CLEANER** — £2.99

**BLANK DISKS with labels**

10 Genuine Commodore 3.5" branded	Only £9.95
10 Unbranded with library case 3.5" certified	Only £7.95

Only £7.95

**ARWOODS PRO RAM PACK**  
12K Memory Expansion for the Amiga, simply  
slugs in! 16 Chip, same configuration as A501 for full  
compatibility with latest 8327A Amiga 1Mb. Bitter. Enable Disable

**HARWOODS SUPER PRICE DEALS!**

NAKSHA MICROSWITCHED MOUSE	Only £24.95
Amiga ST/Amstrad PC	
GOLDEN IMAGE OPTICAL MOUSE	Only £32.95
For the Amiga	

10

PAGE 4

**GORDON  
HARWOOD  
HARWOOD  
HARWOOD**

COMPASS

ORDER HOTLINE

0773  
836781

ORDER HOTLINE

**GORDON HARWOOD COMPUTERS**  
DEPARTMENT AQ07702, NEW STREET  
ALFRETON, DERBYSHIRE, DE5 7BP  
TEL: 0773 836781 FAX: 0773 831040

5" DISK HEAD CLEANER £2.99

**BLANK DISKS with labels**

10 Genuine Commodore 3.5" branded	Only £9.95
10 Unbranded with library case 3.5" certified	Only £7.95

Only £7.95

**ARWOODS PRO RAM PACK**  
12K Memory Expansion for the Amiga, simply  
slugs in! 16 Chip, same configuration as A501 for full  
compatibility with latest 8327A Amiga 1Mb. Bitter. Enable Disable

**HARWOODS SUPER PRICE DEALS!**

NAKSHA MICROSWITCHED MOUSE	Only £24.95
Amiga ST/Amstrad PC	
GOLDEN IMAGE OPTICAL MOUSE	Only £32.95
For the Amiga	

10

PAGE 4

Our best quality full colour printer at a realistic price

- ▶ Parallel Centronics or Serial RS232 IF (specify with order, MAC option available)
- ▶ For presentation graphics, DTP, CAD and technical/scientific applications
- ▶ A full page of colour graphics in 4 minutes (typical)
  - ▶ Ink print transparencies
  - ▶ 32 Months on-site warranty (UK Mainland)
- ▶ Non impact printing

**STARSRIPT® - 800mm POSTSCRIPT LASER** **£1595.95**

Up to the minute Laser Printer for PC, Amiga, ST or MAC

- ☐ 300 DPI, 24MB. Upgradable to 54MB.
- ☐ Emulations inc: HP Series II, Epson
- ☐ EX800, IBM Proprinter & Diablo 630
- ☐ Serial Parallel printer interfaces built in
- ☐ Inc. 12month on site warranty (UK Mainland)
- ☐ Easy desktop, pub/office driven

PRINTED RIBBONS	SINGLE	6 PACK
100% COTTON RIBBON		
100% COTTON RIBBON	\$1.95	\$2.95
100% COTTON RIBBON	\$3.95	\$5.95
100% COTTON RIBBON	\$3.95	\$5.95
100% COTTON RIBBON	\$14.95	\$17.95
100% COTTON RIBBON	\$7.49	\$9.95
100% COTTON RIBBON	\$4.95	\$6.95
100% COTTON RIBBON	\$4.95	\$6.95
100% COTTON RIBBON	\$7.95	\$9.95
100% COTTON RIBBON	\$12.95	\$16.95

10

PAGE 4

# NEED OUTPUT? NEED INPUT?

PROFESSIONAL  
GRAPHICS & DTP  
SERVICES FOR  
THE AMIGA  
USER.

Outputting of your Amiga files to our  
LASER PRINTERS at 300 dpi  
or to our LINOTRONIC 300 at  
1200, 1600 or 2500 dpi,  
onto paper or film.

Scanning of colour photos,  
illustrations, logos etc.  
at between 30 and 600dpi.  
And send you an IFF file  
to run in DPAINT II, 600 or  
output them as 24 bit files  
on our LINOTRONIC.

We can handle files in most  
Amiga formats including:-  
IFF, HAM, EPS, ASCII,  
PROPAG, PROGRAM,  
DPAINT PAGESTREAM,  
PAGESETTER, etc.

Call for free advice on any  
DTP or GRAPHICS problem  
(Hardware or Software).

## the DTP BUREAU

843 WESTERN BOULEVARD  
NOTTINGHAM, NG8 5EG  
TELEPHONE

0602 420528

CALL FOR INFORMATION AND DEMO DISK

36p  
inc VAT

### 3 1/2" DISKS inc LABELS

These disks are 100% error free and fully  
guaranteed with a 2 for 1 replacement. We're  
sure you will order from us in the future.

KYC SOFTWARE - PHONE FOR DETAILS

P&P: 50 disks & over £2.50. Under 30 disks only £1.50  
All prices include VAT. Send cheques or Postal Orders to:

SHOP NOW  
OPEN

KYC Disks

CALLERS  
WELCOME

Dept AMC, 9 Barmouth Road, Wandsworth, London SW18 2DT.  
Tel: 081 877 7338, 081 870 0469 or 0860 763576



Open Mon-Sat from 10am-7pm

## AMIGA

# SOFTMACHINE

## AMIGA

### COMPONENT HARDWARE

AS500 - Options from £314.99	
AS500 1MB Screen Gems	£282.99
AS500 First Steps	£482.99
A1500 - Options from £689.99	
3 1/2" 40 Capacity Box	£4.99
3 1/2" 80 Capacity Box	£8.99
A3000 25MHz + 40MB HD £2019.99	
A3000 25MHz + 40MB HD £2059.99	
A3000 25MHz + 100MB HD £2059.99	
A1064S Colour Monitor	£254.99
A1064S Monitor	£438.99
A600 - Options from £299.99	
A1011 1MB 3.5" Drive	£70.99
AS501 Ram Expansion £264.99	
AS501 TV Modulator	£20.99

### HARDWARE/PERIPHERALS

Philips 6033 M3	£244.99
Citizen 1200	£131.99
Citizen 1240	£194.99
Citizen Swift 9	£152.99
Citizen Swift 24	£284.99
Swift 304 Colour Kit	£34.99
Star LC-10	£141.99
Star LC24-10	£198.99
Star LC-20	£214.99
Star LC24-20	£228.99
Star LC24 200 Colour	£290.99
Compaq 1MB 3.5" Drive	£54.99
Protec 1MB 3.5" Drive	£59.99
MOSIT Ram Expansion £24.99	
AT Drive	£179.99
Amiga Camera & Lens	£224.99
Digiview	£179.99
Vid Amiga Vidi Chrome	£114.99
Vid RGB Splitter	£69.99
Vid Colour Isolator	£104.99
Golden Image Scanner	£170.99
Mirage	£119.99
Graphics + Home Tiler	£119.99
Designer Modern	£104.99
Lined Model	£161.99
AMMS	£161.99
Audio Engineer Plus	£179.99
MasterControl	£179.99
Perfect Sound	£49.99
Nastika Mouse	£19.99
Contriver Trackball	£19.99

### Universal Trackball

Universal Printer Stand	£5.99
Centronics Printer Cable	£4.99
RS232 Cable	£7.99
AS500 First Steps	£482.99
3 1/2" 40 Capacity Box	£4.99
3 1/2" 80 Capacity Box	£8.99
10 x Sony Bulk 3.5"	£24.99
50 x Sony Bulk 3.5"	£24.99
10 x Sony MF220 3.5"	£3.99
10 x TDK MF220 3.5"	£3.99

### Books

Advanced Amiga Basic	£16.99
* Adv Sys Prog Gids	£32.45
* 3D Graphics Prog	£16.45
Amiga Applications	£16.99
Amiga Ass Lang Prog	£12.45
Amiga Basic in & Out	£16.45
* Amiga C Adv Prog	£32.45
* C for Beginners	£16.45
Amiga DOS	£14.99
Amiga DOS in & Out	£16.45
Amiga DOS Ref Guide	£14.99
Amiga Desktop Video	£16.45
* Desktop Video Gids	£16.45
* Disk Drives Individ	£27.99
Amiga for Beginners	£12.99
* Graphics in & Out	£32.45
* Hardware Ref Man	£21.99
Amiga Much Long	£14.99
Amiga Manual Lang	£16.99
* Prog Handbook vol 1	£24.99
* Prog Handbook vol 2	£22.99
Complete - Prog Gids	£16.99
Writer - Prog Gids	£16.99
* ROM Manual Main Lib	£29.99
* ROM Manual Main Lib	£29.99
* System Prog Gids	£29.99
Becoming an Artist	£16.45
Beginners Gids to	£16.99

### Computers 1st Book

Computers 1st Book	£16.99
Computers 2nd Book	£16.99
Elementary - Basic	£14.99
Inside - Programs	£16.99
Kids & the Amiga	£16.99
Mapping the Amiga	£20.99
Master Amiga 500	£17.99
Prog Gids to Amiga	£22.99
* Indicates Amiga in title	
68000 Assem Lang Prog	£21.99
68000 User Guide	£29.99
Programming the 68000	£22.99
Teach Yourself 68000	£29.99
40 Great Flight Sims	£13.99
40 More Great Flights	£14.99
40 Great Ship Adv's	£13.99
F-19 Stealth Air Combat	£14.99
F-19 Stealth Fighter	£13.99
Falcon Air Combat	£14.99
Flight Sim Companion	£14.99
Flying Right Sim	£7.99
Gunsling Academy	£14.99
Jet Fighter School	£11.99
Jet Fighter School II	£14.99
Learn to Fly Flight Sim	£14.99
Sam Commander	£12.99
Take Off Flight Sim	£14.99
Up & Run Flight Sim	£8.99

### EDUCATIONAL

Better Maths 12-16 yrs	£12.99
Better Spelling Over 8	£14.99
Fun School 2 Under 8	£14.99
Fun School 2 8-9 years	£14.99
Fun School 2 Over 9	£14.99
Fun School 3 Under 5	£17.99
Fun School 3 5-7 years	£17.99
Fun School 3 Over 7	£17.99
Magical Maths 4-6 yrs	£18.99
Maths Mania 8-12 yrs	£18.99
Mt Beacon Teaching Tapes	£22.99
Myra Maths A-Level	£20.99

### More English GCSE

More English GCSE	£20.99
More French GCSE	£20.99
More Maths GCSE	£20.99
Primary Maths 3-12 yrs	£20.99
Prog Looks at Words	£18.99
Prod Maths Sentences	£18.99
Prod Plays a New Game	£18.99
Spell Book 4-9 years	£14.99
The Three Bears	£18.99
Things to do with Numbers	£14.99
Things to do with Words	£14.99

### WORD PROCESSORS

Excellence 2	£99.99
Kindershot 2	£21.99
Pen Pal	£82.99
Protect v5	£102.99
Pro Writer v5.1	£102.99
Quickwrite	£37.99
Scrubble Platinum	£42.99
Transwrite	£31.99
Word Perfect	£192.99

### DATAFILES

DATAFILES	£36.99
* Krita	£36.99
* ProData	£55.99
* Superbase Personal	£26.99
* Superbase Personal 2	£26.99
* Superbase Professional	£26.99
* Superbase Professional 2	£26.99

### SPREADSHEETS

Advantage	£78.99
GO Calc	£27.99
Graphics Plus	£34.99
Superspread	£154.99
TPR Plus	£154.99
Scala	£160.99
TV Text Professional	£154.99
Video Tracer	£78.99

### UTILITIES

UTILITIES	£36.99
* Crea Disk	£21.99
* Diskmaster	£38.99
* GB Restore	£77.99
* Home Tiler	£34.99
* X-Change Professional	£35.99

### TRAINING/EFFECT PRESENTATION

Big All Scrubber	£42.99
Broadcast Tiler 2	£189.99
Home Tiler	£34.99
HyperBook	£54.99
Pro Tiler	£154.99
Scala	£160.99
TPR Plus	£154.99
TV Text Professional	£154.99
Video Tracer	£78.99

### DESKTOP PUBLISHING

DESKTOP PUBLISHING	£42.99
* Gold Type Text	£21.99
* Outline Font	£30.99
* PageMaker II	£46.99
* PageMaker v2.1	£139.99
* Principles	£21.99
* Professional Page v2	£189.99

### ACCOUNTS

ACCOUNTS	£36.99
* Cashbook Combit	£47.99
* Cashbook Controller	£55.99
* Final Accounts	£22.99
* Home Accounts	£22.99
* Personal Finance Manager	£22.99
* System 3	£35.99

### COMMUNICATIONS

COMMUNICATIONS	£47.99
* GP Term	£47.99
* X-Comm 2	£36.99

### MUSIC/AUDIO

MUSIC/AUDIO	£47.99
* Autodriver III	£47.99
* Bars and Pipes	£172.99
* Dr T's Copycat App	£16.99
* Dr T's Copycat DTP App	£201.99
* Dr T's KCS	£24.99
* Dr T's KCS Level II	£24.99
* Dr T's MRS	£11.99
* Dr T's Tyle Cuts	£84.99
* Music	£25.99
* Music X	£25.99
* Sequencer One	£74.99
* TDM	£38.99

### SIMULATIONS/STRATEGY

SIMULATIONS/STRATEGY	£47.99
* A10 Tank Killer	£28.99
* A10 Tank Killer 2	£28.99
* F-16 Combat Pilot	£175.99
* F-16 Falcon	£22.99
* F-16 Falcon 2	£22.99
* Falcon Mission Disk	£13.99
* Flight Simulator II	£22.99
* Mission	£22.99
* M1 Tank Platoon	£22.99
* M1 Tank Platoon 2	£22.99
* Proming	£28.99
* Tank Battle	£28.99
* UMS II	£22.99



Please make cheques/postal orders payable to SOFTMACHINE. All items subject to availability.  
All prices include V.A.T. & U.K. Delivery. All prices subject to change without notice. E.S.O.E.

## SOFTMACHINE

Dept. AMC2, 20 Bridge House, Bridge Street, Sunderland SR1 1TE. Tel: 091-510 2666/2777 Fax: 091-564 1960

# CLI

## BEGINNERS GUIDE



# Going to press

Stevie Kennedy takes the misery and mystery out of printers in AmigaDOS

**T**he printer is a beast. No, don't spring to its defence, most average computer users arrive at the same conclusion shortly after opening the box and plugging it in. From the moment you boot up, the recalcitrant monster seems to snarl menacingly, and will beep sullenly at the slightest provocation.

With the help of Workbench and a few AmigaDOS tricks, however, the printer can be made a great deal friendlier and easier to handle.

To make your dealings with the 9-pin nihilist a bit more constructive, therefore, we'll concentrate this month on those parts of AmigaDOS which pertain most to printing.

## Setting it straight

The first step for any printer user is to come to grips with the printer section of Workbench's preferences program. To open this, double click on the Preferences drawer, then on the Printer icon inside.

This will bring up the main printer screen shown in Figure 1. It is here that the user selects the correct printer port, printer driver, paper type, lines per inch, and sets the print margins. Many wordprocessors utilise the preferences settings, and if you wish to send a text file to the printer from CLI your output will be governed by them, so their

importance cannot be overstated. To change the selected printer driver, go to the top right-hand corner of the display where you will find a scrolling list of drivers. Click on the up and down arrows, wait until the correct printer driver is highlighted in the middle strip then click on the OK gadget.

You have now selected your printer driver. The display will change to the main preferences screen, where you click on Save to record permanently any changes made. Your preferences are written to disk as the "system-configuration" file in the DEVS: directory of the disk you booted from, so they needn't be changed again once saved.

If you are using a colour printer or

wish to put graphics on paper, you'll find a number of indispensable options available through the Graphic1 and Graphic2 screens, both of which are available from the main printer screen.

Graphic1 contains, among others, the all-important threshold and shading controls, while Graphic2 regulates dithering and print density. The only practical advice anyone can give concerning these settings is to experiment as much as possible.

Buy some fanfold continuous stationery and draw or import a DPaint image on which to practise. The best type of image is either one which has a wide variety of different contrasts and shading (for monochrome printing), or

which makes use of dithering (important for colour printing).

Experiment mainly with threshold and density settings, and the different types of dithering. This is the only way to arrive at a practical understanding of how Workbench settings can affect how your printer performs, and has the added advantage that you will probably end up with a set of preferences which match your printer and graphics requirements exactly.

## Routefinder

One of the most useful concepts to grasp before going any further is that of redirection, the technique whereby AmigaDOS can be told to send output from a process to any legitimate device or file.

When an Amiga program has output of any kind to be passed to the outside world, it does it through a "device". Under AmigaDOS, a device can be used for almost anything you want it to be, so it is possible to send output to a great many destinations.

Examples of devices are any floppy or hard drives, anything set up using an Assign statement, the monitor screen itself, and the many devices for which handlers and mountlist entries exist, such as AUX: and SPEAK:. Most CLI or Workbench programs will have a default output device, and most of



Figure 1: The main printer screen

► these will be the screen or, to be more precise, the current CLI window.

In the case of the printer, the devices most likely to be used are the PAR, SER, and PRT: devices and for more advanced purposes the PIPE: device. Alternatively, output can be redirected to a file, and if the named file does not exist it will in many cases be created.

The redirection symbol is an angled bracket, which can be used in either direction, so two examples of AmigaDOS redirection might be:

```
ECHO >filename "This is redirection"
```

and

```
TYPE >PRT: filename
```

The first will create a file called "filename" containing the text in the quotes, and the second will send the contents of the file to the PRT: or printer device.

## The PRT: device

The PRT: device uses the current preferences settings for printer driver, paper type and so on, so if you want text output with any sort of control over how it will look and what paper size it will print on, use the PRT: device.

The PAR: and SER: devices are crude gateways to the parallel and serial ports respectively, and act as sort of "binary bins" in that anything you send to them goes direct and unaltered. When a printer is attached to the port concerned, it will print out the text as it receives it, so most people will want to use the PRT: device instead.

If, however, you were transmitting data to another source through the serial port, as when using a modem, you could use redirection to this port controlling the transfer through the serial settings in preferences. All prefs settings concerning baud rate, error checking, and protocols are followed when using the SER: device.

When sending output to the printer, the three most useful AmigaDOS commands are Type, Copy and Echo, and

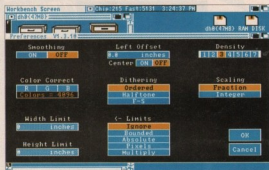


Figure 8: The Graphic2 screen to set print density

Type is probably the one you'll want to use most. This command normally sends its output to the screen, which is the default device, but it can be sent anywhere the user wishes.

Use the Type command with the syntax:

```
TYPE FROM filename TO PRT:
```

or

```
TYPE >PRT: filename
```

Either way, the text file will be sent to the printer device under the control of preference's printer settings and you should get some decent output.

For example, if you have a file on disk called "readme.doc" which is a few thousand words long and you'd rather not read it onscreen, you can print a rough copy using the command:

```
TYPE >PRT: readme.doc
```

If you later decide you want a NLQ copy on US Legal size paper with margins of 0.5in on all sides, you need only affect the requisite changes in Preferences and type in the same command. If you used the PAR: device for



Figure 9: Graphic2 preferences

# C BEGINNERS GUIDE I

One of the most useful gimmicks is background printing, and it serves nicely to illustrate the uses to which some of Workbench's more esoteric functions can be put.

Open your text editor (ED or MEMACS would both be fine) and type in the following script file:

```
LAB start
TYPE >PRT: PIPE:FILE
SKIP start BACK
```

then save it to disk as "background" or some other suitable name.

The listing does two things. First it types a file, named "FILE" and located in the PIPE: device, to the PRT: device, then it SKIPS back to the start and attempts to do the same thing again. The script will loop continuously until you re-boot the Amiga, so it is more of a sample listing than an example of good programming!

Once the file has been output to printer, the listing will wait for it to be topped up again before continuing, and if the file was empty in the first place it waits until the user sticks something into it.

## A cunning ploy

To fool your text editor into carrying out background printing, type:

```
ROUT PIPE: <RETURN>
```

If the device has not already been mounted, then run the script itself in the background by typing:

```
RUN EXECUTE background <RETURN>
```

Now all you have to do, when you want to print a file is to save it as PIPE:filename then print it directly from the text editor. You will notice that the Amiga takes no time at all to accomplish the task as the file is actually being written to memory.

The PIPE: device, written by Matt Dillon, is a channel through which two AmigaDOS processes can communicate with each other, and consists in essence of a 4K ram buffer.

This channel is four times as large as the standard buffer on a cheap 9-pin printer, and is easily large enough to hold the text of an entire letter before passing it on.

Once a file is written to the PIPE: another process can come along at any time and access it, so if a process such as our "background" script is continually attempting to access the PIPE, anything sent to it will be used instantly, thus freeing up your text editor for the next document.

## That's all folks!

Until we receive enough letters asking for a specific tutorial, there'll be no more CLI columns.

*With a few tricks, the printer can be a lot easier to handle*

redirection, on the other hand, you would have no control over such factors, but then you wouldn't have to mess about with preference settings.

It follows that those who want to send letters to their printer will use the PRT: device, and those just outputting program listings will use the PAR: or SER: devices.

Echo and Copy are useful in other ways, but generally speaking will be used less than Type. You can use Echo with redirection from within a script file if you'd like at some point to send messages via the printer rather than the screen or would like to keep a running check on something, for example, a program variable.

Copy, on the other hand, is really only of use if you want to dump a file to paper rapidly.

## Pipe dreams

The PIPE: device is a little appreciated feature of AmigaDOS, mainly because it's designed to be used by programmers and users of the most advanced AmigaDOS functions. With a little thought, however, it's one of those things you can have fun playing useful tricks with.

If you use a text editor to produce simple documents such as letters and can't see the need to splash out on a decent wordprocessor, you might occasionally bemoan some of the features found on the more expensive packages.



It's about time we explored the silly side of the WorkStation and if you fancy some useless additions that do nothing more than raise a smile or impress a friend, read on...

Law dropping is a serious business and perhaps the simplest way to do it is by adding a few extras to your startup sequence. All the proud owners of last month's issue of Amiga Computing will already be at home with auto-booting disks created thanks to the WorkStation. As a result, this month I'll be concentrating on the noddings dogs and furry dice side of disk construction.

To add a little glamour to the basic disk design we can use the WorkStation to add graphics, sound and even a stylish backdrop to the loading sequence and the final Workbench screen.

The first job is to pick your sound sample plus a suitable image for the opening screen. It's totally up to you as to what type of sample you choose but remember, big samples use up lots of space, so be careful.

The same applies to the graphics, if you use a Ham picture with overscan and interface be ready for prolonged loading times and a considerably slimmed down amount of disk space.

## Searching for sounds

If you're not the musical type, finding samples may seem to be something of a problem. In fact, they're everywhere and you can use SID to search them out.

The coverdisk is a great starting point but almost all PD disks and most commercial offerings have samples hidden away somewhere. To find them click on the DESK button which you'll find hidden below SID's main control panel.

Once the DESK option is activated all the files listed in any directory or disk



will become instantly recognisable and picking out samples will be a breeze. When you've found the sound you want simply copy it to the C directory of your auto-booting disk.

## Taking pictures

There are two ways of adding an image to your disk. If you're an artistic soul you could create your own loading

screen via the paint package of your choice - whether that be HAM or IFF the choice is yours. The alternative is to lift an image from elsewhere and that's when ScreenX, the WorkStation's very own graphic ripper comes into its own.

If you plump for the ScreenX option the image you're planning to grab has to use a non-custom screen. In other words, it must multi-task. One of the best ways to check for multi-tasking is

to hold down the Amiga key and press N and M in turn. If the various screens alternate then there's a good chance ScreenX will capture what you're after.

You'll find a guide to ScreenX in your WorkStation manual so grabbing your favourite image should be simple. The only thing to watch is that you capture the correct screen. When you have the image you require it can be saved direct to the C directory on your auto-booting disk.

Now we have both the image and the sample in the C directory of your auto-booting disk it's time to alter the startup sequence. To do this, exit ScreenX and open or expand SID. Now double click on the S directory of your designer disk and highlight the startup sequence.

OK, now click on Edit and after a brief pause QED should appear displaying the selected startup sequence. Now simply add the following lines at the top of the sequence:

```
Background
sound "filename"
P$show "filename"
```

The "filename" is simply the name of the graphic or sound you've chosen. Remember not to add the quotes and leave a space between the program and the filename.

In this particular example the sample loads and plays before the graphic but this is purely a matter of choice, either

# Nodding dogs and furry dice



way round will be fine. After you've decided the order simply save and quit.

As you can see there are a few extra names that haven't been mentioned. Sound, Background and P\$show are three utilities which are employed within the WorkStation but there's no reason why you can't use them as part of your own disks.

Both sound and P\$show are to be found in the C directory of the WorkStation so simply copy them into the C directory of your new disk. Background must be copied into the designer disk's C directory also, but in the case of the WorkStation it's hiding in the Menu-2 directory so you'll have to double click and copy from there. When this final task is complete it's time to reboot and marvel at your latest creation.

Well, once again that's all that space allows, so until next month, happy tinkering and remember - if anything goes wrong, read the manual...

Add some whistles  
and bells to your  
designer disks.  
Paul Austin pulls  
out all stops to  
show you how

## WorkStation Update

Due to a hitch when the WorkStation disk was in final production the DATE command in the disk's C: directory was mangled. This has meant that many users have had a puzzling "Error 103: Out Of Memory" message during boot-up and have subsequently been unable to set their machine's internal clock.

Unfortunately, the problem was not detected until many readers had received their WorkStation disks, so in order that we might remove the problem as painlessly as possible, we have included a script file on this month's disk which will carry out the required alterations to the WorkStation disk.

- STEP 1: Make sure you are using a copy of the WorkStation disk, not the original.
- STEP 2: Turn on your Amiga and insert the August 1991 coverdisk.
- STEP 3: Wait until the coverdisk finishes loading, then click once in the CU window left open at the bottom of the disk's Workbench screen. This will activate the window ready for your input.
- STEP 4: Type the following:

```
CD SYS-UTILITIES <RETURN>
EXECUTE W$Update <RETURN>
```

- STEP 5: Follow the onscreen prompts until the message "Bug Fixed" is displayed, then re-boot with the WorkStation disk. All should now be as the WorkStation compiler intended.

# VIRUS FREE PD

## Amiga Public Domain Software

Over 1900 Disks Available. Thousands of satisfied customers. Most orders sent within 24 hours

only  
**£1.25**  
a disk



### ANIMIS 1 MEG

9. UNICYCLE ANIMATION
14. WALKER DEMO
15. WALKER DEMO II
155. SPACE ACE DEMO
196. PUGGS IN SPACE
215. SHOWER SHOW (1B)
761. NOIZE & OPTIX ANIMS 2
762. OFF THE HEAD
763. PIANO ANIMATION
771. DIGIMOVE 1 (1B)
804. FLEET MANOEUVRE
805. APPROACH
806. WORKBEE AND PHIL
809. BILLIARD ANIM
882. FILLET THE FISH
914. STEATHY II
1037. VIRUS FREE ANIM COMP
1072. FROG ANIMATION 2 (1A)
1077. SILLY ANIMATIONS 1
1079. 5 WAYS TO KILL A MOLE (16)
1080. LIFE'S A BITCH (1B)
1092. SILLY ANIMATIONS 2
1095. BATTLE THE MOVIE
1104. JUGGLER ANIMATION 2
1110. BACK TO THE FUTURE 2
1116. AT THE MOVIES
1167. ADONIC MOVIE DEMO
1201. 5 WAYS TO KILL A MOLE 2 (16)
1517. THREE MORE STEATHY ANIMS
1544. STEVE'S ANIM DISK 3
1555. VIDEO CLIP ANIMS
1565. TOOLS OF THE TRADE

### LAST TRAIN TO TRAN CENTRAL

The Amiga Mix - 3 Disks - only £3.00

Full range of AMOS disks available

**EXCLUSIVE !!!**  
**X-System**  
Only £3.99

**Clip Art Vol.2**  
Now only £3.00

### ADULT PACK

10 of the best - only £10.00

### POWER COLLECTION

- VPP 01. FOOTBALL MANAGER  
VPP 02. HOTSHOT  
VPP 03. KARTING GRAND PRX  
VPP 04. ARTIFICIAL DREAMS  
VPP 05. THAI BOXING  
VPP 06. LAS VEGAS  
VPP 07. SECONDS-OUT BOXING  
VPP 08. FROST BYTE  
VPP 09. MOUSE TRAP  
VPP 10. PLUTOS  
VPP 11. SPACE STATION  
VPP 12. WAR ZONE  
VPP 13. PROTECTOR  
VPP 14. FIRE BLASTER  
VPP 15. FLIGHT PATH 737  
VPP 16. QUANTOX

Only £2.99 each

### GIAMES 1

117. MORIA (RPG)
141. DIPLOMACY
154. TRACK-RECORD
507. EAT WINE
509. PARANOID
530. PACMAN 87
531. BUZZARD
595. CAVE RUNNER
856. XENON 3
903. AMIGANUTS GAMES DISK
936. AUTO BAHN 3000+
1000. MASTER OF THE TOWN
1058. ELECTRIC TRAIN
1064. LETTERIX
1184. MASTER MIND
1204. WET BEAVER TENNIS
1207. FRANTIC FREDDY
1246. PSEUDO-COP
1369. STAR TREK
1389. TERROR LINES II (1B)
1421. BIONIX
1440. MEGA-GAMES VOL. 1 DISK 4
1466. RETURN TO EARTH
1511. BLOCKIT
1520. SHAPES 1 MEG
1529. ENSIGNIA MAYHEM
1538. PANK
1548. TALKING COLOURING BOOK
1549. ESCAPE FROM JOVI II
1557. PROPERTY MARKET
1570. PNEUMATIC WEAPON
1575. SEVEN TITLES
1586. MEGABALL
1621. MECH FLIGHT
1631. TWINTRIS

### Games Galore 1 - 4

35 TOP QUALITY GAMES ON 4 DISKS. ONLY £5.00

**BLANK 3.5" DISKS**  
Only 40p each

AMOS Licenceware  
Only £3.50 a disk  
Now up to LPD25

Master Virus Killer 2.1  
Detects 124 Viruses

Catalogue Derr £1.00 FREE with all orders

### PD STARTER PACK 4

**£5.00** Master Virus Killer 2.1 ..... The Best Substance ..... Great Vectors  
Mega ball ..... Addictive Break-out game  
Beat this ..... Super music  
Catalogue ..... The best around

### ORDERING DETAILS

All disks £1.25 each unless otherwise stated. Please add 60p to total order for p&p in UK. For overseas orders - please add 25p per disk. Minimum order of 3 disks.

VIRUS FREE PD ..... £1.25 each    AMOS LICENCEWARE ..... £3.50 each  
AMOS PD ..... £1.25 each    POWER COLLECTION ..... £2.99 each

Prices subject to change without notice

### MUSIC 1

513. IF ONLY I COULD 1 MEG
551. VOCAL ATTACK II
558. THE POWER REMIX 1 MEG
601. DIGITAL CONCERT 4
585. FEEL THE RHYTHM 1 MEG
589. CRYPTOBURNERS MUSIC VOL. 4
600. THE FUNKY DEE 1 MEG
609. BACTERIA MUSIC
633. CHAOTIC SOUNDS 1
785. SCOREX BEAST SONIX
880. REFLECTIONS 1
892. REFLECTIONS 2
893. ALIENATION ALURAL EXTASY
894. CRISIS MUSIC DISK 1
899. GROOVE IS IN THE HEART 1 MEG
907. PSA MUSIC DISK
920. 100 C&A TUNES
928. SUPREMACY HIP MUSIC
938. PHANTASM Juke Box II
943. BASELINE MUSIC DISK
944. MUSIC MAESTRO 7
952. KERRIS Juke Box
956. LET'S RIP 1
959. LET'S RIP 2
965. AMIGA SOUNDS
975. AXLES MEGA MUSIC 1
975. ITS MUSIC DISK 5
999. LONDON BEAT 1 MEG
1000. COMPUTER WORLDS MUSIC 4

### UTILITIES 1

142. LABEL DESIGNER
143. THE HEB
152. QUICK-BASE
164. RAINBOW WRITER
183. COMMS DISK II
193. A RENDER
249. FREE WARE UTILS
333. VOICES 8
923. PRINTER DRIVERS
1157. CLIGHT
1169. VIRUS-FREE HOME UTILITIES
1165. AUDIO UTILS
1208. DATABASE WIZARD
1299. THE RIPPERS GUIDE
1310. MASTER VIRUS KILLER V2.1
1311. IMAWINE
1368. SPECY EMULATOR ETC
1370. UNBELIEVABLE UTILS 2
1399. SCENE GENERATOR
1406. VPP UTILS
1435. JAWCRACKER
1469. ABRIDGE
1507. DIRECT ACTION V2.01
1508. AMIBASE
1512. PENDAL UTILITIES II
1547. ADVENTURE WRITER
1634. HOLY SMOKE PACK 1

Send cheques or Postal Orders to: VIRUS FREE PD, 23 Elborough Rd, Moredon, Swindon, Wilts SN2 2LS, England

Tel: 0793 512321

Fax: 0793 512075



# Evesham Micros

PRICES INC. DELIVERY & VAT @ 17.5%

Express Courier Delivery :  
(UK Mainland Only) £6.50 Extra



BUY WITH CONFIDENCE from one of the longest established companies in their field, with a reputation for good service and prices. We have invested heavily in a computer system to enable our Technicians to provide up-to-the-minute stock information, coupled with highly efficient order processing. Our fully equipped Microshop ensures we can carry and deliver any reply on our premises. We feel sure that you won't be disappointed if you choose Evesham Micros.

## HOW TO ORDER....

 **Call us now on**  
**0386 765500**  
 Lines open Monday - Saturday,  
9.00am - 5.30pm

Send Cheque, Postal Order or  
ACCESS/VISA card details to:

**Evesham Micros Ltd**  
Unit 9, St Richards Rd.  
Evesham, Worcs  
WR11 6XJ

 **ACCESS / VISA**  
Cards Welcome 

Government, Education & PLC orders welcome  
Same day despatch whenever possible  
Express Courier delivery (UK Mainland only) £6.50 extra  
Please note that 5 working days must be allowed for  
personal cheque clearance.

**Mail Order Fax: 0386-765354**

## RETAIL SHOWROOMS

Unit 9 St Richards Road, Evesham  
Worcestershire WR11 6XJ  
**☎ 0386 765180**  
fax: 0386 765354  
Open Mon-Sat: 9.00 - 5.30

5 Gisson Rd, Cambridge CB1 2HA  
**☎ 0223 323898**  
fax: 0223 323883  
Open Mon-Fri: 9.30 - 6.30  
and Sat: 9.00 - 5.30  
Corporate Sales Dept. ☎ 89M dealer

1762 Pershore Road, Cotteridge  
Birmingham B30 3BH  
**☎ 021 458 4564**  
fax: 021 433 3821  
Open Mon-Sat: 9.00 - 5.30

**TECHNICAL SUPPORT ☎ 0386-40303**  
Monday to Friday, 10.00 - 5.30

**12 MONTHS WARRANTY  
ON ALL PRODUCTS**

All details correct at time of going to press. All goods subject to availability

## AMIGA 1500/2000 UPGRADES HARD DRIVE / RAM UPGRADE BOARD KIT

Kits comprise of full size hard disk controller cards  
incorporating unpopulated SIMMS RAM expansion sockets  
for accommodating up to 8Mb RAM. PLUS high speed, fast  
access NEC SCSI hard disks.

**40MB HARD DRIVE & INTERFACE / RAM CARD ... £349.00**  
**100MB HARD DRIVE & INTERFACE / RAM CARD ... £499.00**

PLEASE NOTE: These are unpopulated RAM sockets. Add £119.00 per  
2Mb RAM required.

**8Mb RAM Expansion Card with 2Mb Fitted**  
easily upgradable to 4Mb, 6Mb or 8Mb **£149.95**

## A500 HARD DISKS

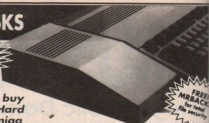
**PRICE  
BREAKTHROUGH!**

**AT LAST... the chance to buy  
Quality, High Capacity Hard  
Disk Systems for the Amiga  
500 at realistically low prices!**

**40Mb MODEL ONLY £299**

**100Mb MODEL ONLY £449**

2Mb RAM Version: ADD £100 - 4Mb RAM Version: ADD £200



- NEC SCSI Hard Disk Mechanisms for optimum performance
- 20Mb Access Time & Outgassing
- Includes its own Dedicated PSU. CSM recommends against use of Hard Disks without independent power supply
- Option for up to 48Mb of additional RAM Expansion
- Includes SCSI Throughput at rear for further expansion
- High quality metal casing, colour matched to the Amiga 1000
- Includes "WHIRLCLIP Pro" as well as Configuration/Format software

**FREE  
MAGNETIC  
file security**

## AMIGA A500 SOLDERLESS RAM UPGRADES



**512K ONLY**  
**RAM/CLOCK**  
**UPGRADE** **£28.99**  
inc. VAT and delivery

512K RAM Expansion also  
available without clock :  
**ONLY £24.99**

- Direct replacement for the A501 expansion
- Convenient On / Off Memory Switch
- Auto-recharging battery backed Real-Time Clock
- Compact Unit Size - Ultra-neat design
- Only 4 low power FASTRAMs

## 1.5MB RAM BOARD

- Fully populated board increases total RAM in A500 to 2Mb 1. ➤ Plugs into vacant
- trapezoid area, & connects to "GARY" chip
- Includes auto-recharging battery-backed real-time Clock
- Socketed RAM ICs for accommodating up to 1.5Mb RAM

Unpopulated RAM board with clock ..... £34.95  
RAM Board with 512K FASTRAM installed ..... £54.95  
RAM Board with 1Mb FASTRAM installed ..... £69.95  
RAM Board with 1.5Mb FASTRAM installed ..... £79.00

N.B. The expansion board  
requires Kickstart 1.3 to  
operate  
Kickstart 1.3 upgrade  
available from us for £29.95



**NEW! 'MEGABOARD' ONLY**  
**Connects to your 512K RAM**  
**upgrade to give 1.5MB**  
**£59.95**

With our MEGABOARD, you can further expand your A500's  
memory to a total of 2Mb without disposing of your existing 512K  
upgrade (must be 4 x RAM-chip type, or not exceeding 9cm in length).

MEGABOARD needs Kickstart 1.3  
to operate (Kickstart 1.3 upgrade  
available from us for £29.95).  
Installation requires connection to  
the GARY chip. Easy to follow  
instructions provided.

## 3 1/2" EXTERNAL FLOPPY DRIVES

**AMAZING LOW PRICE !**  
**£54.95**  
including VAT & delivery



- Very quiet
- Slimline design
- Suits any Amiga
- Cooling Vents
- Sleek, high quality metal casing
- Quality Citizen/Sony Drive Mechanism
- On / Off switch on rear of drive
- Full 880K Formatted Capacity
- Long reach connection cable

Also available:  
5.25" External Drive  
40/80 Track Switchable  
Only £99.00 inc. VAT/delivery

## ZY-FI amplified stereo speakers

REALISE THE TRUE SOUND POTENTIAL OF YOUR AMIGA WITH THIS PAIR OF FULL RANGE SPEAKERS!

Your Amiga produces fine quality hi-fi stereo sound. Our quality stereo sound reproduction is the full benefit of this specially designed, great low level, high impedance, built-in amplifier with stereo speaker design of 3 speakers, drivers in each unit, and incorporates a full range with adjustable volume control. From home PSU (included) or from batteries (not included).  
Speaker Dimensions 240x180 x 120mm (9x7x5")

ONLY  
£39.95

## CBM A590 HARD DISK

Good quality Commodore 20MB Hard Disk including its own PSU and built-in cooling fan. Features registers for up to 2MB of on-board FASTRAM expansion (see below). Stereo Access time, with up to 10 addresses, transfer rate. Audiotape when used with Kickstart 1.3.

ONLY  
£279.00

### CBM A590 UPGRADES

RAM upgrades fitted free of charge when bought with Amiga.

512K RAM Upgrade	£ 59.95
1Mb RAM Upgrade	£ 99.95
2Mb RAM Upgrade	£ 149.95
NEC 40MB SCSI Drive replacement mechanism	£ 199.95
NEC 100MB SCSI Drive replacement mechanism	£ 299.95

## A590 ADD-ON HARD DRIVES

**A590 OUTSIDE:** Expand your hard disk storage further with one of our add-on, externally cased SCSI Hard Drives, featuring 20MB outgrowing NEC mechanisms with separate power supply. Simply plug into the socket provided on the rear of the A590 Hard Disk unit.

**External 40MB SCSI Drive cased with PSU** £ 299.00  
to directly add-on to the Commodore A590

**External 100MB SCSI Drive cased with PSU** £ 449.00

## TRUEMOUSE

WE GUARANTEE that this is the smoothest, most responsive and accurate replacement mouse you can buy for the Amiga. Excellent performance, amazing low price!

£17.95 SATISFACTION GUARANTEED  
£ 37.95

**GOLDEN IMAGE OPTICAL SOUND AMIGA/ST compatible - excellent travel & accuracy assured** £ 37.95

## GOLDEN IMAGE HANDY SCANNER & TOUCH-UP

Outstanding quality, excellent value for money - this package includes a 100-400dpi scanner with optical, colour, and grayscale (grey) TOUCH-UP image package which scans the scanner directly. Scanner includes optical sensor and a package for accurate image copy. Scan either line-art or grey images up to 400x600. Many image enhancement & special effects available from within Touch-Up. A sensible investment for Desktop Publishing work.

ONLY £179.00 INCLUDING VAT AND DELIVERY

## NEW! ROCGEN GENLOCK

YOU WILL HAVE TO PAY AT LEAST TWICE AS MUCH MONEY TO obtain a similar level of quality, function and sophistication offered by many name GENLOCK cards, which are compatible to all Amiga's! Many special features include the ability to record graphics & animations on video records, overlay graphic and text onto video and use your domestic colour TV as a colour monitor. Capable of smooth and stable fulling and overlaying effects with special timing levels.

ONLY £114.99

## PHILIPS 15" TV/MONITOR

With its dedicated monitor, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control 'Teletext TV' or an excellent low price! NEW Teletext features dual glass screen for improved contrast, plus full range 2-way stereo sound output!

£269.00 including VAT, delivery & cables

Philips CM8833 Mk.II including cable £ 239.00

# AMIGA

## SPECIAL DEALS

### AMIGA 500 COMPUTER BASE PACK

Features a Genuine UK version 512K Commodore Amiga 500 computer with 1Mb Internal Drive, TV Modulator, Mouse, Power Supply, Kickstart 1.3, etc.

**AMIGA 500 BASE PACKAGE**  
ONLY £ 307.49

**A500 PACK AS ABOVE, WITH 512K RAM/CLOCK FITTED**  
ONLY £ 333.99

**A500 PACK WITH EXTERNAL 3 1/2" DRIVE**  
ONLY £ 357.49

**A500 PACK WITH EXTERNAL 3 1/2" DRIVE AND 512K RAM/CLOCK UPGRADE FITTED**  
ONLY £ 383.99

N.B. Does NOT include extra software included with other packages.

LOOK WHAT ELSE YOU GET WHEN YOU BUY AN AMIGA FEATURE PACK FROM Evesham Micros

**THESE FABULOUS GAMES:**  
Trackball Manager 90 • Subbytes • Asterix • Block Alanche • Jungle Book • Treasure Trap • Dickman • Battle Squadron • Diet Riot • Tank Battle • Nigel Mansell • Last'n Maze PLUS! A wordprocessor and spreadsheet

### AMIGA 500 SCREEN GEMS PACK

Includes Amiga 500 with 1MB RAM, plus 1Mb Drive, TV modulator, 'Night Street', 'The Beast 2', 'Back to the Future 2', 'Days of Thunder', 'Deluxe Paint III'.  
**A500 1Mb SCREEN GEMS PACKAGE** ..... £ 369.99  
**A500 Screen Gems Package PLUS 3 1/2" External Drive** .... £ 419.99

### AMIGA 500 CLASS OF THE 90'S PACK

Pack features A500 computer plus A501 12Mb RAM Upgrade, TV Modulator, 8 software titles, 10 disks, modulator, Video Tape & more.  
**CLASS OF THE 90'S Package** ..... £ 499.00  
**Class of the 90's Pack plus 3 1/2" Drive** ..... £ 549.00

### AMIGA 1500 STARTER PACK

Includes A1500 computer (1Mb RAM, 2 x 3 1/2" Drives, 8 expansion slots), Commodore Hi-Resolution Colour Monitor, plus Software including 'Deluxe Paint III', 'Battle Chess', 'Sim City' and 'The Works' (business software).  
**A1500 STARTER PACKAGE** ..... £ 949.00

## VIRUS PROTECTOR

BANISH VIRUS PROBLEMS!

Our compact Virus Protector fits easily to the Port of the test disk drive in your Amiga system, protecting all internal and external drives from both block viruses. Incorporates a switch to enable or disable the protection facility. **ONLY £9.95**

## REPLACEMENT A500 PSU

Genuine Commodore Amiga A500 type replacement Power Supply Unit. Good quality 'switch mode' type. Super low price! **ONLY £39.95**

## MIDI INTERFACE

Our fully compatible, high quality MIDI interface connects directly with the Amiga serial port and provides IN, OUT & Thru ports for good flexibility. Features LED indicators on each port for diagnostic purposes. Superb compact design. **ONLY £19.95**

## STEREO SOUND SAMPLER

Offering full compatibility with almost any Amiga audio digitiser package, our Sound Sampler features excellent circuitry, leading professional results. The main A/D converter gives a digitising resolution of up to 30KHz, with a test tone. Two phone sockets are provided for stereo line input, plus an option for headphones. Adjustable gain is achieved with built-in control knob. Complete with public domain music containing sound sampling applications / utilities. **ONLY £29.95**

## TRACKBALL

Excellent new high performance trackball, directly compatible to any Amiga or PC. Operates from the mouse or joystick port. Super smooth, accurate and versatile. You probably won't want to use a mouse again after using the Trackball! Total one-handed control. Top quality construction and optical mechanical design, offering high speed and accuracy every time. No driver software needed! **ONLY £29.95**

## NEW! A500 INTERNAL 3.5" REPLACEMENT DRIVE

Fully compatible. Kit includes full fitting instructions. £ 49.95

VHD-Amiga video digitiser package inc. VHS, Chroma	£ 119.99
VCD-Chroma Amiga video frame generation kit from BSW images	£ 59.95
VHD-HD video frame generation kit from BSW images	£ 84.95
MINGEN Genlock Adapter	£ 69.99
SCSI Powerboard Hardware PC Emulator with its own 1Mb of RAM on-board, 512K expansion in Amiga mode	£ 229.99
Kickstart 1.3 Upgrade	£ 29.95
Amiga 800 Disk Cover	£ 4.95

## SOFTWARE

Movie MOVIEWORKS	£ 119.99
Kick World 2	£ 37.95
Protest 10	£ 119.99
Digital Home Accounts	£ 29.95
Deluxe Paint 3	£ 79.95
Music K 1.1	£ 94.95
AMIGOS	£ 37.95
IndoFLEX 1.0	£ 99.95
Giga BASIC V3	£ 39.95
Giga BASIC Compiler	£ 49.95
Demops 2.10	£ 49.95
Demop Animation Studio	£ 99.95

## NEW! olivetti DM124C

Outstanding 24 Pin COLOUR Printer

PROFESSIONAL QUALITY  
24-PIN COLOUR  
PRINTING NOW  
AVAILABLE - AT AN  
AFFORDABLE PRICE!

Combining the advantages of advanced COLOUR output with the superior quality of Olivetti Professional 24-pin printing, the DM124C represents excellent value for money! Consistent high quality is assured every time, with no ink excesses or pale lines at any speed. Price of Mind for trouble-free use is guaranteed, with Olivetti's 12 months On Site Warranty cover.

2400 dpi output in 12, 60 dpi in LG mode. Huge 400K buffer  
24 Pin Colour output. Graphics resolution up to 360 x 180dpi  
Parallel interface. Tractor & Single Sheet Feed as standard  
Complete with cables & 13 MONTHS ON-SITE WARRANTY  
Olivetti DM124C Normal RRP: £ 389.95 inc. VAT

**Evesham Micros ONLY £269.00**  
Special Offer Price inc. VAT, Delivery & cable

- Automatic Cut Sheet Feeder available for only £ 79.95 -

## PRINTERS

Prices include VAT, delivery and cable

### EVESHAM MICROS SPECIAL OFFER!

All Star Printers include 12 months On Site Maintenance

Star LC 10 Best-selling 9-pin printer, 1440Cps.	£ 149.00
Star LC 200 9 Pin Colour, 4 fonts, 180/45Cps.	£ 249.00
Star LC 24-10 24-Pin, 4 fonts, 180/60Cps.	£ 209.00
Star LC 24-200 24-Pin, 5 fonts, 200/45Cps.	£ 249.00
Star LC 24-200C 7 colour version of above	£ 289.00
Star FR-10 9-pin including Colour Upgrade	£ 259.00
Star KB24-10 24-pin including Colour Upgrade	£ 359.00

Citizen Swift 24 24-Pin Colour Printer	£ 279.00
Olivetti 24-100 9-pin high speed 2000Cps printer	£ 269.99
Olivetti DM100S 2000Cps 9-pin, inc. 12 months O/S.M.	£ 219.95
Panasonic KIP1123 good value 24-pin printer	£ 186.95

## NEW! 3 1/2" DRIVE with LED Track Display

High quality double-sided 3 1/2" floppy drive offering the full BBK formatted capacity per 3 1/2" disk. Features a special LED display which accurately shows the current track being accessed during any disk drive activity.

ONLY £74.95

# X-COPY PROFESSIONAL

The essential package for all your BACK-UP needs!  
Now includes HARD DISK BACK-UP & FILE BACK-UP.



\*The most comprehensive back-up utility \*Includes floppy disk back-up, hard disk back-up and file back-up. \*Also backs up ST, IBM etc disks. \*Checks disks for errors. \*Optimises data for faster loading. \*Fast formatting. \*Copies up to 4 disks in 48 seconds. \*Full update service available.

X-COPY PROFESSIONAL caters for all your needs, included in the package is a small hardware interface that plugs into the external disk drive port at the rear of the Amiga and your external disk drive (if you have one) plugs into the back of the interface. This allows the DIGITAL BIT IMAGE COPY MODE to use the ADAPTIVE PULSE WIDTH MODULATION routines to backup virtually all known disks.

**AVAILABLE NOW ONLY £39.99** PLUS £1.00 POSTAGE AND PACKING

**1988 COPYRIGHT ACT.** Siren Software neither condones nor authorises the use of its software for the reproduction of copyrighted software. The facilities offered by X-Copy Pro are intended to back-up users own software, PD Software & other such programs where permission had been given. It is illegal to make copies of copyrighted material without the permission of the copyright holder.

**X-COPY PROFESSIONAL IS THE BEST, GUARANTEED**

**OUR GUARANTEE:** At time of purchase, if you can find a program that is more powerful than X-COPY PRO we will refund your money

#### Ordering X-COPY PROFESSIONAL

Access/Visa orders can be placed by telephoning 061-724 7572. For mail order, fill in the order form and send it with a cheque or postal order to:  
Siren Software, Wilton House,  
Bury Road, Radcliffe,  
Manchester M26 9UR.



Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# BLITZ BASIC

**BLITZ BASIC** has been designed exclusively for the Amiga. It's ease of use, flexibility and speed make it THE AMIGA BASIC for those people who want to create games, educational software or just explore the possibilities that makes the Amiga the success it undoubtedly is!

**BLITZ BASIC** is a full basic compiler that has commands to directly access the **blitter** and sound hardware of the Amiga. It comes with a full 130 page ring bound manual and is available now. **ONLY £69.99 inc VAT**

## X-COPY

PROFESSIONAL ...£39.99

## 3.5" EXTERNAL

FLOPPY .....£54.99

SOUNDBLASTER ....£52.99

## X-COPY PROFESSIONAL

& A 3.5" EXTERNAL

FLOPPY DISK DRIVE

ONLY .....£89.99!

## BLITZ BASIC AND X-COPY

PROFESSIONAL

ONLY .....£99.99!

## ADSPEED only £159.99!

This low cost accelerator offers 80% - 100% performance increase and full compatibility with all software. ADSPEED uses a 16MHz, 68000 cpu and 32K memory cache. If you want to see every program run faster without spending a fortune, ADSPEED is for you!

## A500 INTERNAL HARD DISK

The smallest hard drive/interface in the world is now available for mounting inside your A500! This little sweetheart gives 20MB of high speed performance yet takes absolutely no desk space. includes full instructions for a simple clean no solder installation. Available now - only £379.99

**TO ORDER:** By credit card, please telephone 061-724 7572 or Fax 061-724 4893 stating your credit card number, expiry date, name and address and the products you want to order. By mail, we accept payment by cheque, postal order, Eurocheque or bank draft drawn on a UK bank

**SIREN SOFTWARE, WILTON HOUSE, BURY ROAD, RADCLIFFE, MANCHESTER M26 9UR, ENGLAND**

**TEL: 061-724 7572 or FAX: 061-724 4893**

# THE P.D. MELTDOWN CONTINUES!!! FROM 17-BIT SOFTWARE

89p

BELIEVE  
THE PRICE  
LOVE THE  
SERVICE  
ENJOY  
THE DISKS!!!

Forget any P.D. EARTHQUAKES you might have seen over the last few months. We're going right through the floor with P.D. MELTDOWN. To improve our service even more disks are now only 89p probably the cheapest P.D. anywhere. Our own library has just overtaken the 1070 mark not to mention 480 fish disks, 220 Amos disks including all Licenseware. We provide the very best in disk magazines (OUR UPDATE AND NEWSFLASH), ram expansions, disk drives, come to think of it just about any peripheral you can think of all at competitive prices. There really is no need to use any other library after three years in the biz we think we know how to satisfy the most hardened customer. Join the 20,000 strong members in the very best P.D. library around and find out why

WE ARE THAT BIT BETTER THAN THE REST

LISTED BELOW IS A SELECTION OF OUR VAST RANGE, please add 50p towards postage and packing if you order less than 5 disks. Everybody receives a personal customer number which means all orders are despatched the SAME DAY!!!

WITH PRICES AND SERVICE SECOND TO NONE WE REALLY DO PUT OTHERS IN THE SHADE

## GAMES PACK 3

Truckin on (2 disks)

Shapes  
Battle pong  
Sealence

All four games for  
only £3.75

THATS 75p a disk

17-BIT  
EDUCATIONAL  
PLUS!!!!

5 DISK PACK  
ONLY £3.75

THATS 75p A DISK  
GREAT FOR  
KIDS OF ALL

AGES!!!

GO ON BE A DEVIL  
ORDER A PACK

## BITS + BATS

SECOND DRIVES £55.95

RAM EXPANSIONS £24.95

DUST COVERS £1.99

10 CAPACITY DISK BOXES

ONLY £1.50

80 CAPACITY DISK BOXES

ONLY £5.99

MEGA DOS MANUAL ON

DISK ONLY £5.95

MARBLE MADNESS

ONLY £2.99

WHILE STOCKS LAST

If you want it, we've got it

Tel: 0924 366982

for more details

Have a look at other

PD advertisers in this

magazine then come back

to ours.

I'm sure you will agree we

offer the cheapest PD

around!!!!

17 Bit That Bit Better

## CREATIVE DISKS

- 954 Six Clapnet Disks Spread
- 955 Over These Six Disks, with
- 956 Just About Every Visual
- 957 Image You Can Think Of
- 958 This is Part of The Clapnet
- 959 This is Part of The Clapnet
- 924 Real Time Fractals (Brill)
- 916 Ham Lab (Great Util)
- 897 RSI Demo Maker
- 817 Noiseplayer (any module)
- 784 Bowl V2
- 763 Clapnet
- 746 Med V2
- 918 Med V3 The Best Music Util
- 778 Music Util 4
- 684 Fractal Flight
- 677 Clapnet
- 566 Odds & Sods
- 599 - 560 Newtek Demo (1 Meg)
- 517 Pictionary Demo
- 505 Pictionary Util
- 482 GMC Music Util
- 479 GMC Instruments Disk
- 478 Soundmonitor V1
- 466 ARP V1 3 Amiga replacement
- 444 Comm Disk 3
- 353 Ghostwriter V2
- 300 Ghostwriter Demo (for above)
- 265 Home Utis
- 208, 209 Photobab Demo
- 185, 186, 187, 188 All Instruments
- 184 Spacewriter
- 769 Comms 2
- 793 Jazz Bench

## 1 MEG ONLY

- 912 Batman Anim
- 911 Applecups
- 909 Porky Pig
- 906 Bust Anim
- 904 Raiders Of The Lost Ark
- 903 Peg Anim
- 861A, 861B 2 Disk 2
- 809 Plane Anim
- 807 Flight Anim
- 808 3 Stealthy Anims
- 776, 777 2 Disks Star Wars
- 764 Madonna
- 583 Busby Bee
- 513 Gymnast
- 500 Magician
- 485 Cool Cougar
- 464 Jet Sphere
- 463 Ghost Pool
- 240 Luxor Teenager
- 181 Dragons Lair
- 031 Car + Unicorn
- 591 The Run
- 591 Robocob Anim
- 780 Epic Demo
- 628, 629 D. Lair 2

## THE VERY LATEST DISKS

- 1031 Rap Around The Clock
- 1030 Hardline Sound
- 1029 Cyron Music Disk
- 1028 Ecstasy Music
- 1027A The Wall Demo By Pink
- 1027B Floyd Spread Over
- 1027C 4 Disks
- 1027D This Is Truly
- 1027E Amazing
- 1027F Say N Today
- 1026 Silents Global Trash
- 1025 Ham Pigs (Brilliant)
- 1024 Text Plus 2.2E (Great)
- 1023 Princess & The Movies (Meg)
- 1022 Walker V Army (1 Meg Anim)
- 1021 Emerald Mine (Game)
- 1020 Goldfire Music
- 1019 Banging Raves Music
- 1018 Kahana Wal Demo (Sunning)
- 1017 Sealence (Ace Game) only 89p
- 1016 Accetions Music
- 1015 Gary Tower Art (17-Bit)
- 1014 Med Instruments
- 1013 Med Instruments
- 1012 Med Instruments
- 1011 Rhythmatronic Music
- 1010 Technology
- 1009 Anarchy System Violation
- 1008 Bass Mega Demo
- 1007 Sculpt 3D Fonts
- 1006 Withdrawn
- 1005 Amiga Tools (Amazing)
- 1004 Intro's 56 (Sunning Demo's)
- 1003 Scanners Anim on 2 Disks
- 1003B Disk Two of above
- 1002 Topless Girls!!!!
- 1001 Educational Stuff
- 1000 More Educational Stuff
- 999 Trackball Anim (1 Meg)
- 998 Asteroid Field Anim (1Meg)
- 997 Fantasy Force Music
- 996 Scrapers Music
- 995 Games Cheats 1
- 994 Robocob 2 Slides
- 993 Cool Fridge Demo

## THE VERY LATEST DISKS

- 1073 Golf Recorder by P. Wilson
- 1072 Meaning Of Life on Two
- 1072B Disks Funny
- 1071 Crossword Creator
- 1070 Life On Earth Slideshow
- 1069 Altac Great Game
- 1068 Word Frenzy Spell Checkers
- 1067 Green Peace Demo
- 1066 Led Zeplin Samples
- 1065 Tron, Sball, Text Plus
- 1064 Yazzee Track Display
- 1063 Bits & Bats, Games + Utis
- 1062 Useful Utis and Games
- 1061 Intro's 56 Sunning Stuff!!
- 1060 Intro's 56 Even Better
- 1059 Zeus The Game
- 1058 Intro's 57 Specially Created
- 1057 Intro's 57 Specially Created
- 1056 Music Papers (Lots of Em!!)
- 1055 Biorhythms Program
- 1054 Jetson Overload (Music)
- 1053A Trukin On Game On Two
- 1053B Disks (Five Parts of 500)
- 1051A Vivaldi Four Seasons
- 1051B Classical Music (two disks)
- 1050 Dynamite Fonts
- 1049 Empire (Great Strategy Game)
- 1048 Darkness Mega Demo
- 1047 Shapes (Brilliant Games)
- 1046 Crusaders Gasomatic On 2 Disks (Brilliant)
- 1045 Light Mega Demo (Ace)
- 1044 Gallows Mega Demo
- 1043 Dipped Gems (Music)
- 1042 Dominators Mega Demo
- 1041 Prologic Music Disk
- 1040 Aurora Mega Demo
- 1039 Scrapers Music Disk
- 1038 Brill New Virus Killer Disk
- 1037 Printer Drivers Lots of em
- 1036 Plasmaticonic Music
- 1035 Alcatraz 22 Min Time (Great)
- 1034 Brainstorm
- 1033 Juggette 2 (1 Meg Game)

## ORDERING DISCS ETC

We take all major credit cards and are open from 9.00AM to 8.00PM Mon to Thurs and 9.00AM to 5.30PM Fridays & Saturdays. Cheques and Postal orders should be made payable to:

17-Bit Software  
PO Box 97 Wakefield WF1 1XX.  
Dept. Amiga Computing.

If no one is there then our leaflet Amiga Please will gladly take your order Tel: 0924 366982

We also are the sole distributors of Newsflash, the brilliant 2 disk magazine. Plus we stock all Amos disks including 21 Licenseware Disks (13.50 each). Which are all of commercial quality, is there really any doubt. That WE ARE THAT BIT BETTER

Try Our  
Update  
Magazine  
currently 20  
"Computer  
Shopper say  
10 out of 10"

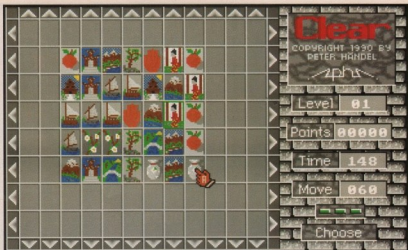
**W**e kick off this month with a selection of rather splendid games. If you find puzzle games appealing then AmigaNuts disk #1077 could be just the right prescription for an otherwise uneventful day with your Amiga.

### Clear

**Clear** is a tile game which is quite fun to play and more compelling the longer you stay with it. The idea is to rid the table of matching symbols by bringing them together in a horizontal or vertical row and then clicking on the first and last of the bunch to remove them from the board.

To manoeuvre them you move a line horizontally or vertically, one tile space at a time, by selecting the gadgets which are placed around the screen.

There are hazards to avoid, such as keeping the tiled hands away from each other – if the hands come together you



The game fun

# PUBLIC DOMAIN

PD pundit  
Pete Bullock  
digs through  
the demos

will find that the rows the hands are on can't be moved and you're stuck.

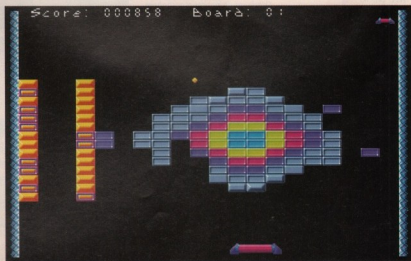
It's an enjoyable and addictive game which has been converted from the popular arcade version. The graphics are quite pleasant but the sound is practically non-existent. Overall, it's one worth having.

### Megaball

There are games whose appeal lasts for years and years and always seem to pop up at some stage in a computer's development.

Breakout is one of these. Invented some nine or 10 years ago, it now appears on Goldstar's disk #G43 and has been renamed **Megaball**.

There always seems to be someone willing to code versions of this popular game for the PD scene and there are a number of versions available on other disks, but Megaball is worth a look. There's no point in explaining this game because everybody knows what



Goldstar breakout with more classic PD

Breakout or its clones such as Arkanoid or Giganoid are like, except to say that the use of colour is excellent, and there are a number of pieces you can collect for extra options within the game, such as magnetising your bat and enlarging it to practically the same width as the screen. Marvellous!

The music and sound effects are also brilliant and it all makes for a splendidly entertaining time.

## Rubik's revenge

Around 1982/3 a craze overtook the nation and almost no-one was immune! It was to sweep the oceans and worm its way into the minds of children and adults alike.

The fiendishly mind-boggling Rubik's cube, created by a Hungarian mathematician, is still with us. Now, you can re-live the experience with a game from Riverdene PD called Cubulus. It's a Rubik's cube in two dimensions.

You are presented with a board containing nine sets of 16 blocks in differing colours. The object of the game, as with the original cube, is to rearrange the colours and put them back in the correct order. The game is similar in style to Clear and is just as addictive.

The blocks are mixed up by the computer and then it's all up to you. The gameplay method is again similar to Clear – you move the blocks by means of arrows placed around the sides of the board. You can move left or right and up or down. It may take some



Rubik's cube without the thumb ache

time to do this but it feels great when it's finished!

It's tremendously entertaining stuff and well worth the dosh. I've seen games like this being sold for over £20 in the shops – why part with so much when you need spend so little?

The PD scene is coming up trumps with good quality entertainment that wouldn't be out of place in an arcade and costs a lot less than some commercial offerings.

## Ye gods

If you're a fan of the Tetris-type games, I have two which may be right up your street – namely Shapes and Zeus. These are terrific puzzle games that grow on you the more you play them.

In Shapes you have to fill a space, a bit like a cross, with different shapes. Only a certain number of each shape are available and you have to use your

skill and judgement to determine what shapes will fit where.

You choose a shape and an outline of it will appear where your mouse pointer would be. Using the mouse to position the shape you can tell if your chosen shape will fit the cross. It may take some time to figure out what final shapes you need and you'll be fighting the timer to finish before it counts to zero.

Additive and compelling Shapes will keep you occupied for quite some time and is on Seventeen Bit Software disk #1046.

Zeus is another fine example of the quality you can expect from the current PD scene. The object here is to match up similar objects while moving others around. This is not as easy as it sounds

as a number of features make this one of the most puzzling games I have seen for quite some time.

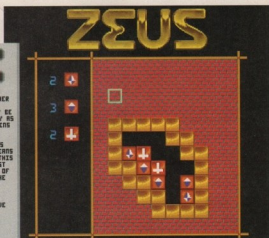
Individual matching objects must be placed side by side or on top of one another. The only problem is this may entail dropping them from a height on to another object which may or may not be the last of its type on this level.

Tremendously enjoyable and having a quality unseen in many commercial games. Zeus is available on Seventeen Bit Software disk #1058.

## Boulderdash

If you ever owned a Commodore 64, the chances are you bought the game Boulderdash. If you didn't, you missed out on a very addictive game whose

6 It's tremendously entertaining stuff and well worth the dosh ;



Variations on the Tetris theme

# Goldstar Computers (EC) Ltd.

P.O. BOX 2, TYLDESLEY, MANCHESTER, M29 7BN

(0942) 895320

WE HAVE BEEN APPOINTED THE OFFICIAL UK DISTRIBUTOR FOR  
**PREMIER SOFTWARE™ OF THE USA.**

Public Domain like you've never seen...



Premier Software™ is supplied EXACTLY the same as it is distributed in the USA. All disks have full colour labels and packed as sets, a printed list is supplied with each set.

**Premier™ Prices**  
(Don't forget postal charges - see bottom of page)  
Single Disks ..... £1.50 each  
Two Disk sets ..... £2.95  
Three Disk sets ..... £4.40  
Four Disk sets ..... £5.85  
Five Disk sets ..... £7.30  
Six Disk sets ..... £8.75  
Seven Disk sets ..... £10.00

## DISK OF THE MONTH CT SCAN - For you want to be doctors.

The kind they produce with the million pound scanners !!

**Single Disk £1.50**

## OUR OWN LIBRARY REMAINS AT

We now stock 1,600 disks!

**99p**

**PER DISK ! plus p&p  
Catalogue Disk 50p.**

UTILITIES	DEMOS
006 DAVIES DESIGN CREATOR - AND UTILITIES	006/05 REPTER MICROGRAPH - EXCELLENT
007 D-COPY - COMMERCIAL QUALITY UTILITY	006/07 ALICIA DENTAL KIT - GOOD
008 ECOMANIA - SHAPE & EDIT FONTS	008 BALANCE PACK - FASCINATING UNCLE
009 SPEEDBENCH - FAST LOADING W/B	008/05 KATAMARI - SUPER LOADING MIRROR
010 LAZARUS - ENHANCED W/B	009 SCOTT'S ORGASIM - PRESENTATION
011 DOPPELMEISTER - VERY GOOD	009 QUANTUM TIME TRIP - INCLUDES COMA
012 DOWNSIDE MEDIA UTILITIES - OVER 50	010 COLOUR CYCLING - FANTASTIC EFFECTS
013 RAZOR TRUCK - 100 UTILITY WITH DOGS	010/05 PHENOMENA ENIGMA - THE VERY BEST
014 NUMBER CRUNCHER - SETS OF TESTS	010/07 RITE BUSTERS DEMO - NEAR DOME
015 MASTER VISION KILLER V.I. - KILLS 120	
016 POINT & SHOOT - FOR POINT AND ETC.	
017 C-LIGHT - EX COMMERCIAL BAY TRACKER	
018 DOP - ANOTHER BAY TRACKER	
019 DARTING 3 - 4 UTILITY	
020 DARTING 3 - 4 UTILITY	
021 DARTING 3 - 4 UTILITY	
022 DARTING 3 - 4 UTILITY	
023 DARTING 3 - 4 UTILITY	
024 DARTING 3 - 4 UTILITY	
025 DARTING 3 - 4 UTILITY	
026 DARTING 3 - 4 UTILITY	
027 DARTING 3 - 4 UTILITY	
028 DARTING 3 - 4 UTILITY	
029 DARTING 3 - 4 UTILITY	
030 DARTING 3 - 4 UTILITY	
031 DARTING 3 - 4 UTILITY	
032 DARTING 3 - 4 UTILITY	
033 DARTING 3 - 4 UTILITY	
034 DARTING 3 - 4 UTILITY	
035 DARTING 3 - 4 UTILITY	
036 DARTING 3 - 4 UTILITY	
037 DARTING 3 - 4 UTILITY	
038 DARTING 3 - 4 UTILITY	
039 DARTING 3 - 4 UTILITY	
040 DARTING 3 - 4 UTILITY	
041 DARTING 3 - 4 UTILITY	
042 DARTING 3 - 4 UTILITY	
043 DARTING 3 - 4 UTILITY	
044 DARTING 3 - 4 UTILITY	
045 DARTING 3 - 4 UTILITY	
046 DARTING 3 - 4 UTILITY	
047 DARTING 3 - 4 UTILITY	
048 DARTING 3 - 4 UTILITY	
049 DARTING 3 - 4 UTILITY	
050 DARTING 3 - 4 UTILITY	
051 DARTING 3 - 4 UTILITY	
052 DARTING 3 - 4 UTILITY	
053 DARTING 3 - 4 UTILITY	
054 DARTING 3 - 4 UTILITY	
055 DARTING 3 - 4 UTILITY	
056 DARTING 3 - 4 UTILITY	
057 DARTING 3 - 4 UTILITY	
058 DARTING 3 - 4 UTILITY	
059 DARTING 3 - 4 UTILITY	
060 DARTING 3 - 4 UTILITY	
061 DARTING 3 - 4 UTILITY	
062 DARTING 3 - 4 UTILITY	
063 DARTING 3 - 4 UTILITY	
064 DARTING 3 - 4 UTILITY	
065 DARTING 3 - 4 UTILITY	
066 DARTING 3 - 4 UTILITY	
067 DARTING 3 - 4 UTILITY	
068 DARTING 3 - 4 UTILITY	
069 DARTING 3 - 4 UTILITY	
070 DARTING 3 - 4 UTILITY	
071 DARTING 3 - 4 UTILITY	
072 DARTING 3 - 4 UTILITY	
073 DARTING 3 - 4 UTILITY	
074 DARTING 3 - 4 UTILITY	
075 DARTING 3 - 4 UTILITY	
076 DARTING 3 - 4 UTILITY	
077 DARTING 3 - 4 UTILITY	
078 DARTING 3 - 4 UTILITY	
079 DARTING 3 - 4 UTILITY	
080 DARTING 3 - 4 UTILITY	
081 DARTING 3 - 4 UTILITY	
082 DARTING 3 - 4 UTILITY	
083 DARTING 3 - 4 UTILITY	
084 DARTING 3 - 4 UTILITY	
085 DARTING 3 - 4 UTILITY	
086 DARTING 3 - 4 UTILITY	
087 DARTING 3 - 4 UTILITY	
088 DARTING 3 - 4 UTILITY	
089 DARTING 3 - 4 UTILITY	
090 DARTING 3 - 4 UTILITY	
091 DARTING 3 - 4 UTILITY	
092 DARTING 3 - 4 UTILITY	
093 DARTING 3 - 4 UTILITY	
094 DARTING 3 - 4 UTILITY	
095 DARTING 3 - 4 UTILITY	
096 DARTING 3 - 4 UTILITY	
097 DARTING 3 - 4 UTILITY	
098 DARTING 3 - 4 UTILITY	
099 DARTING 3 - 4 UTILITY	
100 DARTING 3 - 4 UTILITY	

## A SMALL SELECTION FROM A BIG NAME

- FONT LIB -** A library of four directories each with a dozen fonts, displayable and selectable by icons. **Single Disk set - £1.50.**
- System, Disk, Icon, Print, Desktop Tools and Utilities.** A Three Disk set - **£7.30.**
- MANDELMANIA -** Nine excellent Mandelbrot set programs. C.P. Mandel, Julia, MandFX30, R. Mand, Turbomandel, Mandel Mountains, Mandel, M. Path. A Two Disk set - **£2.95.**
- ELECTRIC WORD -** The Bible, King James version, with Tetrax Text Editor. Cutting, pasting and saving to Disk or printing with PP more. A Three Disk set - **£4.40.**
- DESKBENCH -** A 1.5 Workbench Disk with the Deskbench Modular Icon System. A Three Disk set - **£4.40.**
- GAMEMASTER -** A massive seventy games on seven disks, huge value for money! A Seven Disk set - **£10.**
- POINTER LIB -** Library of Pointers, loads of them. **Single Disk - £1.50.**
- ICON COLLECTION #1 -** Lots of Icons for your own use. **Single Disk - £1.50.**
- ICON COLLECTION #2 -** Yet more Icons for your own use. **Single Disk - £1.50.**

There Are Over 150 more Premier™ Disks Available.

Premier™ Catalogue Disk 50p.  
Please Note, Most Of The Premier™ Collection Are Workbench Access!

## UTILITIES

006 DAVIES DESIGN CREATOR - AND UTILITIES	006/05 REPTER MICROGRAPH - EXCELLENT	001 SPACE BUBBLES - BORDO VALLEY	001/05 ELITE TRACK - INCLUDES GIBBON TUTOR
007 D-COPY - COMMERCIAL QUALITY UTILITY	006/07 ALICIA DENTAL KIT - GOOD	001/05 REAL 3D - EXCELLENT DEMO	001/05 LEARN & PLAY - FOR YOUNG KIDS
008 ECOMANIA - SHAPE & EDIT FONTS	008 BALANCE PACK - FASCINATING UNCLE	002 DAZ DRAGON - VALLEY & MERE	002/05 GIBBS SOLUTIONS - TO OVER 120 GAMES
009 SPEEDBENCH - FAST LOADING W/B	008/05 KATAMARI - SUPER LOADING MIRROR	002/05 POKERSTOCK BRAGG - EXCELLENT	002/05 JUNGLE COACHING BOOK - VERY GOOD
010 LAZARUS - ENHANCED W/B	009 SCOTT'S ORGASIM - PRESENTATION	003 DRYN VISION - VALLEY & MERE	003/05 RETURN TO EARTH - EXTREMELY GOOD
011 DOPPELMEISTER - VERY GOOD	009 QUANTUM TIME TRIP - INCLUDES COMA	003/05 INCLINER II - OVER 150000 PICS	003/05 TURBOMAN - PLAYABLE VIDEO
012 DOWNSIDE MEDIA UTILITIES - OVER 50	010 COLOUR CYCLING - FANTASTIC EFFECTS	004 ARCADE RAMPY - VERY GOOD	004/05 STARBURST - TA & GAMM. BRILL
013 RAZOR TRUCK - 100 UTILITY WITH DOGS	010/05 PHENOMENA ENIGMA - THE VERY BEST	004/05 INCLINER II - OVER 150000 PICS	004/05 TURBOMAN - PLAYABLE VIDEO
014 NUMBER CRUNCHER - SETS OF TESTS	010/07 RITE BUSTERS DEMO - NEAR DOME	005 AGNOSTIC - F.R. SUPER	005/05 STARBURST - TA & GAMM. BRILL
015 MASTER VISION KILLER V.I. - KILLS 120		005/05 INCLINER II - OVER 150000 PICS	005/05 TURBOMAN - PLAYABLE VIDEO
016 POINT & SHOOT - FOR POINT AND ETC.		006 AGNOSTIC - F.R. SUPER	006/05 STARBURST - TA & GAMM. BRILL
017 C-LIGHT - EX COMMERCIAL BAY TRACKER		006/05 INCLINER II - OVER 150000 PICS	006/05 TURBOMAN - PLAYABLE VIDEO
018 DOP - ANOTHER BAY TRACKER		007 AGNOSTIC - F.R. SUPER	007/05 STARBURST - TA & GAMM. BRILL
019 DARTING 3 - 4 UTILITY		007/05 INCLINER II - OVER 150000 PICS	007/05 TURBOMAN - PLAYABLE VIDEO
020 DARTING 3 - 4 UTILITY		008 AGNOSTIC - F.R. SUPER	008/05 STARBURST - TA & GAMM. BRILL
021 DARTING 3 - 4 UTILITY		008/05 INCLINER II - OVER 150000 PICS	008/05 TURBOMAN - PLAYABLE VIDEO
022 DARTING 3 - 4 UTILITY		009 AGNOSTIC - F.R. SUPER	009/05 STARBURST - TA & GAMM. BRILL
023 DARTING 3 - 4 UTILITY		009/05 INCLINER II - OVER 150000 PICS	009/05 TURBOMAN - PLAYABLE VIDEO
024 DARTING 3 - 4 UTILITY		010 AGNOSTIC - F.R. SUPER	010/05 STARBURST - TA & GAMM. BRILL
025 DARTING 3 - 4 UTILITY		010/05 INCLINER II - OVER 150000 PICS	010/05 TURBOMAN - PLAYABLE VIDEO
026 DARTING 3 - 4 UTILITY		011 AGNOSTIC - F.R. SUPER	011/05 STARBURST - TA & GAMM. BRILL
027 DARTING 3 - 4 UTILITY		011/05 INCLINER II - OVER 150000 PICS	011/05 TURBOMAN - PLAYABLE VIDEO
028 DARTING 3 - 4 UTILITY		012 AGNOSTIC - F.R. SUPER	012/05 STARBURST - TA & GAMM. BRILL
029 DARTING 3 - 4 UTILITY		012/05 INCLINER II - OVER 150000 PICS	012/05 TURBOMAN - PLAYABLE VIDEO
030 DARTING 3 - 4 UTILITY		013 AGNOSTIC - F.R. SUPER	013/05 STARBURST - TA & GAMM. BRILL
031 DARTING 3 - 4 UTILITY		013/05 INCLINER II - OVER 150000 PICS	013/05 TURBOMAN - PLAYABLE VIDEO
032 DARTING 3 - 4 UTILITY		014 AGNOSTIC - F.R. SUPER	014/05 STARBURST - TA & GAMM. BRILL
033 DARTING 3 - 4 UTILITY		014/05 INCLINER II - OVER 150000 PICS	014/05 TURBOMAN - PLAYABLE VIDEO
034 DARTING 3 - 4 UTILITY		015 AGNOSTIC - F.R. SUPER	015/05 STARBURST - TA & GAMM. BRILL
035 DARTING 3 - 4 UTILITY		015/05 INCLINER II - OVER 150000 PICS	015/05 TURBOMAN - PLAYABLE VIDEO
036 DARTING 3 - 4 UTILITY		016 AGNOSTIC - F.R. SUPER	016/05 STARBURST - TA & GAMM. BRILL
037 DARTING 3 - 4 UTILITY		016/05 INCLINER II - OVER 150000 PICS	016/05 TURBOMAN - PLAYABLE VIDEO
038 DARTING 3 - 4 UTILITY		017 AGNOSTIC - F.R. SUPER	017/05 STARBURST - TA & GAMM. BRILL
039 DARTING 3 - 4 UTILITY		017/05 INCLINER II - OVER 150000 PICS	017/05 TURBOMAN - PLAYABLE VIDEO
040 DARTING 3 - 4 UTILITY		018 AGNOSTIC - F.R. SUPER	018/05 STARBURST - TA & GAMM. BRILL
041 DARTING 3 - 4 UTILITY		018/05 INCLINER II - OVER 150000 PICS	018/05 TURBOMAN - PLAYABLE VIDEO
042 DARTING 3 - 4 UTILITY		019 AGNOSTIC - F.R. SUPER	019/05 STARBURST - TA & GAMM. BRILL
043 DARTING 3 - 4 UTILITY		019/05 INCLINER II - OVER 150000 PICS	019/05 TURBOMAN - PLAYABLE VIDEO
044 DARTING 3 - 4 UTILITY		020 AGNOSTIC - F.R. SUPER	020/05 STARBURST - TA & GAMM. BRILL
045 DARTING 3 - 4 UTILITY		020/05 INCLINER II - OVER 150000 PICS	020/05 TURBOMAN - PLAYABLE VIDEO
046 DARTING 3 - 4 UTILITY		021 AGNOSTIC - F.R. SUPER	021/05 STARBURST - TA & GAMM. BRILL
047 DARTING 3 - 4 UTILITY		021/05 INCLINER II - OVER 150000 PICS	021/05 TURBOMAN - PLAYABLE VIDEO
048 DARTING 3 - 4 UTILITY		022 AGNOSTIC - F.R. SUPER	022/05 STARBURST - TA & GAMM. BRILL
049 DARTING 3 - 4 UTILITY		022/05 INCLINER II - OVER 150000 PICS	022/05 TURBOMAN - PLAYABLE VIDEO
050 DARTING 3 - 4 UTILITY		023 AGNOSTIC - F.R. SUPER	023/05 STARBURST - TA & GAMM. BRILL
051 DARTING 3 - 4 UTILITY		023/05 INCLINER II - OVER 150000 PICS	023/05 TURBOMAN - PLAYABLE VIDEO
052 DARTING 3 - 4 UTILITY		024 AGNOSTIC - F.R. SUPER	024/05 STARBURST - TA & GAMM. BRILL
053 DARTING 3 - 4 UTILITY		024/05 INCLINER II - OVER 150000 PICS	024/05 TURBOMAN - PLAYABLE VIDEO
054 DARTING 3 - 4 UTILITY		025 AGNOSTIC - F.R. SUPER	025/05 STARBURST - TA & GAMM. BRILL
055 DARTING 3 - 4 UTILITY		025/05 INCLINER II - OVER 150000 PICS	025/05 TURBOMAN - PLAYABLE VIDEO
056 DARTING 3 - 4 UTILITY		026 AGNOSTIC - F.R. SUPER	026/05 STARBURST - TA & GAMM. BRILL
057 DARTING 3 - 4 UTILITY		026/05 INCLINER II - OVER 150000 PICS	026/05 TURBOMAN - PLAYABLE VIDEO
058 DARTING 3 - 4 UTILITY		027 AGNOSTIC - F.R. SUPER	027/05 STARBURST - TA & GAMM. BRILL
059 DARTING 3 - 4 UTILITY		027/05 INCLINER II - OVER 150000 PICS	027/05 TURBOMAN - PLAYABLE VIDEO
060 DARTING 3 - 4 UTILITY		028 AGNOSTIC - F.R. SUPER	028/05 STARBURST - TA & GAMM. BRILL
061 DARTING 3 - 4 UTILITY		028/05 INCLINER II - OVER 150000 PICS	028/05 TURBOMAN - PLAYABLE VIDEO
062 DARTING 3 - 4 UTILITY		029 AGNOSTIC - F.R. SUPER	029/05 STARBURST - TA & GAMM. BRILL
063 DARTING 3 - 4 UTILITY		029/05 INCLINER II - OVER 150000 PICS	029/05 TURBOMAN - PLAYABLE VIDEO
064 DARTING 3 - 4 UTILITY		030 AGNOSTIC - F.R. SUPER	030/05 STARBURST - TA & GAMM. BRILL
065 DARTING 3 - 4 UTILITY		030/05 INCLINER II - OVER 150000 PICS	030/05 TURBOMAN - PLAYABLE VIDEO
066 DARTING 3 - 4 UTILITY		031 AGNOSTIC - F.R. SUPER	031/05 STARBURST - TA & GAMM. BRILL
067 DARTING 3 - 4 UTILITY		031/05 INCLINER II - OVER 150000 PICS	031/05 TURBOMAN - PLAYABLE VIDEO
068 DARTING 3 - 4 UTILITY		032 AGNOSTIC - F.R. SUPER	032/05 STARBURST - TA & GAMM. BRILL
069 DARTING 3 - 4 UTILITY		032/05 INCLINER II - OVER 150000 PICS	032/05 TURBOMAN - PLAYABLE VIDEO
070 DARTING 3 - 4 UTILITY		033 AGNOSTIC - F.R. SUPER	033/05 STARBURST - TA & GAMM. BRILL
071 DARTING 3 - 4 UTILITY		033/05 INCLINER II - OVER 150000 PICS	033/05 TURBOMAN - PLAYABLE VIDEO
072 DARTING 3 - 4 UTILITY		034 AGNOSTIC - F.R. SUPER	034/05 STARBURST - TA & GAMM. BRILL
073 DARTING 3 - 4 UTILITY		034/05 INCLINER II - OVER 150000 PICS	034/05 TURBOMAN - PLAYABLE VIDEO
074 DARTING 3 - 4 UTILITY		035 AGNOSTIC - F.R. SUPER	035/05 STARBURST - TA & GAMM. BRILL
075 DARTING 3 - 4 UTILITY		035/05 INCLINER II - OVER 150000 PICS	035/05 TURBOMAN - PLAYABLE VIDEO
076 DARTING 3 - 4 UTILITY		036 AGNOSTIC - F.R. SUPER	036/05 STARBURST - TA & GAMM. BRILL
077 DARTING 3 - 4 UTILITY		036/05 INCLINER II - OVER 150000 PICS	036/05 TURBOMAN - PLAYABLE VIDEO
078 DARTING 3 - 4 UTILITY		037 AGNOSTIC - F.R. SUPER	037/05 STARBURST - TA & GAMM. BRILL
079 DARTING 3 - 4 UTILITY		037/05 INCLINER II - OVER 150000 PICS	037/05 TURBOMAN - PLAYABLE VIDEO
080 DARTING 3 - 4 UTILITY		038 AGNOSTIC - F.R. SUPER	038/05 STARBURST - TA & GAMM. BRILL
081 DARTING 3 - 4 UTILITY		038/05 INCLINER II - OVER 150000 PICS	038/05 TURBOMAN - PLAYABLE VIDEO
082 DARTING 3 - 4 UTILITY		039 AGNOSTIC - F.R. SUPER	039/05 STARBURST - TA & GAMM. BRILL
083 DARTING 3 - 4 UTILITY		039/05 INCLINER II - OVER 150000 PICS	039/05 TURBOMAN - PLAYABLE VIDEO
084 DARTING 3 - 4 UTILITY		040 AGNOSTIC - F.R. SUPER	040/05 STARBURST - TA & GAMM. BRILL
085 DARTING 3 - 4 UTILITY		040/05 INCLINER II - OVER 150000 PICS	040/05 TURBOMAN - PLAYABLE VIDEO
086 DARTING 3 - 4 UTILITY		041 AGNOSTIC - F.R. SUPER	041/05 STARBURST - TA & GAMM. BRILL
087 DARTING 3 - 4 UTILITY		041/05 INCLINER II - OVER 150000 PICS	041/05 TURBOMAN - PLAYABLE VIDEO
088 DARTING 3 - 4 UTILITY		042 AGNOSTIC - F.R. SUPER	042/05 STARBURST - TA & GAMM. BRILL
089 DARTING 3 - 4 UTILITY		042/05 INCLINER II - OVER 150000 PICS	042/05 TURBOMAN - PLAYABLE VIDEO
090 DARTING 3 - 4 UTILITY		043 AGNOSTIC - F.R. SUPER	043/05 STARBURST - TA & GAMM. BRILL
091 DARTING 3 - 4 UTILITY		043/05 INCLINER II - OVER 150000 PICS	043/05 TURBOMAN - PLAYABLE VIDEO
092 DARTING 3 - 4 UTILITY		044 AGNOSTIC - F.R. SUPER	044/05 STARBURST - TA & GAMM. BRILL
093 DARTING 3 - 4 UTILITY		044/05 INCLINER II - OVER 150000 PICS	044/05 TURBOMAN - PLAYABLE VIDEO
094 DARTING 3 - 4 UTILITY		045 AGNOSTIC - F.R. SUPER	045/05 STARBURST - TA & GAMM. BRILL
095 DARTING 3 - 4 UTILITY		045/05 INCLINER II - OVER 150000 PICS	045/05 TURBOMAN - PLAYABLE VIDEO
096 DARTING 3 - 4 UTILITY		046 AGNOSTIC - F.R. SUPER	046/05 STARBURST - TA & GAMM. BRILL
097 DARTING 3 - 4 UTILITY		046/05 INCLINER II - OVER 150000 PICS	046/05 TURBOMAN - PLAYABLE VIDEO
098 DARTING 3 - 4 UTILITY		047 AGNOSTIC - F.R. SUPER	047/05 STARBURST - TA & GAMM. BRILL
099 DARTING 3 - 4 UTILITY		047/05 INCLINER II - OVER 150000 PICS	047/05 TURBOMAN - PLAYABLE VIDEO
100 DARTING 3 - 4 UTILITY		048 AGNOSTIC - F.R. SUPER	048/05 STARBURST - TA & GAMM. BRILL

## SLIDES

001	SPACE BUBBLES - BORDO VALLEY	006/05	ELITE TRACK - INCLUDES GIBBON TUTOR
001/05	REAL 3D - EXCELLENT DEMO	001/05	LEARN & PLAY - FOR YOUNG KIDS
002	DAZ DRAGON - VALLEY & MERE	002/05	GIBBS SOLUTIONS - TO OVER 120 GAMES
002/05	POKERSTOCK BRAGG - EXCELLENT	002/05	JUNGLE COACHING BOOK - VERY GOOD
003	DRYN VISION - VALLEY & MERE	003/05	RETURN TO EARTH - EXTREMELY GOOD
003/05	INCLINER II - OVER 150000 PICS	003/05	TURBOMAN - PLAYABLE VIDEO
004	AGNOSTIC - F.R. SUPER	004/05	STARBURST - TA & GAMM. BRILL
004/05	INCLINER II - OVER 150000 PICS	004/05	TURBOMAN - PLAYABLE VIDEO
005	AGNOSTIC - F.R. SUPER	005/05	STARBURST - TA & GAMM. BRILL
005/05	INCLINER II - OVER 150000 PICS	005/05	TURBOMAN - PLAYABLE VIDEO
006	AGNOSTIC - F.R. SUPER	006/05	STARBURST - TA & GAMM. BRILL
006/05	INCLINER II - OVER 150000 PICS	006/05	TURBOMAN - PLAYABLE VIDEO
007	AGNOSTIC - F.R. SUPER	007/05	STARBURST - TA & GAMM. BRILL
007/05	INCLINER II - OVER 150000 PICS	007/05	TURBOMAN - PLAYABLE VIDEO
008	AGNOSTIC - F.R. SUPER	008/05	STARBURST - TA & GAMM. BRILL
008/05	INCLINER II - OVER 150000 PICS	008/05	TURBOMAN - PLAYABLE VIDEO
009	AGNOSTIC - F.R. SUPER		
009/05	INCLINER II - OVER 150000 PICS		
010	AGNOSTIC - F.R. SUPER		
010/05	INCLINER II - OVER 150000 PICS		
011	AGNOSTIC - F.R. SUPER		
011/05	INCLINER II - OVER 150000 PICS		
012	AGNOSTIC - F.R. SUPER		
012/05	INCLINER II - OVER 150000 PICS		
013	AGNOSTIC - F.R. SUPER		
013/05	INCLINER II - OVER 150000 PICS		
014	AGNOSTIC - F.R. SUPER		
014/05	INCLINER II - OVER 150000 PICS		
015	AGNOSTIC - F.R. SUPER		
015/05	INCLINER II - OVER 150000 PICS		
016	AGNOSTIC - F.R. SUPER		
016/05	INCLINER II - OVER 150000 PICS		
017	AGNOSTIC - F.R. SUPER		
017/05	INCLINER II - OVER 150000 PICS		
018	AGNOSTIC - F.R. SUPER		
018/05	INCLINER II - OVER 150000 PICS		
019	AGNOSTIC - F.R. SUPER		
019/05	INCLINER II - OVER 150000 PICS		
020	AGNOSTIC - F.R. SUPER		
020/05	INCLINER II - OVER 150000 PICS		
021	AGNOSTIC - F.R. SUPER		
021/05	INCLINER II - OVER 150000 PICS		
022	AGNOSTIC - F.R. SUPER		
022/05	INCLINER II - OVER 150000 PICS		
023	AGNOSTIC - F.R. SUPER		
023/05	INCLINER II - OVER 150000 PICS		
024	AGNOSTIC - F.R. SUPER		
024/05	INCLINER II - OVER 150000 PICS		
025	AGNOSTIC - F.R. SUPER		
025/05	INCLINER II - OVER 150000 PICS		
026	AGNOSTIC - F.R. SUPER		
026/05	INCLINER II - OVER 150000 PICS		
027	AGNOSTIC - F.R. SUPER		
027/05	INCLINER II - OVER 150000 PICS		
028	AGNOSTIC - F.R. SUPER		
028/05	INCLINER II - OVER 150000 PICS		
029	AGNOSTIC - F.R. SUPER		
029/05	INCLINER II - OVER 150000 PICS		
030	AGNOSTIC - F.R. SUPER		
030/05	INCLINER II - OVER 150000 PICS		
031	AGNOSTIC - F.R. SUPER		
031/05	INCLINER II - OVER 150000 PICS		
032	AGNOSTIC - F.R. SUPER		
032/05	INCLINER II - OVER 150000 PICS		
033	AGNOSTIC - F.R. SUPER		
033/05	INCLINER II - OVER 150000 PICS		
034	AGNOSTIC - F.R. SUPER		
034/05	INCLINER II - OVER 150000 PICS		
035	AGNOSTIC - F.R. SUPER		
035/05	INCLINER II - OVER 150000 PICS		
036	AGNOSTIC - F.R. SUPER		
036/05	INCLINER II - OVER 150000 PICS		
037	AGNOSTIC - F.R. SUPER		
037/05	INCLINER II - OVER 150000 PICS		
038	AGNOSTIC - F.R. SUPER		
038/05	INCLINER II - OVER 150000 PICS		
039	AGNOSTIC - F.R. SUPER		
039/05	INCLINER II - OVER 150000 PICS		
040	AGNOSTIC - F.R. SUPER		
040/05	INCLINER II - OVER 150000 PICS		
041	AGNOSTIC - F.R. SUPER		
041/05	INCLINER II - OVER 150000 PICS		
042	AGNOSTIC - F.R. SUPER		
042/05	INCLINER II - OVER 150000 PICS		
043	AGNOSTIC - F.R. SUPER		
043/05	INCLINER II - OVER 150000 PICS		
044	AGNOSTIC - F.R. SUPER		
044/05	INCLINER II - OVER 150000 PICS		
045	AGNOSTIC - F.R. SUPER		
045/05	INCLINER II - OVER 150000 PICS		
046	AGNOSTIC - F.R. SUPER		
046/05	INCLINER II - OVER 150000 PICS		
047	AGNOSTIC - F.R. SUPER		
047/05	INCLINER II - OVER 150000 PICS		
048	AGNOSTIC - F.R. SUPER		
048/05	INCLINER II - OVER 150000 PICS		
049	AGNOSTIC - F.R. SUPER		
049/05	INCLINER II - OVER 150000 PICS		
050	AGNOSTIC - F.R. SUPER		
050/05	INCLINER II - OVER 150000 PICS		

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES
017/05	WORD SQUARE - SUPER PUZZLES
018/05	WORD SQUARE - SUPER PUZZLES
019/05	WORD SQUARE - SUPER PUZZLES
020/05	WORD SQUARE - SUPER PUZZLES
021/05	WORD SQUARE - SUPER PUZZLES
022/05	WORD SQUARE - SUPER PUZZLES
023/05	WORD SQUARE - SUPER PUZZLES
024/05	WORD SQUARE - SUPER PUZZLES
025/05	WORD SQUARE - SUPER PUZZLES
026/05	WORD SQUARE - SUPER PUZZLES
027/05	WORD SQUARE - SUPER PUZZLES
028/05	WORD SQUARE - SUPER PUZZLES
029/05	WORD SQUARE - SUPER PUZZLES
030/05	WORD SQUARE - SUPER PUZZLES
031/05	WORD SQUARE - SUPER PUZZLES
032/05	WORD SQUARE - SUPER PUZZLES
033/05	WORD SQUARE - SUPER PUZZLES
034/05	WORD SQUARE - SUPER PUZZLES
035/05	WORD SQUARE - SUPER PUZZLES
036/05	WORD SQUARE - SUPER PUZZLES
037/05	WORD SQUARE - SUPER PUZZLES
038/05	WORD SQUARE - SUPER PUZZLES
039/05	WORD SQUARE - SUPER PUZZLES
040/05	WORD SQUARE - SUPER PUZZLES
041/05	WORD SQUARE - SUPER PUZZLES
042/05	WORD SQUARE - SUPER PUZZLES
043/05	WORD SQUARE - SUPER PUZZLES
044/05	WORD SQUARE - SUPER PUZZLES
045/05	WORD SQUARE - SUPER PUZZLES
046/05	WORD SQUARE - SUPER PUZZLES
047/05	WORD SQUARE - SUPER PUZZLES
048/05	WORD SQUARE - SUPER PUZZLES
049/05	WORD SQUARE - SUPER PUZZLES
050/05	WORD SQUARE - SUPER PUZZLES

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES
017/05	WORD SQUARE - SUPER PUZZLES
018/05	WORD SQUARE - SUPER PUZZLES
019/05	WORD SQUARE - SUPER PUZZLES
020/05	WORD SQUARE - SUPER PUZZLES
021/05	WORD SQUARE - SUPER PUZZLES
022/05	WORD SQUARE - SUPER PUZZLES
023/05	WORD SQUARE - SUPER PUZZLES
024/05	WORD SQUARE - SUPER PUZZLES
025/05	WORD SQUARE - SUPER PUZZLES
026/05	WORD SQUARE - SUPER PUZZLES
027/05	WORD SQUARE - SUPER PUZZLES
028/05	WORD SQUARE - SUPER PUZZLES
029/05	WORD SQUARE - SUPER PUZZLES
030/05	WORD SQUARE - SUPER PUZZLES
031/05	WORD SQUARE - SUPER PUZZLES
032/05	WORD SQUARE - SUPER PUZZLES
033/05	WORD SQUARE - SUPER PUZZLES
034/05	WORD SQUARE - SUPER PUZZLES
035/05	WORD SQUARE - SUPER PUZZLES
036/05	WORD SQUARE - SUPER PUZZLES
037/05	WORD SQUARE - SUPER PUZZLES
038/05	WORD SQUARE - SUPER PUZZLES
039/05	WORD SQUARE - SUPER PUZZLES
040/05	WORD SQUARE - SUPER PUZZLES
041/05	WORD SQUARE - SUPER PUZZLES
042/05	WORD SQUARE - SUPER PUZZLES
043/05	WORD SQUARE - SUPER PUZZLES
044/05	WORD SQUARE - SUPER PUZZLES
045/05	WORD SQUARE - SUPER PUZZLES
046/05	WORD SQUARE - SUPER PUZZLES
047/05	WORD SQUARE - SUPER PUZZLES
048/05	WORD SQUARE - SUPER PUZZLES
049/05	WORD SQUARE - SUPER PUZZLES
050/05	WORD SQUARE - SUPER PUZZLES

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES
017/05	WORD SQUARE - SUPER PUZZLES
018/05	WORD SQUARE - SUPER PUZZLES
019/05	WORD SQUARE - SUPER PUZZLES
020/05	WORD SQUARE - SUPER PUZZLES
021/05	WORD SQUARE - SUPER PUZZLES
022/05	WORD SQUARE - SUPER PUZZLES
023/05	WORD SQUARE - SUPER PUZZLES
024/05	WORD SQUARE - SUPER PUZZLES
025/05	WORD SQUARE - SUPER PUZZLES
026/05	WORD SQUARE - SUPER PUZZLES
027/05	WORD SQUARE - SUPER PUZZLES
028/05	WORD SQUARE - SUPER PUZZLES
029/05	WORD SQUARE - SUPER PUZZLES
030/05	WORD SQUARE - SUPER PUZZLES
031/05	WORD SQUARE - SUPER PUZZLES
032/05	WORD SQUARE - SUPER PUZZLES
033/05	WORD SQUARE - SUPER PUZZLES
034/05	WORD SQUARE - SUPER PUZZLES
035/05	WORD SQUARE - SUPER PUZZLES
036/05	WORD SQUARE - SUPER PUZZLES
037/05	WORD SQUARE - SUPER PUZZLES
038/05	WORD SQUARE - SUPER PUZZLES
039/05	WORD SQUARE - SUPER PUZZLES
040/05	WORD SQUARE - SUPER PUZZLES
041/05	WORD SQUARE - SUPER PUZZLES
042/05	WORD SQUARE - SUPER PUZZLES
043/05	WORD SQUARE - SUPER PUZZLES
044/05	WORD SQUARE - SUPER PUZZLES
045/05	WORD SQUARE - SUPER PUZZLES
046/05	WORD SQUARE - SUPER PUZZLES
047/05	WORD SQUARE - SUPER PUZZLES
048/05	WORD SQUARE - SUPER PUZZLES
049/05	WORD SQUARE - SUPER PUZZLES
050/05	WORD SQUARE - SUPER PUZZLES

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES
017/05	WORD SQUARE - SUPER PUZZLES
018/05	WORD SQUARE - SUPER PUZZLES
019/05	WORD SQUARE - SUPER PUZZLES
020/05	WORD SQUARE - SUPER PUZZLES
021/05	WORD SQUARE - SUPER PUZZLES
022/05	WORD SQUARE - SUPER PUZZLES
023/05	WORD SQUARE - SUPER PUZZLES
024/05	WORD SQUARE - SUPER PUZZLES
025/05	WORD SQUARE - SUPER PUZZLES
026/05	WORD SQUARE - SUPER PUZZLES
027/05	WORD SQUARE - SUPER PUZZLES
028/05	WORD SQUARE - SUPER PUZZLES
029/05	WORD SQUARE - SUPER PUZZLES
030/05	WORD SQUARE - SUPER PUZZLES
031/05	WORD SQUARE - SUPER PUZZLES
032/05	WORD SQUARE - SUPER PUZZLES
033/05	WORD SQUARE - SUPER PUZZLES
034/05	WORD SQUARE - SUPER PUZZLES
035/05	WORD SQUARE - SUPER PUZZLES
036/05	WORD SQUARE - SUPER PUZZLES
037/05	WORD SQUARE - SUPER PUZZLES
038/05	WORD SQUARE - SUPER PUZZLES
039/05	WORD SQUARE - SUPER PUZZLES
040/05	WORD SQUARE - SUPER PUZZLES
041/05	WORD SQUARE - SUPER PUZZLES
042/05	WORD SQUARE - SUPER PUZZLES
043/05	WORD SQUARE - SUPER PUZZLES
044/05	WORD SQUARE - SUPER PUZZLES
045/05	WORD SQUARE - SUPER PUZZLES
046/05	WORD SQUARE - SUPER PUZZLES
047/05	WORD SQUARE - SUPER PUZZLES
048/05	WORD SQUARE - SUPER PUZZLES
049/05	WORD SQUARE - SUPER PUZZLES
050/05	WORD SQUARE - SUPER PUZZLES

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES
017/05	WORD SQUARE - SUPER PUZZLES
018/05	WORD SQUARE - SUPER PUZZLES
019/05	WORD SQUARE - SUPER PUZZLES
020/05	WORD SQUARE - SUPER PUZZLES
021/05	WORD SQUARE - SUPER PUZZLES
022/05	WORD SQUARE - SUPER PUZZLES
023/05	WORD SQUARE - SUPER PUZZLES
024/05	WORD SQUARE - SUPER PUZZLES
025/05	WORD SQUARE - SUPER PUZZLES
026/05	WORD SQUARE - SUPER PUZZLES
027/05	WORD SQUARE - SUPER PUZZLES
028/05	WORD SQUARE - SUPER PUZZLES
029/05	WORD SQUARE - SUPER PUZZLES
030/05	WORD SQUARE - SUPER PUZZLES
031/05	WORD SQUARE - SUPER PUZZLES
032/05	WORD SQUARE - SUPER PUZZLES
033/05	WORD SQUARE - SUPER PUZZLES
034/05	WORD SQUARE - SUPER PUZZLES
035/05	WORD SQUARE - SUPER PUZZLES
036/05	WORD SQUARE - SUPER PUZZLES
037/05	WORD SQUARE - SUPER PUZZLES
038/05	WORD SQUARE - SUPER PUZZLES
039/05	WORD SQUARE - SUPER PUZZLES
040/05	WORD SQUARE - SUPER PUZZLES
041/05	WORD SQUARE - SUPER PUZZLES
042/05	WORD SQUARE - SUPER PUZZLES
043/05	WORD SQUARE - SUPER PUZZLES
044/05	WORD SQUARE - SUPER PUZZLES
045/05	WORD SQUARE - SUPER PUZZLES
046/05	WORD SQUARE - SUPER PUZZLES
047/05	WORD SQUARE - SUPER PUZZLES
048/05	WORD SQUARE - SUPER PUZZLES
049/05	WORD SQUARE - SUPER PUZZLES
050/05	WORD SQUARE - SUPER PUZZLES

# AMOS

## PUBLIC DOMAIN

001/05	WORD SQUARE - SUPER PUZZLES
002/05	WORD SQUARE - SUPER PUZZLES
003/05	WORD SQUARE - SUPER PUZZLES
004/05	WORD SQUARE - SUPER PUZZLES
005/05	WORD SQUARE - SUPER PUZZLES
006/05	WORD SQUARE - SUPER PUZZLES
007/05	WORD SQUARE - SUPER PUZZLES
008/05	WORD SQUARE - SUPER PUZZLES
009/05	WORD SQUARE - SUPER PUZZLES
010/05	WORD SQUARE - SUPER PUZZLES
011/05	WORD SQUARE - SUPER PUZZLES
012/05	WORD SQUARE - SUPER PUZZLES
013/05	WORD SQUARE - SUPER PUZZLES
014/05	WORD SQUARE - SUPER PUZZLES
015/05	WORD SQUARE - SUPER PUZZLES
016/05	WORD SQUARE - SUPER PUZZLES

# BATTLE AXE P.D.

BATTLE AXE P.D. 125 KINGSWOOD THORPE MARKEET, NORWICH NR4 5JL TEL: 0692 261360

**AMIGAE**  
C. MANUAL (2 Disks)  
WORTH (2 Disks)  
T.V. GRAPHICS (2 Disks)  
VIDEO APPLICATIONS (2 Disks)  
IMOVE  
BD V.F. The Latest  
CDG SALLY  
CD MUSIC  
PRINTER DRIVER GENERATOR  
M.V. 3  
MAINT BOOT DISK  
D.B. & THICK  
GROVER WRITER  
GAMES MUSIC CREATOR  
MIDI V.S.  
JO STAFF REMIXES  
THE SPACE MUSIC DEMO  
RAC DEMO  
BUDRAIN (1 Meg)  
BUDRAIN II  
SYSTEM VIOLATION DEMO (1 Meg)  
SIMPSONE (1 Meg)  
LEARN & PLAY (2 Disks)  
DOPE INTRO MAKER  
REFRESH MAGIC POWERMENU & FONT DESIGNERS  
QUICKBASE, LABEL PRINT, VIDEO LIBRARY, JMENU (1 Disk)  
GRAPHICS UTILITIES  
ANTIPICKER

*Powerful easy to use database with 4 mathematical functions*  
*All you need to know*  
*Complete "C" environment*  
*Backgrounds & fonts for video enthusiasts etc*  
*Video slides to accompany TV graphics*  
*Amazing title and text simulator for video etc*  
*CD is a feast with this one*  
*CDG SALLY*  
*Much much better than disclabel on workbench*  
*The top top mules and waffles with more*  
*You want a printer you need a driver*  
*The latest master virus file and file base*  
*Loads of boot utility etc*  
*Make your own intro your music & sound test*  
*The best music creator reveal about*  
*Anytime else get that Cool graphics and sound*  
*Run & Satisfy with this test*  
*Great but I've made*  
*The space*  
*Woolsey*  
*Beth's home!*  
*Good younger later*  
*Goodly intro maker*  
*Excellent to*  
*Good video*  
*Totally packed with graphics and*  
*Steps folder in interface, see July issue Amiga Computing*

## AXEPACK 1

Home or office business pack, 3 disks including Wordprocessor, Spell Checkers, Xspell & Amiga Spell, 3 Spreadsheets and Run Database, all for £50. FREE. Amibuse with this pack.

## AXEPACK 2

10 Disks full of instruments, sounds, voices and beats to produce your own remixes all digitally sampled by Les of Battle Axe music to use in Med, Soundtracker etc all for £250. Disk full of rippers, rippers for hacking sounds... FREE.

## CLIP-ART 1

5 Disk pack of the best Desktop Publishing clip art available all for £60.

## WIN A DISK DRIVE!

FREE entry to our draw with every order, to win a Camsata Disk Drive... Will the mad Axeman pick you?

ALL ORDERS DISPATCHED BY 1ST CLASS OR AIRMAIL ON DAY OF RECEIPT

DISKS EACH  
NO POSTAGE B.K. & BFO  
£1.50 FLIGHT LPTD 10 DISKS  
CASH REST OF WORLD LPTD 10 DISKS

CHEQUES & P.O.s TO: BATTLE AXE P.D.  
125 KINGSWOOD,  
THORPE MARKEET,  
NORWICH NR4 5JL

# ORBITAL P.D. CATALOGUE

ALL DISKS ARE 99 PENCE

OPD316 DISCO FEVER 1  
OPD276 MADONNA VOUGE (4)  
OPD277 VISOR HOUSE  
OPD278 CRONICS NEVERMORE  
OPD279 HATFIELD BAYE DEMO  
OPD247 MASTER VIRUS KILLER  
OPD245 FLATBEE P.D. GAME  
OPD257 GLIDEACOP 2  
OPD259 DOPE INTO WRITER  
OPD254 SONIX HOUSE 1  
OPD235 NEW ORDER MUSIC 2  
OPD217 TURTLE POWER  
OPD273 AMAZING MUSIC 2 (3)  
OPD273 BANGING RAVES  
OPD272 BATMAN THE MOVIE  
OPD271 MAYHEM P.D. GAME  
OPD269 HORIZON MEGADemo  
OPD268 FILLET THE FISH  
OPD264 BUDRAIN MEGADemo 2  
OPD112 MADONNA SPINNY  
OPD220 STAR TREK 3 (2)  
OPD211 THE WALL PINK FLOYD  
OPD197 A COPY (THE COPPER)  
OPD114 D COPY (DISK COPPER)  
OPD209 P COPY (DISK COPPER)  
OPD200 SAFE SEX DEMO  
OPD134 ORBITAL UTILITY DISK 1  
OPD070 RAF MEGADemo (2)

OPD150 ALF 2 MIX  
OPD026 COMPUTER CONFLICT  
OPD212 REBELS MEGADemo  
OPD184 BADGE KILLER DEMOS  
OPD218 CAVE PARTY DEMO  
OPD159 MADONNA SLIDESHOW  
OPD199 WALKER DEMO 2 (M)  
OPD226 SAM FOR SLIDESHOW (X)  
OPD133 MUSIC MASTER 2  
OPD005 PUGGS IN SPACE  
OPD078 BUDRAIN MEGADemo 1 (2) (M)  
OPD207 DRIP P.D. GAME (M)  
OPD187 PRISOLD COP P.D. GAME  
OPD169 LAZZBENCH  
OPD083 SPACE ACE DEMO  
OPD120 FRAXION HORROR (X)  
OPD193 BOOP TALK (X)  
OPD129 COOL COUGAR  
OPD191 BETTY BOO (MUSIC)  
OPD252 BOB STATE REMIX  
OPD198 WALKER DEMO 1 (M)  
OPD222 KM WILD SLIDESHOW  
OPD193 BOOP TALK (X)  
OPD085 FRESH COLA MUSIC (2)  
OPD411 RETURN TO EARTH GAME  
OPD413 ORBITAL UTILITY DISK 2  
OPD435 PROTRACKER MUSIC UTIL  
OPD394 SPACE WRITER DEMO MAKER

CATALOGUE ON DISK £1.00 (PNC 4 GOOD DEMOS)

Numbers in ( ) means number of Disks, M = 1 Meg, X = 18 years only

Price is 99 pence per disk + 50 pence p&p per order

Cheques/P.O payable to Orbital P.D.

5 Green Lane, South Chalfey, East Sussex BN8 4BT England.

All overseas orders are subject to a 30 pence per disk surcharge.

SAE for a free catalogue. Tel/Fax: 0273 401286

DISK CATALOGUE  
ONLY 75p  
REFUNDABLE ON  
FIRST ORDER

# REBELS (ONE)

## BRITAINS BEST VALUE AMIGA PD LIBRARY

### THE REBELS TOP 100 "THE BEST OF THE REST"

OVER 1600  
PD TITLES ALL  
IN OUR NEW  
CATALOGUE

**GAMES**  
R1 Star Trek (Strategic) ★  
R2 Star Trek (3) 2 Drivers ★  
R3 Star Trek (2) New version  
R4 Star Trek (2) V good  
R5 Flash Bet (Boulderdash clone)  
R6 Return to Earth (Sci-Fi)  
R7 Pacman 87  
R8 Breakout Construction Set  
R9 Pseudo Cop (Shoot 'em up)  
R10 Holy Grah (Text Adventure) ★  
R11 Golden Fleece (Text Adventure)  
R12 Hook the Classic D + D Game  
R13 Sonix (Super Shoot 'em up) ★  
R14 Fish Games (5) (The best from Fred Fish)  
R15 Battle Force (Strategy game)  
R16 Bull Run (Civil war)  
R17 Moria (D + D game)  
R18 Tennis ★  
R19 Games Pack 1. Arcade games  
R20 Games Pack 2. Arcade games

R34 Icon Magic  
R35 CIL Tutorial  
R36 Virus X  
R37 Amiga Fox  
R38 Trooper Fonts (3) (D Paint etc)  
R39 C Manual (3)  
R40 Utility Disk Set (10)

**MUSIC**  
R41 MED  
R42 Soundtracker Inst Set (10)  
R43 Soundtracker  
R44 NoiseTracker  
R45 Sonix Instruments + Music (10)  
R46 Bot Simpson (3)  
R47 Amazing Tunes 2 (3) Brilliant ★  
R48 D Mob & (Brilliant)  
R49 Star Trekker  
R50 Crusaders Bacteria  
R51 Rebel Megaball  
R52 Cirkas Nevermore  
R53 Sounds of Silents  
R54 Games Music Creator  
R55 C Bit 90 (Brilliant) ★  
R57 808 State Remix

**DEMOS**  
R58 Budrain 1 (2) Over 18's  
R59 Budrain 2  
R60 The Run (Amazing animation)  
R61 100 Cals (Brilliant)  
R62 Mental Hangover  
R63 Fraxion Horror (Sick!)  
R64 Kylie Demo (2)  
R65 Blue Stripes (2)  
R66 RAF Mega Demo (2)

R67 Elyra Demo ★  
R68 Predators Mega Demo (2)  
R69 Puggs in Space ★  
R70 New Tec Demo (2) ★  
R71 Vic Slide Show  
R72 Wolker Demo 1 ★  
R73 Wolker Demo 2 ★  
R74 Cool Enough ★  
R75 Madonna Slide Show (3)  
R76 Crusaders Genesis ★  
R77 Intel Breed Slide Show  
R78 USA vs Iraq Demo  
R79 Total Recall Slide Show  
R80 Real Things (2) (Birds & Horses)

**GOODIES**  
R81 Dope Intromaker  
R82 The Probe Demo ★

R83 Fractal Fight ★  
R84 Video Applications (2)  
R85 Demolisher Utilities (2)  
R86 Clipart Set (5)  
R87 Boot Champion  
R88 Boot Writer  
R89 Education Set 1 (2) Age 6+  
R90 Education Set 2 (5) Age 13+  
R91 31 Emulator (10 works)  
R92 Messy Ds  
R93 Rebel Devil Cruncher  
R94 Sacteria Demo  
R95 Vision Mega Demo  
R96 Rebel Devil Utilities  
R97 N Comm (Modern software)  
R98 Power Pack 2.38  
R99 C Compiler  
R100 X Copy

## THE BEST DEALS AROUND

Deal 1, 1-9 Disks = £1.75 each  
Deal 2, 10+ Disks = £1.25 each  
Deal 3, 20+ Disks = £0.90 each  
Deal 4, Buy 10 PD Disks and get a free 10 capacity box  
Deal 5, No minimum order charge  
Deal 6, No post & packaging  
Deal 7, No VAT to add  
Deal 8, Order before 3 o'clock and we despatch same day  
Deal 9, Order 3 disks and get a free catalogue  
Deal 10, Come to the shop and get another 25p off all prices



SEND CHEQUES/P.O. TO:  
PD REBELS  
52b LONG STREET  
DEVIZES, WILTS

0380  
727419

appeal lasted for months. The object was to collect a number of jewels hidden in various caves while avoiding boulders which were strewn about the place. You would lose a life if a boulder fell on you from a great height and it all added up to a very enjoyable experience.

Now AmigaNuts have released a clone of this written by Ian Cogings and I must say I enjoyed playing it. The graphics are cute and the gameplay is identical in style to the original.

Its name has changed this time though to **Amidash** and it's available on AmigaNuts disk #1038. Enjoy it - I did!

## Utilities

If you like mucking around with utility programs you may find AmigaNuts disk #848 a nice little addition to your collection.

On this disk there are two font designers, one for 8 x 8 fonts and the other for 16 x 16 size fonts. My only complaint here is that the grid containing the 16 x 16 edited characters is a little small. A magnify option here would have been nice. There are options to move, mirror, reverse, cut and paste parts of the font set and to save the font to disk.

Also on this disk is a program called **Powerboot** which allows you to create a menu for your disks and store it on the bootblock.

For those of you unfamiliar with bootblocks, it is track zero on your disk which can contain a 1K machine code program to do something as soon as the disk is read after being inserted. That's how all those fast loading schemes work on commercial games - pop in the disk, and the game begins to load in no time at all.

**PowerMenu** is a nice little utility similar in style to powerboot except that it's a bit more aesthetic. Again, you're allowed to create a menu, but this time you can design a screen format around it.

By creating a menu data file, and embedding within it special formatting characters - similar to macros on a word processor - you can change colours, execute script files, run programs and more, all at a click of the mouse.

The screen setup is attractive, with a few stars floating away in the background, and it makes the user interface a pleasure to use.

## Brightening Topaz

I don't know about you but I find the standard system Topaz font rather boring. Wouldn't it be nice to change it once in a while and add a bit more appeal to your old Amiga? Well, now you can.

Simply use the **NewTopaz** command on AmigaNuts United disk #848. All you have to do is type **NEWTOPAZ**

<FontName> and there you have it. You could use this command with a font you've designed yourself with the font editor mentioned above. If you use the gadget editor supplied on the coverdisk a couple of months back, you could give your Amiga interface a whole new look. It makes a change from looking at the same old Amiga screen time and time again.

## Intuitive

Every so often a program emerges that is user friendly, pleasant to look at, easy to use, and an absolute godsend. **IntuiMenu** on AmigaNuts disk #1075 is

just that type of program. **IntuiMenu** allows you to set up a menu and from within it execute programs, perform CLI operations, move to another page, and do basically anything your program it to do. I can see it being of most benefit to hard drive users, as hard drives allow much more data to be stored.

You could design your whole computing environment around **IntuiMenu**. You could run **Deluxe Paint III** or **PageStream** with a little setting up and a click of the mouse. But **IntuiMenu** scores best in its user interface - there are gadgets to perform text manipulation and command execution, and boy

it's just so pretty to look at! **IntuiMenu** would rate highly on anyone's PD shopping list and I suggest you get hold of a copy now!

## Print happy

If you have a printer, are lacking some serious utility software, and use it a lot, then AmigaNuts disk #1033 can come to the rescue.

Have you ever wanted to print out a text file with a different font and been bored with the fonts supplied with your own printer?

Well now **Fontconvert** allows you (providing your printer is capable of

# RAY TRACING

If you've seen any sort of ray-traced pictures, either on disk from a PD library, or if you make your own, you'll know how good the Amiga is at creating some pretty impressive pictures.

Senlac Software are specialists in ray-traced pictures and animations, and have some quite impressive disks of the same. There's not much to be said about these except that they are very, very impressive and have taken hours to generate. Definitely worth a look.

Ray-traced pictures take an incredibly long time to render - these specially constructed pictures take hours and sometimes days to generate on mainframe computers let alone the Amiga, but the results are worth the wait.

It just takes time, unless of course you happen to be blessed with the ownership of an accelerator board. The chips on these boards allow for much quicker mathematical calculation

and enhance the ray tracing experience by allowing pictures to be created in less time than normal on the Amiga.

The only way to produce ray-traced pictures, was to invest in the very expensive **Sculpt** series of programs, which cost in the region of £300 to £400 depending upon the complexity of the program and its capabilities.

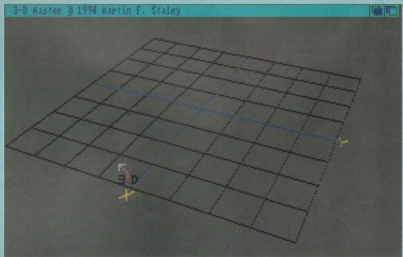
Well now you have the chance to produce your own pictures at a fraction of the cost, with Senlac Software's new release, **3D Master**.

This is a budget ray-tracing package and is capable of some quite outstanding renderings. Most geometric shapes are catered for like spheres, cubes and cones. Dull shiny and mirror surface textures are featured, and the author has written some pretty fast rendering algorithms to make the tracing process speedier than with commercial sector programs. **3D Master** is not

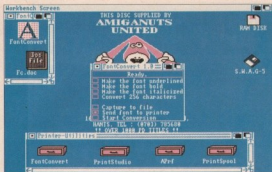
actually PD, it is shareware, so the author has disabled some of the features in the public domain release. Should you be suitably impressed (and I think you will be), he would expect you to make a contribution and send him approximately £20 to get the fully working **3D Master** package.

I am very impressed with **3D Master**, having played around with it for a while. It offers the user a simple but interesting introduction into the world of ray tracing at a price that is quite unbelievable.

The author has been very charitable considering that this program could be sold for over £100. Indeed, one company hoped to market it at over the hundred pound mark but the author intended it to be released as a cheap alternative to the hugely expensive packages available elsewhere. You can contact Senlac Software on 0424 445498.



Ray tracing on the cheap



Make your fonts more functional

downloading character sets) to use any font you find attractive. It does this by reading in the font file and scaling and sending the characters along the serial or parallel port to the printer. Most popular printers support downloadable characters, so if you have a STAR or EPSON 9-pin, you're in for a bit of a treat.

As well as FontConvert there's PrintStudio. This is a nice little program which you can use for printing text files, DPaint IFF files or Commodore ILBM format files. A nice user interface is used, even if the colours are a bit sickly and you won't have to load up your other programs like DPaint to print out your file.

You can do screen dumps - this includes Workbench screens - without a lot of fuss and you'll only have to set your printer preferences from within PrintStudio if you require a different setting.

If you're used to mainframes you'll know what spooling is, if not it means simply: I want to do this, but I don't want to wait until it's finished, I'd rather be doing something else! So you can send a job to the printer, like a text file, and be carrying on using your Amiga while it's printing.

The only problem here is that PrintSpool is implemented as a library of procedures which you would call from a C or Assembly language program, so for those of you who have no

knowledge of either it's probably worthless. I would like to see a CLI command like PrintSpool. I can do this just by typing: SPOOL <filename>. Maybe someone could come up with a command like this soon - it would sure be handy and if you do, maybe you would consider releasing it into the public domain.

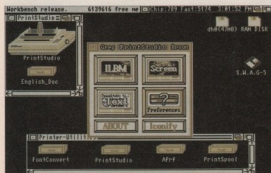
### Useful utilities

On Fish Disk #479 this month there are a couple of small useful utilities. CheckPrt allows you to check whether you have a printer available in your startup sequence. CheckPrt returns a failat value of 10 if a printer is not connected or off, and a value of zero if you're in luck and you remembered to switch it on. Small but useful.

Then there's TDP, a disk drive track display program which shows you where your drive's heads are when they're accessing the disk drive. Small hacks, but very useful if you do a lot of disk and printer work. You could install both these programs in your startup sequence.

### Back in time

If, like me, you are a Commodore fanatic, graduating through the ages from the humble VIC-20 (remember that?), to the 64 and then on to the Amiga, you'll have enjoyed every minute



Printer and machine in perfect harmony

## Big Brother

George Orwell's novel 1984, predicted a gloom of oppression administered by the government and named Big Brother. Well now BigBrother is a program on Fish Disk #473 which monitors your Amiga system and alerts you to any dangerous viruses present in the memory.

It monitors the vectors that so many viruses change to perpetrate their nefarious deeds, and allows you to reset them if they change. In addition to this you can install disks, examine bootblocks, clear the memory, do a warm reset and execute script files.

It sits in the background in a so-called "sleep" mode and comes to life if it feels your happy, bubbly and smooth computing environment is threatened with virus infection. One complaint though - as I use a 1.3 machine, the contents of the DoIO vector have changed to that of earlier machines and as a result, BigBrother tells me so.

Ah! But one look at the documentation enlightens me. There should be a preferences file for BigBrother to operate in a 1.3 environment. I think this has been missed when collating material for the disk and you should try to get hold of it from the author. It should pose no problem for 1.2 users but if you use 1.3 you're in for a tantrum or two.

DRIVE-MEMORY-VIRUS UTILBOOT V1  
DRIVES ARE: OFF FASTMEM IS: ON

F1 FASTMEM OFF F2 DRIVES ON/OFF  
F3 FASTMEM ON F4 INSTALL UTIL  
F5 RESET AMIGA F6 FILTER ON/OFF  
F7 KILL VIRUS! F8 QUIT TO CLI!

THERE IS NO VIRUS IN MEMORY  
EN-CODED BY EKO-RANGER 1991

Viruses beware! Big Brother is watching

of it. The VIC-20 was around at the time of the ZX-81 and Spectrum computers in the early eighties. It wasn't a very powerful computer, being equipped with only 3.5K of ram and a rather small screen size, but how I loved it.

Unfortunately, mine broke down and was replaced by the 64 a couple of years later, and what a machine that was! Eight sprites and three channels of sound. WOW!

If you had a 64 and came to love the machine you'll be pleased to know you can travel back in time and re-live the experience with the 64 emulator from AmigaNuts United.

It comes on disk #1030 along with a Spectrum emulator - but to what use you'll put that I cannot think! So, if you have any old 64 programs lying around that you would like to see running again, get hold of this disk.

### Other bits

Most emulators, unless they are supplied with a microprocessor, are suited only to text-based applications, but I must say I have had DBASE III running under the PC transformer on the Amiga, albeit a little slowly, and it seemed to work OK.

I don't know how well the 64 emulator stands up, but you can contact

AmigaNuts United on 0703 785680 with this or any other PD enquiry you may have.

For those who use Deluxe Paint regularly and use the WorkBench fonts a lot, you might like Poly Softs font disks. They contain a variety of colourful, attractive fonts which you can use in DPaint. There are small and large fonts, fonts of every colour and size, and some quite beautiful designs that will add more life to your DPaint creations.

Some of these fonts have been used in PD demos, and you may have seen them if you follow the demo scene closely. They could be included in your own creations, provided you have some knowledge of bitmap conversion.

### Famous last words

Should you purchase any of the above programs or indeed any public domain software, spare a thought for the author who has spent time and effort to make your computing experience an enjoyable one.

Listen to your conscience and send in the cash - after all it's a small price to pay to keep PD alive...

# SENAC SOFTWARE PD

UNIT 6, WEST HILL ARCADE, GEORGE STREET,  
HASTINGS, EAST SUSSEX TN34 3AN

TEL: 0424 445498 FAX: 0424 755093

2-10 disks £1.25 each. 11 or more disks 99p each

VISA

ALPHA



## GRAPHICS

IFF Pcs I	Forgotten Realms
IFF Pcs II	Paradise Slides
IFF Pcs III	Joe II Slideshow
IFF Pcs IV	Nasa Digipics I
IFF Pcs V	Nasa Digipics II
Fantasy I	Disney I*
Fantasy II	Countach Fantasy I
Fantasy III	Countach Fantasy II
Fantasy IV	Viz Slide Show
Fantasy V	Agatron Reflections
Fantasy VI	Sun Connection
Photomontage I	Galams Gate
Photomontage II	Turbo Silver Masks
Photomontage III	Nik Williams Broadcast

## GAMES

Boomerang	Frantic Freddie
Flashbier	Eatmine
Hack	Drip!
Larn	Tricky
Autobahn 3000	Card Games
Zerg	Blizzard
Casino Craps	Return To Earth
Moria V3.0*	Sub Culture Level 1
Empire	Kill to Free
Cribbage	Games Galore I
Trainset	Games Galore II
PC Chess	Star Trek V 1.85 (2*)
Breakout	Mech Force 3.71

## RAYTRACING

C-Light anims	Raytracing
DBW Render V2.0	Sculpt-Tools
DKB Trace V2.0	

## SENAC COMMERCIAL RELEASES

Sculpt Objects I	£9.99
Sculpt Objects II	£9.99
Sculpt Objects III	£9.99
Image object 1	£9.99
Powerpack Pro 3.0b	£20.20

## ANIMATION

### 1 MEG

Stealthy II	Radio II
Walker II	Italia Cinema
Kufl (Pen)	Gongaman
Knight II	Shorebiz
Rotating Ship	Bad Bird
Shark	Billy The Kid
Gymnast	TV Commercials
Walker I	Batman
Jet F15	Juggler 2
Robo	

### 2 MEG

Station at Kberne	
(3)	
Lost In Scape (3)	

### 1 1/2 MEG

- At the Movies -	
3+3 1/2 MEG	
Sentinel (2)	

\* = Requires 1 Meg  
(2) = no. disks in set  
(ED) = extra drive required

## LATEST IN

3D Master Raytracer	£5.00
Celebras examples	£3.00
Eric Schwartz' shuttlecock*	£3.00
Luxo Teenager Objects	£3.00

### LEMMINS ANIMATION

by Eric Schwartz

Brilliant!!!

2 Disks Requires 2 Meg Min £6.00

## AMOS PD

Note: £2 per disk. No discounts for quantity

19 Microman Music	85 Benem/Seales & Ladden
22 Punctured III Demo	97 Dynamic Dick
31 Screen Designer	98 Music 24
33 Pink Goes Ape	99 Benson Demo I
35 Archibut	100 Amos Demo II
21 Word Square Solver	101 Autoplayer
20 Arc Angel Demo	102 Chateau Death
32 Prags/Carn/Fearn	103 Pick a Puzzle (2)
/Nadem	105 Picture it II
34 Lake Miller Music	107 Amos Progs 6
36 AMOS/RT 2 Updates	108 Musciplayer
38 FORTS #4	109 Werdscience II
52 F.R.U.	110 Cnugine
53 Carus/Starrus Demo 2	112 Pasthoru Mega
54 Progs 2	Demo (2)
59 Super Quiz	115 Ballooney
62 Arcadia	120 Amos Music Player
64 Progs 3	124 Bob's Maniacs
76 Rainbow Warrior	125 Benson Demo II
77 Progs 5	126 Dreamers Disk Mag
81 Jake Omega Demo 1	130 Wooden Ball
82 Jake Omega Demo 2	135 Simon Says
83 Paint	137 Tile Trial
84 Lake Miller Music 3	

## AMOS LICENCEWARE

Note: £3.50 per disk. No discounts for quantity

I Colouring Book	XI Go-Getter (1 meg)
II Arc Angel Maths	XII Hypnotic Land
IV Thingamajig (1 meg)	XIII Gig Marnia
V Jungle Bungle	XIV Play it Safe
VII Pukadu/Sprines	XV Arch Angel Shapes
VII Four Way Lynx (1 meg)	XVI Reversi II
VIII Work & Play (1 meg)	XVII Dog Fight II
IX Assembler	XVIII Touchstones
X The Word Factory	XIX X-IT-50
	XX Wondy
	XXI Quingo

We are pleased to accept  
Switch and Connect cards for  
immediate despatch of disks

## UTILITIES

Anti Flicker	Convertors
Virus 4.1	Energy Utilities
Disksafe 1.42	SID V1.06
ESA Utilities	Aardvark Utilities
FullForce 1.0	Manicure Generators
Ghostwriter	Archive Utils
D-Copy	ARP: 1.3 Installer
Copiers I	North C (1)
TV GFX/Fonts (2)	C Manual (2)
Boothlocks (2)	CLI Tutor
Video Progs (2)	VScan + Big Brother
Graphics Apps (2)	Chaos Strikes Back
Amiga/Atari GFX	Maps

## BUSINESS FINANCE

Wordwright	QBase/V.C.
Bank'n	Clerk V4.0
Analyticals*	Inventory/Memopad
Amibase	Journal
RIM	Analyticalc 3D
Spread	

## MISCELLANY

Workbench II Look	Celtics Demo Maker
Raytracing	test 3.1 Bono
Sampled Sounds	Halloween Sample (2)
Demo Creator	Direct Action*
MC4 Intro	Utopia Postcards
DoDe V1.25	Cañado Support I
Rid	Cañado Support II
Jazzhench	Fractal Flight

## TREKKERS!!

All new StarTrek (2)	Miscellaneous
StarTrek (* 3 ED.)	Amos*
StarTrek V2.0 (* 2 ED.)	Trektrivia
StarTrek Fleet	Enterprise
Manoeuvre Anim*	Approaching*
StarTrek Dry Dock	Karns Attack*
Anim*	Workbee anim*
StarTrek Enterprise	Warpdrive anim*
Reliant Anim*	Star Trek V1.55*
StarTrek	Star Trek V1.85(2)

## MUSIC

Soundtrackers (2)	Instruments ST-93
Soundtrackers V4.0	Instruments ST-94
Future Composer	Instruments ST-95
Games Music Creator	Instruments ST-96
Perfect Sound	Instruments ST-97
Sound Editor	Instruments ST-99
Compact Disk	Med V2.12
Hi Fi Player*	Soundbracher
Instruments ST-02	Professional
Instruments ST-03	RIP Eruptions
Instruments ST-04	Flashbeam Music
Instruments ST-05	Crusaders Freed Out
Instruments ST-06	Crusaders Audio X
Instruments ST-07	Crusaders Back to Base (not 1.3 Rom)
Instruments ST-08	Med V.12
Instruments ST-09	Sonic Play
Instruments ST-10	Star Trekler (8 channel)
Instruments ST-11	Pro Tracer 1.1A
Instruments ST-21	Acid Mix I
Instruments ST-22	
Instruments ST-52	

OVERSEAS - EEC Please add £2.00 to cover postage costs. OVERSEAS - Australasia Please add 50p per disk to cover Airmail costs.  
Credit Card & Postal Order payments despatched by return. UK add 50p per order P&P. Catalogues on request.

**FAST  
FRIENDLY  
&  
RELIABLE**

**ULTIMATE P.D.**  
Tel: 0222 617201 (9am-9pm)

**ONLY 99p  
PER DISK**

## DEMOS

- D001 WALKER 1 (1 Meg) Classic auto.  
D002 WALKER 2 (1 Meg) Ball auto.  
D003 WALKER 3 (1 Meg) New pop of age.  
D004 COOL COOLERS (1 Meg) Cartoon quality auto.  
D005 OBSCINE 2 (2 disks) Straight phone calls.  
D006 A GATION SLIDES 1. Good slideshow.  
D007 S. WING ANIM (1 Meg) Another good one.  
D010 ANTHONY VIOLENCE DEMO. Funny & original demo.  
D012 REBELS MEGADISK. Get this disk.  
D014 SPACE ACE DEMO (1 Meg) Cool!  
D015 UGLY MUG GOES FOR A SPIN.  
D016 S. WING 2 (1 Meg) Another good auto.  
D017 GHOST PAIR. (1 Meg) Good auto.  
D023 STEALTHY 2 ANIM. Amusing auto.  
D024 A.J. DEMO. Use the ALP rep.  
D025 BUSHMAN SLIDES (2 Disks) Tuffy Bab. get a  
D031 BALDER OF THE LOST ARK ANIM (1 Meg) Ball.  
D032 JUGUETTE ANIM (1 Meg) The Jugger's fun.  
D033 CROCK 2. More obscure phone calls.  
D034 PORCINE ANIM (1 Meg) Fantastic.  
D035 CAR CHASE (1 Meg) Another, get it.  
D037 GYMNAST ANIM (1 Meg) Very good.  
D039 TRACTAL FLIGHT (1 Meg) Nooooooooooooo.  
D041 A GATION SLIDES II. Amusing auto.  
D043 ARSE WIFE ADVERT. He, he, he, very funny.  
D046 GARFIELD SLIDESHOW. Muesen, good.  
D047 RAF MEGADISK (2 Disks) Amusing Ghostbuster part.  
D048 END OF THE CENTURY MEGADISK 2. A cool disk.  
D050 THE AMAS BONG (2 Disks) XXXX! Hilarious.  
D052 WE WANT SOME PUSSEY RAP (XXX) No comment, he he.  
D054 FILLET THE FISH. Pugs in space style demo.  
D055 SCOOPEX MENTAL HANGOVER. Get this now!!!  
D059 RED SICKER DEMO (2 Disks) Get this in well!  
D060 EDDIE MURPHY DELIRIOUS (2 Disks) XXXX! Funny!  
D061 EDDIE MURPHY DELIRIOUS 2 (2 Disks) XXXX! Funny!  
D062 RED SICKER CREDIT 90. Get this one!  
D063 PUGS IN SPACE. Very good.  
D066 LOTUS & UNICYCLE (1 Meg) New a classic auto.  
D069 NIGHTBIRD SLIDEHOW. TV quality pictures.  
D070 SAFE SEX DEMO. Funny, but harmless.  
D074 DREAM PACK. Includes the amazing POI POI demo.  
D076 OBSCINE 3. Even more dirty phone calls.  
D077 GOOD MORNING VIETNAM. Yapper.  
D082 MONTY PYTHON "NUDGE NUDGE" (2 Disks) 2 demos m.  
D083 HARD CRACK GRAPHICS. New music & plays.  
D088 SILENT MEGADISK. Brill, louder, just get it.  
D089 GOLDIFIRE MEGADISK. Get this or else!!!!!!  
D095 OUTRICKERS ACID DEMO. One for acid freaks.  
D106 SCIENCE 451 MEGADISK. Very good.  
D109 NO BRAIN, NO PAIN (2 Disks) Good.  
D111 CRUSADERS BACTERIA. Brill music.  
D118 CHUCK'S MEGADISK. Includes famous Madonna demo.  
D127 CHUBBY BROWN (XXX) Funny disk.  
D129 INTENTION MEGADISK. Good stuff.  
D134 SLIPSTREAM - GARFIELD DEMO. Check it out.  
D136 PUNK CROZ CREW MEGADISK. Includes NEIGHBOURS.  
D137 BRUCE LEE SLIDEHOW (2 Disks) Fans only.

- D145 FAST CARS SLIDEHOW. For fans only.  
D146 MAGNUS & RUNNER ANIM (1 Meg) Good stuff.  
D147 NEIGHBOURS SLIDEHOW. With captions, added. Funny.  
D148 V.I.C. CALANDRA (2 DISKS) Good.  
D150 WINDYBIRD ANIMS (1 Meg) (2 Disks) Very cool.  
D151 BECKING 2 SLIDEHOW. For fans only.  
D152 KIM WILDE SLIDEHOW. For fans only.  
D153 "GAME DEMO (1 Meg) Ball. Pub. Amazing 70's.  
D154 TOTAL RECALL SLIDEHOW. Fans only.  
D155 OPERATORS VARY. OPERATION WOLF Look-a-like.  
D160 EXODUS REAL. 2D. Amazing 3D disk.  
D163 PIRATE SEQUENCE (1 Meg) Bares on tape.  
D167 KNIGHT ANIM. Good stuff.  
D168 FORGION MEGADISK. Good.  
D169 BUSHMAN DEMO 2. Get it now.  
D174 "POWER 1 (2 Disks) 2 drives m.  
D176 JASPER CARROT. Fans only.  
D177 NEWTRIX 3 (2 Disks) 2 drives m.  
D178 YALOW.  
D181 NANA PICS. Good slideshow.  
D184 DRAGONS LAR 2 (1 Meg) Check it out.  
D185 "GAMES OF THE DEMON DEMO (1 Meg).  
D186 TEAM SUZUKI DEMO. Rolling demo.  
D187 BATMAN THE MOVIE (1 Meg) Good. Fans only.  
D188 DEMONIAK DEMO (1 Meg) Good stuff.  
D191 SIMPLE STUFF. Good demos.  
D190 BRACK DEMO. Very very, very good.  
D191 COOL CARS. Amazing pictures.  
D194 PROLOGUE PARTY. Time. Sh back to.  
D195

- D196 TEAM SUZUKI DEMO. Rolling demo.  
D187 BATMAN THE MOVIE (1 Meg) Good. Fans only.  
D188 DEMONIAK DEMO (1 Meg) Good stuff.  
D191 SIMPLE STUFF. Good demos.  
D190 BRACK DEMO. Very very, very good.  
D191 COOL CARS. Amazing pictures.  
D194 PROLOGUE PARTY. Time. Sh back to.  
D195  
D205 WALKER 1 (2 Disks) 2 Megs. The big one.  
D206 WALKER 2 (2 Disks) 2 Megs. Another big.  
D207 TRON ANIM (2 Disks) 2 Megs. Amusing. Brill.  
D217 SLYTH DEMOS 1. 4 cool demos.  
D222 MYSTERY. TRILUX SYSTEMS. Fantastic.  
D223 HAN INVASION. Amusing pictures.  
D224 ANARCHY SYSTEM VIOLET. Mega cool.  
D225 SLYTH DEMOS COMP 2. 6 brill demos.  
D226 CRONOS TOTAL DESTRUCTION.  
D228 TOP GUN DEMO (2 Megs) 2 Disks.  
D229 PHENOMENA MEGADISK II. Brill!  
D231 2 Disk KIRK MEDIA DEMO. Amazing!  
D237 SILENCE GLOBAL. THRASH. Awesome.  
D243 SCOPES DEMO DISK 152. 1 Meg. Includes a cool Simpsons demo.  
D246

- D247  
D248  
D249  
D250  
D251  
D252  
D253  
D254  
D255  
D256  
D257  
D258  
D259  
D260  
D261  
D262  
D263  
D264  
D265  
D266  
D267  
D268  
D269  
D270  
D271  
D272  
D273  
D274  
D275  
D276  
D277  
D278  
D279  
D280  
D281  
D282  
D283  
D284  
D285  
D286  
D287  
D288  
D289  
D290  
D291  
D292  
D293  
D294  
D295  
D296  
D297  
D298  
D299  
D300  
D301  
D302  
D303  
D304  
D305  
D306  
D307  
D308  
D309  
D310  
D311  
D312  
D313  
D314  
D315  
D316  
D317  
D318  
D319  
D320  
D321  
D322  
D323  
D324  
D325  
D326  
D327  
D328  
D329  
D330  
D331  
D332  
D333  
D334  
D335  
D336  
D337  
D338  
D339  
D340  
D341  
D342  
D343  
D344  
D345  
D346  
D347  
D348  
D349  
D350  
D351  
D352  
D353  
D354  
D355  
D356  
D357  
D358  
D359  
D360  
D361  
D362  
D363  
D364  
D365  
D366  
D367  
D368  
D369  
D370  
D371  
D372  
D373  
D374  
D375  
D376  
D377  
D378  
D379  
D380  
D381  
D382  
D383  
D384  
D385  
D386  
D387  
D388  
D389  
D390  
D391  
D392  
D393  
D394  
D395  
D396  
D397  
D398  
D399  
D400  
D401  
D402  
D403  
D404  
D405  
D406  
D407  
D408  
D409  
D410  
D411  
D412  
D413  
D414  
D415  
D416  
D417  
D418  
D419  
D420  
D421  
D422  
D423  
D424  
D425  
D426  
D427  
D428  
D429  
D430  
D431  
D432  
D433  
D434  
D435  
D436  
D437  
D438  
D439  
D440  
D441  
D442  
D443  
D444  
D445  
D446  
D447  
D448  
D449  
D450  
D451  
D452  
D453  
D454  
D455  
D456  
D457  
D458  
D459  
D460  
D461  
D462  
D463  
D464  
D465  
D466  
D467  
D468  
D469  
D470  
D471  
D472  
D473  
D474  
D475  
D476  
D477  
D478  
D479  
D480  
D481  
D482  
D483  
D484  
D485  
D486  
D487  
D488  
D489  
D490  
D491  
D492  
D493  
D494  
D495  
D496  
D497  
D498  
D499  
D500  
D501  
D502  
D503  
D504  
D505  
D506  
D507  
D508  
D509  
D510  
D511  
D512  
D513  
D514  
D515  
D516  
D517  
D518  
D519  
D520  
D521  
D522  
D523  
D524  
D525  
D526  
D527  
D528  
D529  
D530  
D531  
D532  
D533  
D534  
D535  
D536  
D537  
D538  
D539  
D540  
D541  
D542  
D543  
D544  
D545  
D546  
D547  
D548  
D549  
D550  
D551  
D552  
D553  
D554  
D555  
D556  
D557  
D558  
D559  
D560  
D561  
D562  
D563  
D564  
D565  
D566  
D567  
D568  
D569  
D570  
D571  
D572  
D573  
D574  
D575  
D576  
D577  
D578  
D579  
D580  
D581  
D582  
D583  
D584  
D585  
D586  
D587  
D588  
D589  
D590  
D591  
D592  
D593  
D594  
D595  
D596  
D597  
D598  
D599  
D600  
D601  
D602  
D603  
D604  
D605  
D606  
D607  
D608  
D609  
D610  
D611  
D612  
D613  
D614  
D615  
D616  
D617  
D618  
D619  
D620  
D621  
D622  
D623  
D624  
D625  
D626  
D627  
D628  
D629  
D630  
D631  
D632  
D633  
D634  
D635  
D636  
D637  
D638  
D639  
D640  
D641  
D642  
D643  
D644  
D645  
D646  
D647  
D648  
D649  
D650  
D651  
D652  
D653  
D654  
D655  
D656  
D657  
D658  
D659  
D660  
D661  
D662  
D663  
D664  
D665  
D666  
D667  
D668  
D669  
D670  
D671  
D672  
D673  
D674  
D675  
D676  
D677  
D678  
D679  
D680  
D681  
D682  
D683  
D684  
D685  
D686  
D687  
D688  
D689  
D690  
D691  
D692  
D693  
D694  
D695  
D696  
D697  
D698  
D699  
D700  
D701  
D702  
D703  
D704  
D705  
D706  
D707  
D708  
D709  
D710  
D711  
D712  
D713  
D714  
D715  
D716  
D717  
D718  
D719  
D720  
D721  
D722  
D723  
D724  
D725  
D726  
D727  
D728  
D729  
D730  
D731  
D732  
D733  
D734  
D735  
D736  
D737  
D738  
D739  
D740  
D741  
D742  
D743  
D744  
D745  
D746  
D747  
D748  
D749  
D750  
D751  
D752  
D753  
D754  
D755  
D756  
D757  
D758  
D759  
D760  
D761  
D762  
D763  
D764  
D765  
D766  
D767  
D768  
D769  
D770  
D771  
D772  
D773  
D774  
D775  
D776  
D777  
D778  
D779  
D780  
D781  
D782  
D783  
D784  
D785  
D786  
D787  
D788  
D789  
D790  
D791  
D792  
D793  
D794  
D795  
D796  
D797  
D798  
D799  
D800  
D801  
D802  
D803  
D804  
D805  
D806  
D807  
D808  
D809  
D810  
D811  
D812  
D813  
D814  
D815  
D816  
D817  
D818  
D819  
D820  
D821  
D822  
D823  
D824  
D825  
D826  
D827  
D828  
D829  
D830  
D831  
D832  
D833  
D834  
D835  
D836  
D837  
D838  
D839  
D840  
D841  
D842  
D843  
D844  
D845  
D846  
D847  
D848  
D849  
D850  
D851  
D852  
D853  
D854  
D855  
D856  
D857  
D858  
D859  
D860  
D861  
D862  
D863  
D864  
D865  
D866  
D867  
D868  
D869  
D870  
D871  
D872  
D873  
D874  
D875  
D876  
D877  
D878  
D879  
D880  
D881  
D882  
D883  
D884  
D885  
D886  
D887  
D888  
D889  
D890  
D891  
D892  
D893  
D894  
D895  
D896  
D897  
D898  
D899  
D900  
D901  
D902  
D903  
D904  
D905  
D906  
D907  
D908  
D909  
D910  
D911  
D912  
D913  
D914  
D915  
D916  
D917  
D918  
D919  
D920  
D921  
D922  
D923  
D924  
D925  
D926  
D927  
D928  
D929  
D930  
D931  
D932  
D933  
D934  
D935  
D936  
D937  
D938  
D939  
D940  
D941  
D942  
D943  
D944  
D945  
D946  
D947  
D948  
D949  
D950  
D951  
D952  
D953  
D954  
D955  
D956  
D957  
D958  
D959  
D960  
D961  
D962  
D963  
D964  
D965  
D966  
D967  
D968  
D969  
D970  
D971  
D972  
D973  
D974  
D975  
D976  
D977  
D978  
D979  
D980  
D981  
D982  
D983  
D984  
D985  
D986  
D987  
D988  
D989  
D990  
D991  
D992  
D993  
D994  
D995  
D996  
D997  
D998  
D999  
D1000

## MUSIC

- M001 BUYER REMIX RAP Long & great.  
M002 THE SWANER A LITTLE BIT (2 Disks) Funny.  
M003 D-MON MUSIC 2. Cool music.  
M004 D-MON MUSIC 4. 4 Good music.  
M005 INDIAN MUSIC 3. Some great music.  
M006 REBELS MEGADISK. Robotic style music.  
M007 NEWTONS MUSIC. Cool.  
M008 YOUT TOUTH. "MADE IN HEAVEN" (2 Disks) 2 drives m.  
M009 AMIGA CHART MIX 3. Good music.  
M010 TITAN TRAX 1. Great, heavy music.  
M011 CRUSADERS FREEDOM OUT. Well and disk.  
M012 H.C.C. JARRE SHOW. Get it.  
M013 AMIGA CHART MIX 5. More well.  
M014  
M015  
M016  
M017  
M018  
M019  
M020  
M021  
M022  
M023  
M024  
M025  
M026  
M027  
M028  
M029  
M030  
M031  
M032  
M033  
M034  
M035  
M036  
M037  
M038  
M039  
M040  
M041  
M042  
M043  
M044  
M045  
M046  
M047  
M048  
M049  
M050  
M051  
M052  
M053  
M054  
M055  
M056  
M057  
M058  
M059  
M060  
M061  
M062  
M063  
M064  
M065  
M066  
M067  
M068  
M069  
M070  
M071  
M072  
M073  
M074  
M075  
M076  
M077  
M078  
M079  
M080  
M081  
M082  
M083  
M084  
M085  
M086  
M087  
M088  
M089  
M090  
M091  
M092  
M093  
M094  
M095  
M096  
M097  
M098  
M099  
M100  
M101  
M102  
M103  
M104  
M105  
M106  
M107  
M108  
M109  
M110  
M111  
M112  
M113  
M114  
M115  
M116  
M117  
M118  
M119  
M120  
M121  
M122  
M123  
M124  
M125  
M126  
M127  
M128  
M129  
M130  
M131  
M132  
M133  
M134  
M135  
M136  
M137  
M138  
M139  
M140  
M141  
M142  
M143  
M144  
M145  
M146  
M147  
M148  
M149  
M150  
M151  
M152  
M153  
M154  
M155  
M156  
M157  
M158  
M159  
M160  
M161  
M162  
M163  
M164  
M165  
M166  
M167  
M168  
M169  
M170  
M171  
M172  
M173  
M174  
M175  
M176  
M177  
M178  
M179  
M180  
M181  
M182  
M183  
M184  
M185  
M186  
M187  
M188  
M189  
M190  
M191  
M192  
M193  
M194  
M195  
M196  
M197  
M198  
M199  
M200  
M201  
M202  
M203  
M204  
M205  
M206  
M207  
M208  
M209  
M210  
M211  
M212  
M213  
M214  
M215  
M216  
M217  
M218  
M219  
M220  
M221  
M222  
M223  
M224  
M225  
M226  
M227  
M228  
M229  
M230  
M231  
M232  
M233  
M234  
M235  
M236  
M237  
M238  
M239  
M240  
M241  
M242  
M243  
M244  
M245  
M246  
M247  
M248  
M249  
M250  
M251  
M252  
M253  
M254  
M255  
M256  
M257  
M258  
M259  
M260  
M261  
M262  
M263  
M264  
M265  
M266  
M267  
M268  
M269  
M270  
M271  
M272  
M273  
M274  
M275  
M276  
M277  
M278  
M279  
M280  
M281  
M282  
M283  
M284  
M285  
M286  
M287  
M288  
M289  
M290  
M291  
M292  
M293  
M294  
M295  
M296  
M297  
M298  
M299  
M300  
M301  
M302  
M303  
M304  
M305  
M306  
M307  
M308  
M309  
M310  
M311  
M312  
M313  
M314  
M315  
M316  
M317  
M318  
M319  
M320  
M321  
M322  
M323  
M324  
M325  
M326  
M327  
M328  
M329  
M330  
M331  
M332  
M333  
M334  
M335  
M336  
M337  
M338  
M339  
M340  
M341  
M342  
M343  
M344  
M345  
M346  
M347  
M348  
M349  
M350  
M351  
M352  
M353  
M354  
M355  
M356  
M357  
M358  
M359  
M360  
M361  
M362  
M363  
M364  
M365  
M366  
M367  
M368  
M369  
M370  
M371  
M372  
M373  
M374  
M375  
M376  
M377  
M378  
M379  
M380  
M381  
M382  
M383  
M384  
M385  
M386  
M387  
M388  
M389  
M390  
M391  
M392  
M393  
M394  
M395  
M396  
M397  
M398  
M399  
M400  
M401  
M402  
M403  
M404  
M405  
M406  
M407  
M408  
M409  
M410  
M411  
M412  
M413  
M414  
M415  
M416  
M417  
M418  
M419  
M420  
M421  
M422  
M423  
M424  
M425  
M426  
M427  
M428  
M429  
M430  
M431  
M432  
M433  
M434  
M435  
M436  
M437  
M438  
M439  
M440  
M441  
M442  
M443  
M444  
M445  
M446  
M447  
M448  
M449  
M450  
M451  
M452  
M453  
M454  
M455  
M456  
M457  
M458  
M459  
M460  
M461  
M462  
M463  
M464  
M465  
M466  
M467  
M468  
M469  
M470  
M471  
M472  
M473  
M474  
M475  
M476  
M477  
M478  
M479  
M480  
M481  
M482  
M483  
M484  
M485  
M486  
M487  
M488  
M489  
M490  
M491  
M492  
M493  
M494  
M495  
M496  
M497  
M498  
M499  
M500  
M501  
M502  
M503  
M504  
M505  
M506  
M507  
M508  
M509  
M510  
M511  
M512  
M513  
M514  
M515  
M516  
M517  
M518  
M519  
M520  
M521  
M522  
M523  
M524  
M525  
M526  
M527  
M528  
M529  
M530  
M531  
M532  
M533  
M534  
M535  
M536  
M537  
M538  
M539  
M540  
M541  
M542  
M543  
M544  
M545  
M546  
M547  
M548  
M549  
M550  
M551  
M552  
M553  
M554  
M555  
M556  
M557  
M558  
M559  
M560  
M561  
M562  
M563  
M564  
M565  
M566  
M567  
M568  
M569  
M570  
M571  
M572  
M573  
M574  
M575  
M576  
M577  
M578  
M579  
M580  
M581  
M582  
M583  
M584  
M585  
M586  
M587  
M588  
M589  
M590  
M591  
M592  
M593  
M594  
M595  
M596  
M597  
M598  
M599  
M600  
M601  
M602  
M603  
M604  
M605  
M606  
M607  
M608  
M609  
M610  
M611  
M612  
M613  
M614  
M615  
M616  
M617  
M618  
M619  
M620  
M621  
M622  
M623  
M624  
M625  
M626  
M627  
M628  
M629  
M630  
M631  
M632  
M633  
M634  
M635  
M636  
M637  
M638  
M639  
M640  
M641  
M642  
M643  
M644  
M645  
M646  
M647  
M648  
M649  
M650  
M651  
M652  
M653  
M654  
M655  
M656  
M657  
M658  
M659  
M660  
M661  
M662  
M663  
M664  
M665  
M666  
M667  
M668  
M669  
M670  
M671  
M672  
M673  
M674  
M675  
M676  
M677  
M678  
M679  
M680  
M681  
M682  
M683  
M684  
M685  
M686  
M687  
M688  
M689  
M690  
M691  
M692  
M693  
M694  
M695  
M696  
M697  
M698  
M699  
M700  
M701  
M702  
M703  
M704  
M705  
M706  
M707  
M708  
M709  
M710  
M711  
M712  
M713  
M714  
M715  
M716  
M717  
M718  
M719  
M720  
M721  
M722  
M723  
M724  
M725  
M726  
M727  
M728  
M729  
M730  
M731  
M732  
M733  
M734  
M735  
M736  
M737  
M738  
M739  
M740  
M741  
M742  
M743  
M744  
M745  
M746  
M747  
M748  
M749  
M750  
M751  
M752  
M753  
M754  
M755  
M756  
M757  
M758  
M759  
M760  
M761  
M762  
M763  
M764  
M765  
M766  
M767  
M768  
M769  
M770  
M771  
M772  
M773  
M774  
M775  
M776  
M777  
M778  
M779  
M780  
M781  
M782  
M783  
M784  
M785  
M786  
M787  
M788  
M789  
M790  
M791  
M792  
M793  
M794  
M795  
M796  
M797  
M798  
M799  
M800  
M801  
M802  
M803  
M804  
M805  
M806  
M807  
M808  
M809  
M810  
M811  
M812  
M813  
M814  
M815  
M816  
M817  
M818  
M819  
M820  
M821  
M822  
M823  
M824  
M825  
M826  
M827  
M828  
M829  
M830  
M831  
M832  
M833  
M834  
M835  
M836  
M837  
M838  
M839  
M840  
M841  
M842  
M843  
M844  
M845  
M846  
M847  
M848  
M849  
M850  
M851  
M852  
M853  
M854  
M855  
M856  
M857  
M858  
M859  
M860  
M861  
M862  
M863  
M864  
M865  
M866  
M

## Infernal internal!

I have had my B2000 for about two and a half years, and at first it was full of praise for the Amiga.

About 10 months ago, however, I started getting messages about read/write errors (Argh! - Ed), floppies not being validated (Eek! - Ed), and using DiskDoctor (Groan! - Ed). These appear intermittently, such that a disk might work once, then five minutes later prompt a host of errors.

The result was that I couldn't use my Amiga for hours on end, and even then had to wait until the following day to use it again. Any disk can succumb to the dreaded messages, and the same disks work perfectly on an A500.

I have tried every virus killer I can find, but they come up with nothing, so in desperation I sent the machine to be repaired, only to be told that there was nothing wrong with it!

Please help before I'm forced to buy an Atari  
Andy Hamilton, Dalkieth

Hmm - desperate though you may be, there's no need to sink to the level of an ST.

You say the disks work in an A500 but not the 2000, so the disks aren't at fault. This also suggests that the problem isn't simply one of drive alignment. If the A500 can read disks from the B2000, the latter's write function can't be too badly out of step.

It sounds like the internal drive on the B2000 is, to use a technical term, fritzied. The first thing to do is to send your machine to a reputable repair company. It sounds like the one you used took no more than a cursory glance at the Amiga. Our repair feature in the June issue highlights a few of the better companies.

Remember to include as detailed a note as you can on the problems you've been encountering.

## Clocked out for good?

I bought a ram expansion a week after I bought my Amiga, and at first I set the clock from preferences. After a while, however, I decided to try this operation from CLI.

I opened up the CLI, set the clock, pressed Return, and got a "Battery Backed-up Clock Not Found" message. I did the same thing three times with the same reply, got fed up, and decided to reset the Amiga.

The next thing I see upon resetting is the

Workbench prompt (the hand holding the disk) flicker and disappear as if I'd just lost the reception on my TV. I tried to re-tune it, but couldn't.

In the end, I turned off the computer and came back about an hour later, but the result was the same - no Workbench screen. The power light is on and the drive light now goes without the drive motor making any noise, but the drive doesn't do anything when I put a disk in.

I don't know if it's a virus or bad luck or what, but I need HELP!

Murmitaz Arif Qadeer, London

Try taking the ram expansion out and booting the Amiga again. If, as sounds likely, the card is duff (the on-board clock certainly doesn't work) it might

be stopping the Amiga from booting up because the memory isn't configuring.

If this is happening, the machine might be locking up when it does its system checks. We once had a 2000 do that because one leg of one chip out of 32 on a ram board was out of its socket.

If the Amiga refuses to boot with the ram card removed, the only option is to send it for repair.

## Sizeable problems

I have a Citizen 120D printer and my stationary is A4 paper. My printer, however, can only print on 11in or 12in paper depending on a DIP switch setting. Consequently, I cannot print to top of page, no matter how hard I try.

I believe it can be done, perhaps through printer escape codes, but unfortunately I am unable to locate the correct ones. I was hoping to encode the changes on Workbench during the startup-sequence or preferences, but I'm not sure how it is done.

Is there any way to edit or browse through a binary file using Shell or some other package?

Could you tell me if the Bench 2.0 demo on the April coverdisk is supposed to do anything but disintegrate the screen?

R B Lavender, Polesworth

The printer driver itself is written so that the full A4 paper size is 11in, so even if you have the correct printer driver set in your Workbench preferences, you will only be able to print to that length.

You can examine and edit a machine code file using a hex editor such as the shareware program NewZap. However, unless you are a machine code programmer this will be of little use to you.

Fortunately your ever-helpful coverdisk next month will include Jorgen Thompson's excellent (if a little daunting) shareware program Printer Driver Generator (PrtDrvGen). With this, you can either

## Picking the right sort of drive

I have had my A500 for six months and I would like to expand it. I already have a 1 meg upgrade but I am considering buying an external disk drive.

Could you tell me which one does the best job for the cheapest price? Also, could you tell me which is the best PD C compiler?

Where can I get the A1500 expansion kit? I have also heard of a similar expansion kit called Bodega Bay. Where can I get information on this and how much will it cost?

John Hatwell, Templecombe

There are many makes of external drive available, and most are as good as each other. Make sure the one you pick has an enable/disable switch and a throughport and you shouldn't go too far wrong.

Most of them use mechanisms from one of a

half dozen or so Japanese manufacturers, so are identical on the inside in any case, but we did once have a drive with an NEC mechanism which was both reliable and very quiet.

The best PD compiler is probably Szoobon C, available on Fish Disk 340 under the guise of North C.

The A1500 kit is available from Checkmate Digital (071-923 0658) for £230. The Bodega Bay unit will soon be available from Amiga Centre Scotland (031-557 4242) as soon as a price is settled (it's £350 in the US).

We would recommend neither unit unless you are a confirmed A500 fan. The best path at present for an upgrader is to sell the A500 (you should be able to get £300 to £400 depending on how much software you flog with it) and chip in the difference for an official Commodore A1500.



Printer out of puff?  
Computer cracking up?  
We're here to help!

Write to Amiga Computing,  
Europa House, Adlington Park, Macclesfield SK10 4NP

## Tin box blues

I would like to ask a few questions about the possibility of expanding the A500 further up the Amiga ladder.

- Is there an external board for the A500 that permits us to make use of A2000 add-ons?
- If it exists, does it support full size cards?
- Can any of the slots make use of PC cards? (I have a Vortex ATOnce installed)
- What is its price, where can I get it, and is it worth buying?

Stephen Scerri, H'Attard, Malta

Another aspiring A500 owner! To answer your questions one at a time,

- Yes, the main contenders being the Checkmate Digital A1500 and California Access's Bodega Bay unit.
- The Bodega Bay has four Zorro II slots (Zorro II is the standard Amiga 2000 expansion slot) and the A1500 can be given a half-length card slot for

E69. With the addition of the imminent Override box, the A1500 will have two full-size slots.

- Three of Bodega Bay's slots are PC compatible.
- The A1500 base unit is £230, and a half-length card is a further £69. Phone Checkmate on 071-923 0658 for details of the Override box. Information on Bodega Bay (which costs \$350) is available from Amiga Centre Scotland (031-557 4242) or direct from California Access on (0101) 408 378 0340. As I said earlier, these upgrade options are really only suitable for the A500 owner who either detests the thought of parting with his or her machine, or who has a large range of expensive A500-specific peripherals.

If I had to plump for one option, I'd go for Bodega Bay, as it has four full-length slots and a built-in power supply for the extra hardware. The A1500 unit, on the other hand, has the advantage of being cheaper and more readily available.

create your own printer driver from scratch or, more usefully, modify existing Workbench drivers to suit your needs.

By manipulating the values in fields 28 to 31, which contain settings for the custom paper size, you can decide exactly what size of paper your printer will print on to the nearest 0.01 inch.

### A590 horrors

My A590 has been soldering on now for about two years, and apart from a steady increase in the noise from the cooling fan, it has given me little to worry about – until last week!

I was half way through a long de-archiving process involving an archive of some 24 files, when the system locked up with my very first read/write error. Help!

Paul Flannelin, Blarney, Ireland

Don't worry too much – read/write errors will happen on old drives. You should be able to save most of your files with FixDisk, and patch up your read/write error. We'd also suggest you make backups from now on.

### Multilingual Amiga

I am a student working towards a degree (hopefully!) in computer science, so as you'd guess my budget is limited. I work at college on a DEC mini network, and use a variety of languages including Fortran 77.

Could you suggest a Fortran package for the Amiga in the public domain? It doesn't have to be any great shakes, just so long as I can do my 'homework' on the A500, then carry on at college on my terminal.

The ability to use the same files on either machine would be a bonus, but I'd be prepared to forego this feature.

Also, I program in Pascal on my 286 AT and would be interested in a Pascal compiler on the Amiga.

J Parker, Paisley

You will find the BCF Fortran compiler complete with linker and runtime library on Fish Disk 470, one of the most recent Fred Fish releases.

It claims to be a standard implementation of Fortran, so it should be compatible with the version you use at college. Any uncompiled Fortran Ascl

source should be easy to port from machine to machine, but how you'll get it into a DEC network we leave to you to sort out!

To transfer files from Amiga to PC is easy enough using CrossDos, Dos-2-Dos, or the PD program MessyDos (Fish 357), so you'll have no problems working on the AT with Ascl source generated on the Amiga, or vice versa.

As for a PD Pascal compiler, you could do worse than try PCY, which you'll find on page 56 of the Akore shareware catalogue. We gave the catalogue away free with our June issue, but if you didn't get it, you can order PCY by phoning 0800 252221 and asking for disk UT4144.

### Star performer

Last year I bought a black and white LC24-10 dot matrix printer and since then I have heard of colour conversion kits that allow you to change your printer to full colour. Please tell me more about these kits.

Are they available for the Star LC24-10? How much do they cost and are they difficult to install?

Also, I am very interested in PD music programs, especially MED. Is there any way that finished songs could be output clearly to cassette tape?

Philip McDonald, Sunderland

I'm afraid to say the Star LC24-10 does not have a colour upgrade option, unlike the LC10 which can be upgraded easily and quite cheaply.

The Amiga's stereo output can be taken directly to tape from the two jack sockets at the rear of the A500, though for the best quality you might want to use an amplifier or mixer and take the signal down so it won't overdrive the tape. In other words, you can treat the Amiga as just another music source.

### Expanded to the limits

I am the owner of an A500 with a standard internal half meg expansion board (no Gary board) and an A5000 accelerator card. Since I use my machine for ray tracing a lot, I find that I run out of chip memory a lot.

Mine is an old issue 1.2 A500 with an old fat Agnus. I have heard that there is a hardware modification to the motherboard to enable the use of a full

meg of chip ram with a Fatter Agnus, and I was wondering exactly what this modification is.

Will there be any problems with the A500 board either physically (it is quite large) or in terms of DMA conflict?

I would also like to know how I could use an FPU such as the 68881 if I installed it on the board. I know that some programs detect and use it automatically, but as I code my own ray tracing software I would need some way of doing this myself.

If I could make my ray tracer friendly enough, would you want it for the coverdisk? As a last question, I have heard much about Real 3D, but always the Pro version. What is missing from the Beginner's version to make it so much cheaper?

Barnaby Madgett, Leighton Buzzard

On old Amigas the motherboard modification is a bit of major surgery we can't go into here. Needless to say, cobbled-up hardware projects are a hit-and-miss affair which the soldering iron brigade love, and Commodore (not to mention almost every engineer) hates.

Newer revision 6A boards actually have spaces for a further half meg of chip RAM which you can solder on yourself, but as you are warned that this will render your trapdoor expansion slot useless for further memory expansion purposes. Commodore's technical books recommend you stay well away from it, and I heartily agree with them.

On a slightly more positive note, you can use one of the trapdoor boards which utilise the Gary chip connection, but as you rightly suspect, these can physically clash with the A5000, which spreads over the top of the Gary chip.

The ICD AdRAM board is one we definitely know to be incompatible with the A5000, but there may be others which aren't. Check carefully before you buy.

Finally, your questions on Real 3D should be answered by this month's in-depth ray tracing head-to-head feature.

### No way, Pal!

I am emigrating to Canada shortly, and will obviously be taking my Amiga. What changes to my set-up will I need to make for NTSC, the 110 volt supply, and so on?

Will my existing PAL software purchased in the UK run in Canada? Also, could you suggest a UK distributor where I can obtain the necessary hardware, like a new power supply and TV modulator, if these are needed?

Nick Glover, Brighton

No you won't be taking your Amiga! Sell it here and buy a new one in Canada – it's an involved and tricky hardware project to convert an Amiga from PAL to NTSC and it's not worth the bother.

The power supply problem is easily solved with a transformer which you should be able to get in most electrical shops (try Tandy), but the Amiga's internal architecture is another thing altogether.

In addition, all software which opens up a full PAL screen will not work on NTSC machines, so you'd be best to sell such titles along with the Amiga. Hang on to those which open in NTSC mode (with a black area in the bottom fifth of the screen) as these will work on your new NTSC Amiga.

Sorry about the bad news, but we didn't invent the incompatible standards, and neither did Commodore.



## SAVE MONEY AND THE ENVIRONMENT

In 1989 Western Europeans threw away over **128 million** printer ribbons. They weighed over **9,000 tonnes** in total and would reach **right around the world** if laid end to end. A used ribbon cartridge is being thrown away somewhere in the UK **every second** of every day.

You can help put an end to this environmental waste and save some money at the same time thanks to **RE-INK**, a revolutionary new spray which brings new life to exhausted fabric printer ribbons.

**RE-INK** is cost effective and simple to use. Simply open up your plastic ribbon cartridge, spray a few squirts of **RE-INK's** special ink and lubricant formula and your ribbon is good as new – sometimes even better!



BEST OF ALL, **RE-INK** IS  
AVAILABLE IN THIS SPECIAL  
READER OFFER FOR ONLY

**£12.95**

Order using the form on Page 143

- ★ **RE-INK** will save up to **90%** on what you currently spend on new ribbons
- ★ **RE-INK** – treated ribbons give **clearer, blacker** print than new ribbons
- ★ **RE-INK** is a very **high quality ink** – no blotchy or patchy ink
- ★ **RE-INK** is universal – it works with **all fabric ribbons**
- ★ **RE-INK** can extend the life of your printer with its special **lubricant oils**

## 99p ✕ Sagittarian PD ✕ 99p

50pp per disk (or 50pp per disk if you supply a blank). Add 50p P&P per order in either case. Overseas orders please add £2 per order. CATALOGUE disk 70p (including tips on buying video equipment, plus hand drawn portraits and digitised pictures. Overseas please add £1).

**GAMMA-Technoball**, playable demo of this TLK games release. A breakout/breaker crossover with 4 bits, corner pockets, and various options.  
**GRAID-Dr Who** digitised sidescroll 1. Featuring all 7 doctors.  
**GRAID-Dr Who** digitised sidescroll 2. Featuring the 4 most recent doctors.  
**GRAID-Star Trek**. The Next Generation digitised sidescroll 1.  
**GRAID-Star Trek**. The Next Generation digitised sidescroll 2.  
**GRAID-Batman** "Starline" digitised sidescroll from the first series episode.  
**GRAID-Doctor Who** Gallifrey sidescroll from the Doctor's home planet.  
**UT3D**—includes ST EMULATOR that runs loads of non-

crunched software (needs 2 drives). **Powerpack V2.36**. **Novelty** V2.36. **Vista X 4.4**. **Robot 3D**—The C Manual (1 disk archived or 3 disks ordered for single drive users, please state). **PSD 344-PSM** Sound Reference Manual Computer. **PSD 344-PSM** 116, 118, 119, 120, 121, 122, 123 and 124. **PSD 344-PSM** 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Tutorial Videos – "Getting to Grips with your Amiga from setting up and plugging in to the CLI, soldering and de-soldering". In production at time of going to press. Please write for availability before ordering. May be available on various formats, not just VHS. Price £14.99 (pay very according to tape format; overseas orders please add £4).

Please address mail to: Paul Brown (ACS), 104 Wood St, London, E17 3HX.

Telephone: 081 509 9636, International +44 8 15 09 96 36

Chèques / PCE / Eurocheques / Bankers Drafts payable to P. A. Brown

## MAKE YOUR AMIGA EARN!

Yes making money with your AMIGA becomes incidental when you know how! Your AMIGA is, if only you knew it, a gold mine. The size and make is irrelevant. Make the initial effort **NOW** by starting your own **HOME BASED BUSINESS**.

This may be the most important move you will ever make! **REMEMBER:** You'll never get rich by doing someone else's "ditch". Anyone in the country, including YOU, can become very rich in a relatively short period of time just by doing a few basic things! It's more rewarding than playing games. The benefits are many and varied. Pull it or part time.

FOR FREE DETAILS SEND S.A.E. To:

## Home Based Business.

51, Pilton Place (AM27), King & Queen Street,  
Walworth, London SE17 1DR



\*OR FOR A SPECIMEN COPY  
SEND TWO 17p STAMPS TO

LET'S COMPUTE! EUROPA HOUSE,  
ADUNGTON PARK, MACCLESFIELD, SK10 4NP

# amiga almanac



## DTV .....125

Jason Holborn takes a look at two new genlocks designed to have an impressive impact on your video presentations rather than your bank balance



## MACHINE CODE.....127

Margaret Stanger goes soft in her old age with a look at the noble art of machine code and teddies. Find out what these two have in common



## MUSIC .....129

Jason Holborn brings us his regular look at the world of Amiga music. This month he reflects on important news about Passport software



## COMMUNICATIONS .....131

Bulletin board news and Micronet monthly. The total package for comms enthusiasts from Eddie McKendrick and Anthony Purvis



## AMOS.....133

More teddies, this time from AMOS guru Peter Hickman. Find out what Sprite Base and Icon Base are for and how to use them



## CODE CLINIC .....135

Margaret Stanger does it again. Make the most of IFF files in your C programs the painless way. Gadgets, modules and functions - it's all here!



## DTP.....137

Everyone knows a picture speaks a thousand words. Barnaby Page reveals how less picture can mean more impact in your DTP presentations



## WESTLANDS P.D.

The Westlands, Somerset Place, Willenhall,  
West Midlands WV13 3DT. Tel: 0902 606728



<b>DEMOS</b> D058 HACKTRICH D071 MAGNETIC FIELDS D072 INNER CITY D074 COOL COUGAR D078 TOTAL RECALL D048 WLD COPPER D079 R0800CP D084 SUBSTANCE D100 BUDBRIN 2 (2) D040 SIMPSONS	D053 MIKE TYSON D036 CREEPSHOW <b>MUSIC</b> M018 MC HAMMER MIX M019 MADONNA "JUSTIFY MY LOVE" M026 DICI CONCERT V M016 P0P0YE MEETS... M017 DEE LITE M009 SAE MIX (3) M002 SLABBY'S MUSIC	M00 POWER PACK II <b>UTILITIES</b> V004 INTRO MAKER V001 WORKBENCH FUN V027 FIRM DEMO CREATOR V028 AUDIO UTILITIES V029 FULL FORCE 101 V032 LABEL DESIGNER V030 SLIPSTREAM V014 CLI HELP V005 202 UTILITIES
--	---	---

All disks are £1 plus 60 p.p. Please send cheque/PO made payable to **WESTLANDS PD** and send to the above address. Disk catalogues are available at 50p each or paper ones can be issued on request.

\*1 meg  
(2) No of disks  
Blank disks 40p

## FREE PD?

### RING FOR FREE INFO PACK!

### WHAT HAVE YOU GOT TO LOSE?

**FREEPHONE**  
  


# 0800 252 623

Or (051-924 0200)

(24 HOURS)

**Or Post Free To:**

## UNBEATABLE PRICES,

## FREEPOST, LIVERPOOL, L23 0XH

## WHY WASTE MONEY?

JUST LOOK WHAT YOU GET CAN FOR **£2.50** +50 p.p.

<b>GAMES</b> China Challenge 2 (Great sequel) Missile Command (de Hi-Rex) AirAce 2 (Best PD Shoot-em-up ever?) Squares Game (EXCLUSIVE RELEASE)	<b>UTILITIES</b> Master Virus Killer 2.1 (The Best) TextPlus 3 (The latest Word Pro) Spectrum Emulator (Your joking!) Utility Boot maker (Essential)
---	--

**TOO GOOD TO BE TRUE? ... KEEP READING ON**

See great DEMOS like... Harlequin - Overdose - Dexions Blind Justice  
How about some great Articles and Reviews and even FREE Competitions  
INTERESTED? ... THEN WHY NOT TRY ISSUE No 2 OF ...

## SCANNER


The 2 Disk magazine that leaves the rest standing still

Please make cheques/P.O.s payable to N. JORDAN and post now to:  
TELESCAN COMPUTER SERVICES (AC) Handsworth Road, Blackpool North Shore FY1 2RF

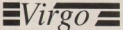
## The Gravis Mouse Stick™

For sophisticated simulation enthusiasts, who demand PERFECT control, with programs such as Proflight, F19, Mig29, etc. A professional quality, programmable optical joystick C/W 16k microprocessor and L.G.D. screen offering 1200 line count resolution. Works perfectly with all simulations with sensible mouse routines and any others in its programmable joystick mode. No other joystick comes even close to the Mouse Stick for performance, reliability and pleasure in use.

Full technical support and 1 year guarantee.  
S.A.E or telephone for full details  
**Telephone (0272) 595900**  
**Fax: (0272) 411052**



**R.C. Simulations**  
Unit 1b, Bee Hive Trading Estate,  
Crews Hole Road,  
St. George,  
Bristol BS5 8AY




## Take it up to 2½ megs

### Amiga A500 2 meg expansion

Here at last is the memory expansion board you have been waiting for! The V2000 will give you up to 2 megabytes of additional fast RAM.  
The V2000 can be expanded in ½ meg stages, from ½ meg to 2 megs, and it represents the best value for money available.

- \* Compatible with Kickstart 1.2 and 1.3
- \* Real-time clock/calendar
- \* Top-quality gold-plated connector
- \* Memory disable facility
- \* Plugs into slot under your A500 (no soldering required)
- \* Comes with full instructions
- \* Helpline available



A UK COMPANY

# £104.95

inc VAT P&P

Introductory price for  
full 2 meg expansion

V500 512K extension without clock	£25.99
V501 512K extension with clock	£29.95
(chip RAM configurable with Fatter Agnus)	

Also available (phone for full range):


V2000 board only	£37.95
V2000 + 0.5 meg	£53.96
V2000 + 1.0 meg	£70.95
V2000 + 1.5 meg	£87.95

RAM chips per ½ meg set (compatible with A590)	£18.59
---	--------

Sound Demon (quality stereo from your Amiga)	£44.96
Kickstart 1.3	£28.40
Disks (3.5" & 5.25")	35p each (+P&P)

Full range of software available.  
Phone for details

Yes. Prices include VAT & delivery




Credit card + 3.5%

Virgo Developments Ltd, Sapphire House, Fishponds Road, Wokingham, Berkshire, RG11 2QJ.

**Tel: 0734 890588 Fax: 0734 891646**

Same day despatch. 24-month guarantee. Commodore registered Amiga developer



Credit card + 3.5%

# Devices and desires

**W**hen Applied Software and Peripherals (ASAP) launched their MiniGen genlock onto the Amiga market almost three years ago, it set new standards in price versus performance. Up until then even the most basic of genlocks would have set you back over £250, but ASAP's unit cut that price by over £150.

Cheap it most certainly was, but its quality still left a lot to be desired. OK, it did the job, but that's as far as it went. Not only that, but picture quality was hideous with signal tearing and blurring left, right and centre. Straight lines came out warped and blurred, and colours bled more than in the latest designer fashions.

Spotting an obvious gap in the market, two companies have taken genlocks which look set to put an end to ASAP's monopoly for good. No longer does cheap mean underpowered – you can now produce high quality video productions without having to break the bank. But how do you decide which is best?

## The competition

RocTec Electronics are a pretty big name in the disk drive market, but have only recently begun to break into the Amiga market. Their first major release for the Amiga is the RocGen RG300C, a nifty little genlock with a very impressive price tag. It has all the functions you'd expect from an Amiga genlock, plus full fade and dissolve controls.

Providing the competition is HB Marketing, a company which should be familiar to just about all Amiga users. They've been importing and distributing serious Amiga products for years now, giving UK Amiga users the opportunity to play with Amiga products from across the globe. Their latest acquisition is the imaginatively named PAL Genlock.

Unlike the RocGen unit, HB Marketing's Genlock isn't a new product. As soon as I saw it I thought to myself, 'Oh! This looks familiar. And, lo and behold, I was right. It's none other than my old friend the Rendale 8802, a classic little genlock. If you'd bought this baby just a few months back it would have cost you £260!

Licensing the guts of the Rendale Genlock is a pretty shrewd move, but I'm surprised that HB haven't made more of the Rendale name. Personally I would have played it up as much as possible.

Just like its forerunner – and just about every other external genlock – the HB Genlock connects to the Amiga via the RGB video port. It also has a 23-pin passthru connector so you can still connect your Amiga monitor directly to the RGB output of your Amiga without loss of picture quality.

Obviously you won't be able to view the genlocked signal this way, but to solve this problem connect the Composite Out from your destination deck to the CVBS In on your monitor. This way you can view both the RGB and genlocked

Jason Holborn checks out two genlocks that won't reduce your bank manager to tears



The RocGen or the PAL? Both provide incredibly good value for money

signals at the flick of a switch. As you'd expect from a genlock with such a good pedigree, the image quality of the PAL device matches up to those costing hundreds of pounds more. It's certainly a lot better than MiniGen, but then you'd have to try pretty damned hard to produce one that isn't!

The RocGen has pretty much the same features as the HB Genlock, but the one thing that makes it so special is that it isn't restricted to overlaying Amiga graphics onto a composite video signal.

The RocGen features both fade and dissolve functions which allow you to fade out your genlocked graphics gradually, leaving just the composite video signal, or vice-versa. A very nice touch which is sure to gain the RocGen many friends.

One of the first things I noticed about the RocGen is that it doesn't feature an RGB passthru connector, an unfortunate omission. As a result you can't really leave the genlock plugged in permanently because the picture quality, although good, isn't quite up to the same standards as pure RGB. It's fine for video work but I wouldn't want to word process with it!

Obviously the greatest selling point of the RocGen is its fade and dissolve controls, but even these have a few annoying problems. For example, when you turn the knob so that the Amiga image is completely faded out, you can still see it ever so slightly ghosted over the video image. This isn't too noticeable once the image is laid down on tape, but it's still annoying.

Another gripe I have is with the control knob itself. Although the knob turns almost 360 degrees, the image doesn't actually fade in or out until the very last 45 degrees. As a result the transition is rather too severe. It would have been nice if this had been less extreme, perhaps requiring at least a 180 degree turn of the knob before the image appeared or disappeared completely.

Gripes aside, the picture quality of the RocGen seems better on the whole than the HB Genlock,

which is really going some. If you then chuck it through a PAL Encoder, the results that are obtainable are pretty damned impressive.

The RocGen doesn't come with any form of software at all, which is surprising. I would expect at the very least to receive a few test images – which is all you get with most genlocks – but no such luck. Personally I wouldn't be too concerned about this, mainly because most of us have something like a paint package anyway.

HB Marketing have very cleverly decided to bundle GenSoft's acclaimed Home Titer package with their genlock. For those of you who haven't seen it, Home Titer was reviewed in the May issue of Amiga Computing so I'll skip the detail. Originally released a few years back under the name of Video Generic Master, Home Titer has aged very well indeed. It's not quite up to the same standards as something like Broadcast Titer, but then what do you expect?

## The last word

Both genlocks represent a breakthrough in value for money. There are very few genlocks below the £500 mark that can honestly claim to offer anything substantially better than these two units. Sure, you might get better quality, but connect up a PAL Encoder to your system and you'll really have a desktop video system worth boasting about.

In the end though, there can be only one. If I had to choose between one or the other, I must admit that – despite the fact that I'm a fan of Rendale genlocks – I'd have to plump for the RocTec unit. The thing that really won me over was its powerful fade and dissolve controls, but it wins hands down in just about every other category too!

PAL GENLOCK £130.00 HB Marketing  
0753 686000

RG300 ROCGEN £117.50 Silica Systems  
081-309 1111







# California P.D.

26 Midtown Avenue, Goring-on-Thames, Nr Reading, BERKS, RG8 0AS

## Utilities

- 03771: Best Screen Size Converter (1)
- 03772: Calculator Utility (240K)
- 03773: Calendar Utility (240K)
- 03774: Games Menu Loader
- 03775: Games Utility (4)
- 03776: Keyboard Video Monitor (240K)
- 03777: Screen Windowing Disk
- 03778: Screen Windowing
- 03779: CP Window Converter
- 03780: Screen Windowing
- 03781: Screen Windowing
- 03782: Screen Windowing
- 03783: Screen Windowing
- 03784: Screen Windowing
- 03785: Screen Windowing
- 03786: Screen Windowing
- 03787: Screen Windowing
- 03788: Screen Windowing
- 03789: Screen Windowing
- 03790: Screen Windowing
- 03791: Screen Windowing
- 03792: Screen Windowing
- 03793: Screen Windowing
- 03794: Screen Windowing
- 03795: Screen Windowing
- 03796: Screen Windowing
- 03797: Screen Windowing
- 03798: Screen Windowing
- 03799: Screen Windowing
- 03800: Screen Windowing

## MUSIC

- 03801: Music Utility (240K)
- 03802: Music Utility (240K)
- 03803: Music Utility (240K)
- 03804: Music Utility (240K)
- 03805: Music Utility (240K)
- 03806: Music Utility (240K)
- 03807: Music Utility (240K)
- 03808: Music Utility (240K)
- 03809: Music Utility (240K)
- 03810: Music Utility (240K)
- 03811: Music Utility (240K)
- 03812: Music Utility (240K)
- 03813: Music Utility (240K)
- 03814: Music Utility (240K)
- 03815: Music Utility (240K)
- 03816: Music Utility (240K)
- 03817: Music Utility (240K)
- 03818: Music Utility (240K)
- 03819: Music Utility (240K)
- 03820: Music Utility (240K)
- 03821: Music Utility (240K)
- 03822: Music Utility (240K)
- 03823: Music Utility (240K)
- 03824: Music Utility (240K)
- 03825: Music Utility (240K)
- 03826: Music Utility (240K)
- 03827: Music Utility (240K)
- 03828: Music Utility (240K)
- 03829: Music Utility (240K)
- 03830: Music Utility (240K)

## Games

- 03831: Games Utility (240K)
- 03832: Games Utility (240K)
- 03833: Games Utility (240K)
- 03834: Games Utility (240K)
- 03835: Games Utility (240K)
- 03836: Games Utility (240K)
- 03837: Games Utility (240K)
- 03838: Games Utility (240K)
- 03839: Games Utility (240K)
- 03840: Games Utility (240K)
- 03841: Games Utility (240K)
- 03842: Games Utility (240K)
- 03843: Games Utility (240K)
- 03844: Games Utility (240K)
- 03845: Games Utility (240K)
- 03846: Games Utility (240K)
- 03847: Games Utility (240K)
- 03848: Games Utility (240K)
- 03849: Games Utility (240K)
- 03850: Games Utility (240K)
- 03851: Games Utility (240K)
- 03852: Games Utility (240K)
- 03853: Games Utility (240K)
- 03854: Games Utility (240K)
- 03855: Games Utility (240K)
- 03856: Games Utility (240K)
- 03857: Games Utility (240K)
- 03858: Games Utility (240K)
- 03859: Games Utility (240K)
- 03860: Games Utility (240K)

## All our disks are:

- ✓ Guaranteed Error Free!
- ✓ Complete with our own labels!
- ✓ Supplied on the **BEST** unbranded disk!
- ✓ 99p EACH

Please make all cheques/P.O.'s payable to California P.D.

MANY MORE TITLES AVAILABLE

Alt P.D. is 99p each plus 50p post & packing!

All orders are sent out the same day!

## We Support:

- ✓ Hard Disk Users
- ✓ Modern Users
- ✓ Multiple Memory Users
- ✓ Beginners & the Experienced

Free Catalogue Disk!

Phone: 0491-873418

**NOW!!**

## AMIGA BOOKS

Amiga for Beginners	£12.95	Amiga BASIC Inside & Out	£18.95
Amiga Machine Language	£14.95	Amiga 3D Graphics in BASIC	£18.95
Amiga System Prog. Guide	£12.95	Advanced System Prog. Guide	£29.95
Amiga DOS Inside & Out	£14.95	Amiga Disk Drives Inside & Out	£24.95
Amiga C for Beginners	£16.95	Amiga C for Advanced Prog.	£29.95
Amiga Desktop Video Guide	£16.95	Amiga Graphics Inside & Out	£29.95
More Tricks & Tips	£14.95	Amiga Printers Inside & Out	£29.95
Making Music on the Amiga	£29.95	Best of Tricks & Tips	£24.95
Amiga Keyboard ROM Libs & Drivers	£29.95	Amiga Keyboard ROM Includes	£29.95
Amiga Hardware Ref. Guide	£21.95	Mapping the Amiga	£19.95
Advanced Amiga BASIC	£16.95	Amiga Assembly Language Prog.	£12.95
AmigaDOS: A Databank	£14.95	AmigaDOS Quick Reference	£8.95
Getting the Most from Amiga	£9.95	Becoming an Amiga Artist	£16.95
First Book of Amiga	£14.95	Second Book of Amiga	£14.95
Elementary Amiga BASIC	£12.95	Kids & The Amiga	£13.95
Amiga Desktop Video Workbook	£29.95	Amiga Compilation	£14.95
Amiga Graphics	£14.95	AmigaDOS 2 Comparison	£22.95
Programming the 68000 (Sybex)	£22.95	AmigaDOS Ref Guide 3rd Ed	£19.95
Learn to Say Larry	£11.95	F15 Strike Eagle Handbook	£10.95
Jack Nicklaus Computer Golf	£10.95	Falcon Air Combat	£10.95
First Book of Kings Quest	£9.95	Gunsling Academy	£10.95

**EXTENDED OFFER**

Special Offer for Amiga Computing Readers •  
Buy any book marked \* and you may purchase another book from this sheet at £5 discount.  
Order Ends 30/7/91.

Free delivery in UK and Europe and surface mail worldwide.  
Add 30% for air/airmail outside Europe. Access & Visa accepted

## DTBS

18 Norwich Avenue, Rochdale, Lancs OL11 5JZ  
Tel/Fax 0706-524304

# JAM

## JUST AMIGA MONTHLY

75 Greatfields Drive, Uxbridge, UB8 3QN  
Tel: 0895 74449

**Yes! Rush me...**

SUBSCRIPTION TO JAM		✓
UK	£19.95	
Europe	£29.95	
Overseas	£49.95	
SINGLE ISSUE OF JAM		✓
UK	£1.50	
Europe	£2.25	

NAME.....  
ADDRESS.....  
POSTCODE.....  
PHONE.....  
Please post this order form (or a copy of it) with your cheque or postal order sent to JAM to: Just Amiga Monthly (AC), 75 Greatfields Drive, Uxbridge, UB8 3QN

Whether you've just bought your Amiga or whether you're already in training for Guru status, we're sure you'll find **JAM** magazine an informative, entertaining and honest read.

The articles, tutorials, reviews and commentaries in **JAM** are written by your peers - Amiga users with an almost fanatical interest in the machine. And it's also a forum where you can have your own say - a place to get it off your chest, pass on something you've learned, find out what other users think of your ideas.

**JAM** is typeset, laid-out and produced on an Amiga 500 and an Amiga B2000 - living proof that the Amiga is ideally suited to serious pursuits other than playing games. **JAM** concentrates on the applications and programming side of the machine, never afraid to go in-depth when the occasion calls for it.

It's a magazine written by Amiga users, for Amiga users.

The subscription rate for **Just Amiga Monthly** is only £19.95 (Europe £29.95) for a years supply - that's less than 40 pence per week.

But don't take our word for how good it is, drop us an order form plus a cheque or postal order for £1.50 (Europe £2.25) and we'll send you an introductory issue to check out. Naturally, there's no obligation to subscribe, but we know you'll be back for more!

# Passport to nowhere

While everything around it is thriving, the Amiga music market has suffered yet another blow with the shock announcement from US-based Passport software that development has ceased on all its Amiga products.

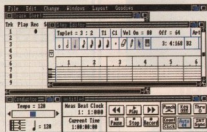
This comes in the wake of Microllusions' recent announcement that it, too, has put an end to its successful Amiga Midi sequencer, Music-X.

This effectively means the end of Passport's Master Tracks Pro sequencer and its great little budget sequencer, Trax. We almost certainly won't see improved versions of these two products, but Passport still plan to fix any major bugs that appear in either (I should hope so, too!).

According to UK distributor MCMXCIX (081-963 0663), Passport have concentrated to leave the Amiga market to concentrate more on producing music products for the more profitable Macintosh and PC platforms.

With the dominance of these two machines within the American music market, even the ST

## Jason Holborn continues his quest to bring you the hottest news from the Amiga music scene



Master Tracks Pro

has taken second place. Indeed, it is believed that the ST's dominance of the UK music market was the only thing that stopped it from facing the same fate.

So what has become of the Amiga Midi mar-

ket? Has it had its day? Did it ever have that day? It seems to me that the Amiga never quite achieved its full potential as a Midi controller due to the lack of decent software and some pretty lousy marketing from Commodore.

Products like Music-X and Master Tracks Pro are all very nice, but they hardly compare with similar products on machines like the Mac and even the ST - just compare something like Steinberg's Cubase or the C-Lab Creator series with any Amiga sequencer and you'll see what I mean.

Lousy marketing is also another problem which the Amiga has had to suffer. With the machine's obvious strengths in the video industry, Commodore would have been well advised to have pitched the Amiga as an audio and video post-production workstation, allowing users to pull together the two mediums at a cost that makes existing systems look almost laughable.

Until Commodore wake up to what is undoubtedly such an obvious market for the Amiga, it seems that our beloved machine will remain a stranger to the recording studio.

## CD goes Midi

The Music Data Company, a division of US-based Passport, have announced the launch of a new product which will be of particular interest to Midi-based musicians.

Their MidiWorld is the first in a range of new interactive music systems which integrates traditional CD audio with Midi performance data.

Looking like a conventional CD player, the MidiWorld system will happily play conventional CDs, but its greatest asset is the fact that it will also handle the new breed of CDs which also contain Midi data.

Obviously you can't chuck in your favourite Depeche Mode album and expect to have Personal Jesus fed through your Midi system, but a wide range of MidiWorld compatible titles are being prepared as we speak. They cover a wide range of musical tastes from classical, Pop and Rock to Country and Western.

For more information, contact UK distributor MCMXCIX on 081-963 0663.

## Sounds like good sense

If you're bit of a Strauss with Sound Tracker, then no doubt you'll be interested in a range of compact discs marketed by music specialist MCMXCIX (071-724 4104). Designed originally for professional musicians, they're starting to find a new audience with the availability of low cost samplers on machines like the Amiga.

Each disk contains on average over 250 sounds, each being played at various pitches to allow it to be spread across several octaves. Whether you're using a Fairlight or MasterSound, these sounds can be sampled and used - in the case of the Amiga - in just about any IFF-compatible music package including Music-X and MED.

Obviously you'll need a compact disc player to be able to gain access to the sounds, but the combination of a CD-quality sound source and a decent sampler can produce some of the cleanest sampled instruments you're likely to hear on an Amiga.

I use several of these CDs extensively. Here's a rundown of what's on offer.

**EXOTIC PERC (302 Sounds)** - Pitched and unpitched sounds including warped harmonics, eerie scrapes and more.

**ORCHESTRAL PERC (359 Sounds)** - Various cymbals, marimba, slapstick, temple block, timpani, xylophone etc.

**DRUM AND BASS (618 Sounds)** - A comprehensive percussion disc featuring a wide variety of drums, cymbals and bashes.

**ELECTRIC GUITAR (475 Sounds)** - Those killer electric guitar licks including Strat, Tally and Les Paul. Jimmy Hendrix would turn in his grave!

**VIOLIN SECTIONS & SOLO VIOLIN (300 Sounds)** - Sustained, Sul ponticello tremolos, harmonics, chromatic runs, effects.

**CELLO SECTION & SOLO CELLO (247 Sounds)** - Sustained, marcato, glisses, harmonics, pizzicato and many more.

**VIOLA & BASS SECTIONS & SOLO (225 Sounds)** - Various sustained,

pizzicato, harmonics, Sul ponticello, slaps etc.

**TROMBONE AND BASS TROMBONE (403 Sounds)** - Various sustained, swells, mute, cup mute, fortissimo, mezzo forte, piano etc.

**TRUMPET (753 Sounds)** - Pop, big trumpet, flugelhorn, cornet (in that an ice cream? - Ed), pop piccolo trumpet, classical BB trumpet and classical piccolo trumpet.

**FRENCH HORN AND TUBA (287 Sounds)** - Various french horn sustained, swells, C tuba, F tuba, cembasso tuba and tuba FX.

**BRASS SECTIONS (348 Sounds)** - Rock n' roll horns, large brass ensemble, brass quintet, large brass ensemble FX.

**SYNTH STACKS (439 Sounds)** - Various strings including octave, full orchestra and attack. voicecream, fuzzy strings, bellsweep, ominous strings plus many more.

**CITY SOUNDS (700 Sounds)** - Subway, trains, car sirens, airports, helicopters, trucks, city people.

**GRAND PIANOS (273 Sounds)** - Five beautiful grand pianos including Steinway, Bosendorfer and Yamaha.

**WOODWINDS-DOUBLE REEDS (356 Sounds)** - Oboe, oboe d'amore, English horn, bass oboe, bassoon and contrabassoon.

**STRING ORCH & FX (177 Sounds)** - Sustained, pizzicato, marcato, glissando, various strings effects.

**SAMPLER SAMPLER (191 Sounds)** - Various sound samples and effects. If you only intend buying one disk, then this is worth checking out.



Grab some decent samples with MCM's range of sound CDs





## GASTEINER MOUSE

Essential kit for all aspiring desktop publishers, graphics artists, spreadsheet operators and anyone who takes their computing seriously.

● The Gasteiner mouse is a top quality precision product that we're making available at an unbeatable price.

Yours for only  
**£19.95**

~~RRP  
£26.95~~



Capture any  
sound you  
hear and  
replay it in  
seconds

## Master Sound

It's so easy to use: Simply connect the sampler to your Amiga, load the software and immediately you have the ability to capture sounds with amazing accuracy.

Connect your compact disc player or personal stereo and digitise sounds to incorporate into your own games and tunes.

The supplied software provides complete control over the sampled sounds: Cut and paste them, flip and fade them and you're still only using a tiny fraction of the sound processing tools available.

Best of all, the comprehensive instructions will soon have you creating your own public domain demo disks complete with IFF picture files.

It's the perfect sound sampling package for beginners and experts alike.

Master Sound is a complete hardware and software sampling system for only **£34.95**

**"Is it real or is it Master Sound?"**

— Amiga Computing, May 1990



**Passing an exam . . .  
applying for a job . . .  
whatever you want to do in life you need to be  
able to SPELL!**

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

Yet most homes have what could be the ideal means of teaching spelling — the computer.

Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new software package that not only

makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like — or take on the computer in a high-speed challenge!

And this one package is ideal for everyone — with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

It includes five different tests, each making use of more than 5,000 words — so much variety that you'll never get bored.



**5 DIFFERENT TESTS  
OVER 5,000 WORDS  
FOR AGES 5 TO 15**

**SPELL! only costs £8.95. It is now available on disc and tape for six of the most popular home computers**

### FIVE ways to improve your spelling

**In a Flash:** Read the word as it flashes on the screen, then type it in. For practice runs, the word is left on the screen as it is typed.

**Rocket:** Hidden words have to be discovered in this hi-tech version of the old favourite Hangman. If they are guessed correctly the rocket will blast-off. Fail and all that's left is a load of scrap.

**Lunar Buggy:** Type fast for fun. The aim is to key in the word as it's pulled across the screen by the buggy. It has to be completed before the letters drop down a crater.

**All Mixed Up:** Jumbled letters have to be sorted out to find the scrambled word. To help beginners — and anyone else who is stuck — clues can be obtained at the press of a key.

**Conveyor Belt:** Words pass by on the screen and have to be remembered. Then they must be typed in — spell correctly. This is a challenging test of both spelling and memory.

All the programs have several options for extra flexibility — like a timer with on/off option to

In addition to using the 5,000 words provided, parents — or children — can create their own word lists for using with SPELL! This makes the package ideal for practising those hard-to-learn words, or for "Learn these spellings" homework.

# The baud walk

**S**ome fads come and go constantly – skateboards, hula-hoops, hairstyles and now, it would appear, bulletin boards. A couple of years ago it was hard work fishing out a BBS to hook your modem up to. These days it's more a case of finding one which isn't constantly engaged.

Many beginners in comms make the mistake of trying one or two boards and either sticking to them or giving up the comms habit for life. This is a great shame, as one of the benefits afforded modern-owning explorers is the ability to sample a many different services as time and finances allow.

Buying a modem tends not to be an impulse decision. There is usually a specific service in mind, like Micronet, CIX or CompuServe, when the purchase is made. Often BBS services are stumbled upon by chance rather than exploration.

Many times people have contacted me here at Amiga Computing to ask why a board doesn't exist in their area, when in reality there are usually a few and sometimes dozens to dial into.

## Quality matters

Just because a lot of boards exist doesn't automatically mean it will be easy to find services worth logging on to.

I'm not saying anything new here, in fact the

There are hundreds of BBS services to choose from. But which ones are worth calling?  
Eddie McKendrick goes in search of clues

last time I suggested that the quality of some boards left a lot to be desired I was greeted by baseball bat-wielding sysops up and down the country, determined to persuade me that every BBS in the land was worth its weight in phone bills.

I have decided to stick my neck out again solely because the state of British bulletin board services seems to be getting worse by the day. Time and time again I have called boards only to find an egomaniacal sysop closely guarding a pile of public domain software that I already have, or don't want.

Please don't get me wrong, I don't expect every board to have up to the minute releases ready for me to grab. But on the other hand I don't expect to download archives played with a virus or missing vital modules.

Nor for that matter do I expect to have a download interrupted in order to afford the sysop an opportunity to inflict his immense charm and wit upon me.

Most badly run boards are short-lived affairs,

usually because people stop calling and the erstwhile sysop eventually realises there must be easier, cheaper ways to command fame and fortune, without having to tie up a telephone line and his Amiga in the process.

## Only the best

A couple of issues ago I listed what I considered to be good examples of what well run bulletin boards can offer. At the high end there was Tony Millers 01 For Amiga on 071-377 1358 (8/N/1), while on a more modest but no less professional scale there was Steve Brazil's Speed BBS on 0734 475549 (8/N/1).

Two boards is hardly a definitive list. Indeed, I receive letters every month asking if we will re-state the Almanac BBS list which stopped last year. Well the good news is Amiga Computing will be featuring BBS listings again, in a new, more detailed format than was previously possible.

We aim to select the very best boards available from the hundreds on offer and provide some background detail for each service we feature.

In order to get things moving, this is an open invitation for all interested sysops to send details of their boards for possible inclusion within our new-look listing. It's no good just supplying the board name and number, I want to know what sets your board apart from the hundreds of others available.

It doesn't have to be a massive board with 20 lines and five networked Amigas in order to be featured. We are more interested in the board's content than its resources. Send details to: BBS List, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP.

## Shop your sysop!

Every board featured within the new listing will be called and verified by us before contact details are published. We won't be logging on with the name Amiga Computing. After all, we wouldn't want to receive any special treatment just because we are a magazine!

We are also very keen to hear what bulletin board callers rate as the best around. If you have experienced a particularly good, or bad, BBS on your travels, please do write in and let us know.

## Next month

More Micronet monthly and how to become a sysop.

## Micronet monthly

Anthony 'Big Noise' Purvis starts the first of your monthly Micronet slots with a whistlestop tour of online games

One of Micronet's strong points is the vast selection of online games. These range from Starnet which is essentially a large "play by mail" game, right up to the three big interactive attractions – Shades, Trash and Casino.

### At the casino

Casino is very much like the fruit machine and slot games which are 10-a-penny. Casino, however, is 2p per minute, which brings no real benefits over and above the chance to compete against other 'netters for the highest score.

### In the shade

Shades is a different matter. Imagine a huge text-only adventure game, add to this hundreds of other people playing at the same time who you can (and must) interact with to progress, and you have Shades.

Players (or Shadists as they are known) are ruthless in their pursuit of points in order that they may

make their way up to wizard status, usually by flashing their sword at the odd passer-by and stealing his treasure!

To some, the game is more a way of life than light relief – it's easy to get hooked, and soon you could find yourself going to Shades "meets", finding out what everyone else looks like in person!

### Digging the dirt

Trash is a similar game to Shades – you work your way up from slave to lord by collecting rubbish that is littered around the multiverse. The whole scenario is much more comical than Shades, not taking itself nearly so seriously.

Both games are good ways to meet new 'netters and have fun at the same time. If you're a fan of adventures, Shades and Trash will open up a whole new world to you. Even so, they are charged at 2p

per minute, and sometimes you won't want to log off.

Be warned, Shades and Trash can seriously damage your wealth!

**MICRONET**





# Teddy bears' picnic

**H**ave you ever wondered about the Amos functions Sprite Base and Icon Base? They provide little hooks into Amos which allow you to find out more information about the bobs and icons you may have stored in memory. In this month's Amos column we explore these hooks, write some procedures to exploit them, and finally come up with a routine to allow pasting of bobs according to their hotspots.

Although Amos gives the illusion that bobs and icons are stored in a bank, they are spread about in memory to make maximum use of the space available. The Sprite Base/Icon Base functions return the memory address of the image you specify. For instance, if you type `TEMP=SPRITE BASE(1)`, the address of BOB number one will be placed in the variable TEMP.

OK, let's try that with a real set of sprites. Check out the coverdisk and you will find a bank called "TEDDY\_BOB.ABK". Load this bank into memory by pressing Escape to go to Direct mode and type

```
Load "TEDDY_BOB.ABK"
```

Just so we have a nice clean screen to work on, type in

```
Flash Off
Curs Off
Cls 0
Get Sprite Palette
Paste Bob 30,30,1
```



You should now have a picture of a teddy bear sitting on your screen. Ideally, it would be nice to find out a little more about the image which is sitting on the screen and it is through the Sprite Base function that we can achieve this.

The area of memory where the sprite image is stored also contains information on the width, height, number of bitplanes, X hotspot and the Y hotspot. To start by looking at the width of the teddy, jump back into the editor and type:

```
XSIZ=1
WIDTH=Param
Print WIDTH
End B: -
Procedure XSIZ[SPNUM]
TEMP=Sprite Base(SPNUM)
XSIZ=peek(TEMP)+16
End ProcXSIZ
```

If you run this program the number 48 should pop up on the screen. If it is not then start worrying! The procedure `XSIZ[ ]` finds out where in memory a sprite is stored and then looks at what value is stored in this memory location.

Things get a bit more complicated now. You will see that whatever value is found in this memory location is then multiplied by 16. This is the way Francois Lionet designed Amos and is nothing to worry about.

When you grab a bob or sprite Amos will always round the width up to the nearest multiple of 16, then store this number divided by 16. Fortunately this is only done with the width so we don't have to worry about it for anything else.

## Peter Hickman ducking and diving on hooks and bobs, sprites and icons

To find out the height of an image, located two bytes or one word further up in memory, add the following lines to the bits you have already typed, remembering to put the first three lines above the End command which we used in the part of the program.

```
YSIZ=13
HEIGHT=Param
? HEIGHT
Procedure YSIZ[SPNUM]
TEMP=Sprite Base(SPNUM)
YSIZ=peek(TEMP+2)
End ProcYSIZ
```

The Amiga uses a series of bitplanes to store and display its images and Amos keeps that to standard even down to the sprites. A single bitplane is used for displaying a two-colour screen, two bitplanes are used for a four-colour screen, three bitplanes for an eight-colour screen and so on.

A simple way to change the number of bitplanes into the amount of colours an image takes up is to use the formula `COLOURS=2^BITPLANES`. Type in the next bit of code, and remember to place the first three lines before the End command.

```
BPLANES=13
PLANES=Param
? 2^PLANES
Procedure BPLANES[SPNUM]
TEMP=Sprite Base(SPNUM)
NUM=peek(TEMP+4)
End ProcNUM
```



Now we will do something useful with the next two procedures – which return the X hotspot and Y hotspot. Note that although the hotspots are used in Amos when the Sprite or Bob commands are activated, they do not function when using the Paste Bob command.

```
Flash Off
Curs Off
Cls 0
Get Sprite Palette
Hot Spot 1,111
STICK,BOB,0,13
Procedure STICK_BOB,1,NUM1
XHOT=NUM1
YHOT=NUM1
YHOT=Param
Paste Bob X-XHOT,1-YHOT,NUM
End Proc
Procedure XHOT[SPNUM]
TEMP=Sprite Base(SPNUM)
HOT=peek(TEMP+8)
End ProcXHOT
Procedure YHOT[SPNUM]
TEMP=Sprite Base(SPNUM)
HOT=peek(TEMP+9)
End ProcYHOT
```



Bob sticker can only be used for images with positive hotspots. I'll give you a general purpose routine which can cope with any hotspot next time.

Everything I have said so far can be used for icons as well. Check these out:

```
Load "TEDDY_ICON.ABK"
Flash Off
Curs Off
Cls 0
Get Icon Palette
Paste Icon 30,30,1
```



```
Procedure ISIZ[SPNUM]
TEMP=Icon Base(SPNUM)
ISIZ=peek(TEMP+16)
End ProcISIZ
```

```
Procedure YSIZ[SPNUM]
TEMP=Icon Base(SPNUM)
YSIZ=peek(TEMP+2)
End ProcYSIZ
```

```
Procedure BPLANES[SPNUM]
TEMP=Icon Base(SPNUM)
NUM=peek(TEMP+4)
End ProcNUM
```

```
Procedure XHOT[SPNUM]
TEMP=Icon Base(SPNUM)
HOT=peek(TEMP+8)
End ProcXHOT
```

```
Procedure YHOT[SPNUM]
TEMP=Icon Base(SPNUM)
HOT=peek(TEMP+9)
End ProcYHOT
```

One strange thing about icons is that although they don't use the hotspots, the gaps in memory are still there. This was to retain compatibility with the sprite banks. This means that four bytes are wasted for every icon you have in memory. Perhaps you could come up with something useful to store in these empty slots?

That's all the programming for this month. The compiler should be in the shops pretty soon now and I'm sure you will be impressed by the speed increases it delivers.

## Ctext extension

Another new extension is being developed for Amos. Called Ctext, it allows you to produce proportional or non-proportional font displays by using a quirk of the Amos system.

All the characters are stored as icons but not in bank number two, which means that you can have two icon banks in memory and your fonts can be any size or amount of colours. This means no more waiting around for those horrible Workbench things.

Oh well, I've nothing else to say except that if William Cochrane is reading this – phone me! Willie wrote Electricity on F53 5-7s, and it's giving me a few headaches converting it to the CDTV version. Unfortunately he has moved and trying to track him down is proving pretty difficult. So call me Willie or I'll leave your name off the CDTV 5-7s credits!





# Links and connections

**P**rogram source modules are solitary by nature and like to keep themselves to themselves. But a C module communicates with others of its kind, and even acknowledges an assembler source module. The software on the support disk contains no fewer than four linked modules, as well as examples of key processing and the Execute command from the Dos library. But first, a brief look at Szoobon C.

Inspired by a letter to Amigo Computing, I persuaded Stevie Kennedy to send me a copy of the PD C compiler to try. I felt that if there were any readers using Szoobon, I ought to make my source code compatible. I find that if I remember to do any casting properly, and do not write the first array address as &mybuf when I really mean &mybuf[0] my code will compile with Szoobon.

I was very impressed with the package. Someone has gone to a great deal of time and trouble with this piece of public domain software. The code compiles to 68000 source code which it stores in ram. All modules are then assembled with the A68K assembler and linked using the public domain linker Blink.

Documentation on the disk includes adequate instructions on un-archiving and using the compiler and assembler. Include files are not included, but there is an explanation of how to use them and where they can be obtained.

The assembler version of a C source file could be very useful to someone translating from C to assembler, or wanting to optimise some of the code. I also found it useful to have the C library routines available for assembler modules.

## In the archives

This month's software needs an IFF file reader, so I have included the source module `iffread.c` which reads and decompresses a picture file.

```
readfile(filename, bitmap, viewport, code)
```

This reads an IFF or ACBM file where name is the address of the filename, and bitmap is the address of the bitmap structure to be used assuming this bitmap is initialised and the rasters correctly allocated, viewport is a pointer to the viewport, and code is a colour change flag.

The module assumes that the file is present, and is IFF or ACBM and that the bitmap and viewport are OK. In this case, the picture is read into a buffer, copied to the screen, the colours changed to those of the IFF file, and then the screen is moved into place.

```
readfile("loadpic", &picinfoMap, viewport, 0);
BltBitMap(&picinfoMap, 0, 0, &screeninfoMap,
0, 0, 256, 256, &src, &dst, 0);
FreeBitMap(&picinfoMap);
MoveScreen(cursor, 0, -270);
```

There is no need to declare a void external function `readfile()` as an external reference.

The gadget module, imaginatively named `gads.c`, contains the data for the four screen gadgets – courtesy of Power Windows. The window's first gadget is declared as an external reference in

## Margaret Stanger plays tricks with IFFs

`lynx.c` so that it can be used by `lynx.c`. The main file `lynx.c` contains:

```
extern struct Gadget {Gadget};
/*pointer to first gadget in gads.c file*/
```

where `gads.c` has `IGadget` defined as a structure in the normal way. The `gads.c` file also contains the gadget handling routine:

```
void HandleEvent(object)
APTR object;
{
  if (object == (APTR)&IGadget3)
    program2();return;
  if (object == (APTR)&IGadget2)
    fade();return;
  if (object == (APTR)&IGadget1)
    program1();return;
  if (object == (APTR)&IGadget4)
    quit();return;
}
```

## Assembler joys

It is possible to call an assembler function from a C module by declaring the assembler function address as an external reference. Values are returned via register d0, so all the joystick values from the joystick reading routine are put in d0, where the C compiler would expect to find them. The assembler source module `Stix2.a` declares:

```
DEF _playjoy
```

for use in other modules. The C source module `lynx.c` declares:

```
extern long playjoy();
/*for the value returned from stix2.a*/
```

and uses it in the program as:

```
joyvalue = playjoy();
```

The joystick routine uses the data registers. It is advisable if using any address registers other than a0 and a1 to push the registers on to the stack at the beginning of the routine, and pull them off at the end, paying particular attention to a4.

## The link

The assembling and compiling of this month's code is straightforward:

```
asm stix2
lc lynx gads ifffread
```

and linking using `part7.link`:

```
FROM LIB:c.o"lynx.o" gads.o"
"iffread.o" stix2.o"
TO "lynx"
LIB LIB:lc.lib LIB:asmapi.lib
BATCH
```

## The software

The support disk contains a program – `lynx` – that will read in a picture file, `loadpic`. The four screen gadgets are View, which runs the May Code Clinic program, Fade, which fades the colours in and out, Window, which runs the March Code Clinic program, and Exit for when you get bored.

Keys 1, 2, 3, and Esc have the same function



Load screen

as the gadgets. When only a few keys are involved, a simplified key handling routine can be used. The code from the `IntaMessage` gives the internal key code of the key pressed:

```
/*Handle keys for Load screen*/
void HandleKey()
{
  code=code&255; /*Internal key code*/
  if (code==0x01) (program1());code=0;return;
  if (code==0x03) (program2());code=0;return;
  if (code==0x02) (fade());return;
  if (code==0x05) (quit());code=0;return;
}
```

A program can be run from inside another program using the `Execute` command from the Dos library. In this case, the program name is all that is needed. There is no input or output file handle.

```
void program1()
{
  Execute("viewports");
}
```

This will read in and execute the Viewports program from the May 1991 edition of Code Clinic. After execution all the memory will be released, including that of the Viewports program code.

When there are no messages from the window port the joystick is read, returning a value with the appropriate left, right, up, down, and fire flags.

```
joyvalue = playjoy();
if (joyvalue >= 0)
{
  if ((joyvalue & 1)==1) WriteFileHandle("r",1);
  if ((joyvalue & 2)==2) WriteFileHandle("l",1);
  if ((joyvalue & 4)==4) WriteFileHandle("u",1);
  if ((joyvalue & 8)==8) WriteFileHandle("d",1);
  if ((joyvalue & 16)==16) WriteFileHandle("f",1);
}
```

The results are written to the Dos screen using the initial output filehandle. The only value of this code is to show that the joystick routine is working and returning a value.

## Disk goodies

Also on the disk is the fully documented source of the main program (`lynx.a`), the joystick reader (`stix2.a`), the gadget data (`gads.c`) and the IFF picture reader (`iffread.c`). Any code quoted on this page is not stand alone, so I would advise using the support disk rather than trying in anything from this page.

I have also included the make and link files – although they may need altering for other compilers – the object files, the picture data, and finally two executable programs.

COMING SOON... Fonts and the diskfont library.



# SOUNDBLASTER

Boost your computer's sound with an  
Amiga SOUNDBLASTER

Make the most of your Amiga's superb sound capabilities by connecting Soundblaster's high quality stereo amplifier and speakers.

Using the latest microchip technology, the specially designed amplifier can deliver an ear-shattering five watts of music power, with twin controls providing complete control over volume and balance.

ONLY  
£47.95

The fifty watt speakers consist of a woofer, a mid-range and a tweeter for the highest possible sound quality. Thumping bass, crisp trebles: You'll hear them all with incredible clarity.

Amiga Soundblaster comes complete with mains adaptor and full instructions. No alterations to your computer are required - just plug in and switch on to re-discover sound on your Amiga.



# Reader offers

Please use the Order  
Form on Page 143

## AMIGADOS: A Dabhand Guide

Is a comprehensive guide to the Commodore Amiga's Disc Operating System (Version 1.2 and 1.3). It provides a unique perspective on this powerful system in a way which will be welcomed by the beginner and the expert user alike.

Rather than simply reiterating the Amiga manual, this book takes a genuinely different approach to understanding and using the Amiga and contains a wealth of practical hands-on advice, hints and tips.

The many features of this book include:

- Full coverage of Amiga DOS 1.3 functions
- Filing with and without workbench
- The Amiga's hierarchical filing system
- Pathnames and Device names
- The Amiga's multitasking capabilities
- The AmigaDOS screen editor
- AmigaDOS commands
- Batch processing
- Amiga Error code descriptions
- How to create new systems discs
- Use of the RAM discs
- Using AmigaDOS with C

£14.95  
AMIGA COMPUTING  
APPROVED READING



WHY LET YOUR FINANCES BE A WORRY?

## Personal Finance Manager FOR THE AMIGA

Personal Finance Manager provides an easy way of looking after your bank account, building society account, credit cards and so on. Its WORKBENCH interface allows transactions to be entered or altered as easily as filling out a form

Full mouse control of PFM's window environment means a really user friendly program. PFM for the Amiga appears and runs exactly the same as our top selling PFM program for the Atari ST.

Automatic Standing Orders means that regular payments are never forgotten, whilst the graphic display will help you manage your account more effectively. Personal Finance Manager will even attempt to match your statements by automatically identifying transactions that haven't yet been cleared.

- The number of entries is limited only by the size of the memory
- Full Workbench interface
- Account entries are automatically placed in date order
- Selectable date formats
- Automatic standing orders
- Auto balancing against statement
- Graphic analysis including: Balance plot Budget comparison. Spend pie charts
- Windows are moveable and re-sizeable
- Graphics are self-scaling to fit windows
- All windows can be displayed at the same time
- Account print option
- Full multi tasking - allows multiple account access

RRP PRICE  
£29.95  
INC. VAT

OUR PRICE  
£24.95



**MichTron**



## A VIDI SPECIAL OFFER

SAVE  
£28

Thanks to a breakthrough by Rombo Productions in frame-grabbing technology, you can now produce good colour images quickly and cheaply with Vidi-Amiga and the VidiChrome colour software.

- Take snapshots in 16 shades live from video
- Multiple frame store
- Dynamic cut and paste
- Full palette control
- Hardware and software control of brightness and contrast
- Compatible with all video standards

\*Also available - Vidi-RGB Colour Splitter. The splitter is an electronic filter which takes a colour video signal and separates it into the three primary colours, allowing each to be digitised. Replaces the need for a conventional filter set and ideal for use with Vidi-Amiga and VidiChrome Amiga\*.

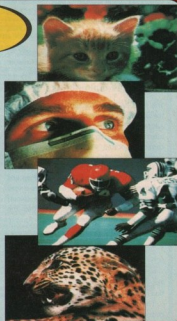
Vidi Colour Splitter  
RRP £79.95\*  
OUR PRICE  
£61.95

SAVE £18

Vidi-Amiga/  
VidiChrome Amiga  
RRP £129.95\*  
OUR PRICE  
£119.95

\* Includes colour  
upgrade worth  
£19.95

"Vidi must be one  
of the most  
exciting  
peripherals you  
can buy for your  
Amiga" - Amiga  
Computing, March  
1990



# Picture this...

**T**hese days, when the best wordprocessors support many different fonts and sizes, multi-column layout and the like, it is the ability to incorporate pictures into a document that really sets DTP apart. And over the last two years the growth in popularity of hand-held scanners – along with price cuts in desktop scanners – has allowed many DTP designers to use “real-world” images such as photographs, signatures and company logos, as well as computer-generated art.

But the use of pictures, like the choice of type, can break a publication as well as make it. In particular, too many designers use a picture because it looks good on its own, without considering the way it fits into the page and the publication.

After all, unless you're producing an art journal or what is euphemistically described as “men's interest” magazines, people pick up your publication to read the words. The pictures serve two functions: they can help bring the words to life, and they give each page an individuality that pure text often lacks.

## The bigger the better

But pictures are emphatically not merely decorations. Carefully-chosen images are apparently worth a thousand words, and you should give them almost as much space. If your eventual output will be on anything less than a laser printer, or if it is likely to be photocopied, small pictures will lose impact along with detail. The shapes of a large image, however, are recognisable even from a dot matrix printer.

Nevertheless, moderation in all things is the thing to remember. A picture which is too big cannot be taken in at a single glance and its sense may be lost – just as an overlong sentence is difficult to follow.

As a rule of thumb, a picture should not be larger than the field of vision at about a foot away from the eyes. To maintain the cohesiveness of a page, make sure that pictures fit in with the grid you're using for type.

Huge pictures can also unbalance a page. If a publication is predominantly text and small images, the sudden appearance of a picture almost filling the page will unnervingly the reader who may then ignore the text beneath, unconsciously assuming that it's a full-page picture. Of course, this doesn't apply on title pages and the like, where text will normally be brief and set large.

The bigger a picture gets, the tighter you should crop it for an exciting effect. Show only the interesting area of the image, and eliminate backgrounds.

This is especially true with photographs of people. For instance, take a picture of an angry politician in a room full of tedious grey-suited types. Printing the whole image means giving over a large part of your page to distracting irrelevancies, but crop right up to the politician on all sides and he'll jump out of the page. This is now

## Barnaby Page with a thousand words or so on the worth of pictures

done very well in the national quality papers, following the lead of *The Independent*.

If the photograph, scan and output device are really of high quality, you can crop right into the person's face, stopping just below the chin and above the hairline. And ears are there to be cut off, as Vincent said.

All this is assuming that your images are scanned photographs. But for many publications, computer-generated art or diagrams are more appropriate – and without access to a scanner, they're all you can use anyway.

The advantage of computer-generated pictures, whether they're clip art or your own creations, is that when properly done they take advantage of a printer's output resolution. Photographic prints are continuous-tone images, and the smooth greys of the original cannot be reproduced perfectly by any printer, however high its resolution: printers don't have grey ink, after all.

Instead, when they're scanned they go through a process of “halftoning”, in which the original greys are approximated by altering the concentration, and sometimes the size, of black dots. You can see this effect by examining a laser-printed photo under a magnifying glass.

How good the halftoning is depends on the scanner and the scanning software, but by definition it is never perfect. Computer-generated art, by contrast, is usually drawn with a laser printer or 24-pin dot matrix in mind, and the artist can avoid effects which won't print satisfactorily.

Remember here that what looks good on the screen won't necessarily work on paper. Popular Amiga techniques such as ray-tracing, as shown in Amiga Computing's Gallery section, can be stunning in screenshots but often use too many subtle gradations to work well on a low-resolution output device.

## The right line

When creating art for publication, it's often better to rely on line drawing – printers can cope with straight lines better than anything else. Work in black and white unless you have access to a colour printer: some colours appear stronger than others onscreen (red appears bolder than yellow, for instance), which can cloud your judgement of the eventual mono result.

And then of course there's clip art – free, public domain, or strictly commercial, much of it advertised in this magazine. The best bet when obtaining clip art is to go for one of the specialist collections – computers, motorbikes, fish, whatever's relevant to you.

The more general disks tend to include too many useless pictures of hearts, birthday cakes

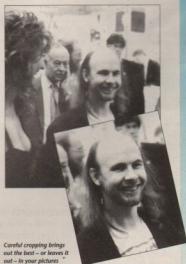
and the like, which many a desktop publisher has been forced to use out of desperation. Avoid that trap – pictures are as much a part of your document as the words, and deserve the same attention.

## Copyright caveat

Everyone knows that words belong to their author, although as is usually the case with m'learned friends, the details are a bit more complex than that. More confusion surrounds the copyright over pictures, but the important thing to remember is that it does exist.

You must not reproduce a picture from the local paper or a book without the copyright-holder's permission – usually this will be the publisher. However, if your publication is non-commercial, a phone call and a promise to acknowledge the source is usually all that's required for permission. Newspapers are happy to provide prints (at a cost) if you want to scan them.

On a brighter legal note, the invasion-of-privacy laws in Britain are much less restrictive than most people believe. You are perfectly free to publish photographs of people without their permission, provided the context isn't libellous.



Careful cropping brings out the best – or leaves it out – in your pictures

Barnaby Page is editor of PrePress magazine and a DTP consultant. He can be reached on CJK as 'prepress'.



# THE AMIGA COMPUTING GUIDE

## HERTFORDSHIRE

### MJC SUPPLIES

STOCKISTS OF A500/A1500 COMPUTERS,  
ACCESSORIES, PERIPHERALS AND SOFTWARE.  
FOR FULL RANGE OF AMIGAS, ALL AT DISCOUNT PRICES

**FOR FULL DETAILS SEE OUR  
ADVERT ON PAGE 95**

OPEN 9.30am TO 5.00pm MONDAY TO SATURDAY, CALLERS WELCOME AT:

**2, The Arches, Icknield Way,  
Letchworth, Herts SG6 1UJ**

**Tel: (0462) 481166 Fax: (0462) 670301**

## WEST YORKSHIRE

YOU'RE ALWAYS  
BETTER OFF  
BUYING  
DIRECT  
FROM

TRILOGIC  
**AMIGA**  
Supermarket



STOCKISTS OF AMIGAS, SOFTWARE,  
HARDWARE, PERIPHERALS ETC

AND NOW THE AMAZING

**★ COMMODORE CDTV ★**

PHONE OR CALL FOR FREE CATALOGUE

ENQUIRIES ► 0274 678062

SALES ► 0274 691115

**UNIT 1, 253 NEW WORKS ROAD,  
BRADFORD, BD12 0QP.**

## STAFFORDSHIRE

### ★ MEDIA DIRECT ★

#### HOW TO ORDER

BY PHONE  
**0782 208228**

BY FAX  
**0782 281506**

BY POST  
COMPUTER SUPPLIES LTD  
UNIT 3, RAILWAY ENT.  
CENTRE, SHELTON NEW  
ROAD, STOKES ON TRENT,  
ST4 7SH

ALL PRICES INCLUDE VAT  
(\$2.95 P&P PER ORDER  
\$9.00 NEXT DAY  
(UK MAINLAND ONLY)



DISTRIBUTORS OF:-



## TYNE & WEAR

NEW NEW NEW... 16 bit Pocket Power Range • Sixteen  
different Titles • That Boxing, Warzone, Plutos and more...  
at an Unbelievable \$2.99 Each!! See press for Details

Thousands of Public Domain Titles including Fred Fish,  
Amos, T-Bag and more at only \$1.25 Each!

80 Capacity Disk Boxes	\$5.50
40 Capacity Disk Boxes	\$4.50
10 3.5" DS/DD Disks	\$4.50
50 3.5" DS/DD Disks	\$21.00
100 3.5" DS/DD Disks	\$35.00
Amiga Discovers	\$2.99
Mouse Mats	\$2.50
Slimpaks	\$1.25

Mail Order  
Hardware Add \$2.95 P&P  
Software Titles 50p P&P

**START START**  
COMPUTER SYSTEMS  
20 HOLMSIDE  
SUNDERLAND SR1 3JE  
091 565 2540

## LONDON

### SK MARKETING

Specialists in Commodore Amiga, Atari ST, and PC hardware and software.

Our **Fulham** branch can provide technical assistance on  
almost any subject. Call Nick on **071 381 6619** for full  
details.

Our sales Hotline is at **Rickmansworth** where current  
software and books can be ordered with a credit card. Call  
Peter on **0923 896969** for more information.

A full range of software can be viewed at both stores  
between the hours of 9.30am-5.00pm, Monday to Saturday.

10 Fulham Broadway, London, SW6 1AA.  
13 Moneyhill Parade, Uxbridge Road, Rickmansworth, Herts, WD3 2BE.

## BRIGHTON



### COMPUTERWISE BRIGHTON

If you live near Brighton you should visit the shop with knowl-  
edgeable and friendly staff.

A large range of software, hardware and peripherals, most at  
discounted prices, and with a comprehensive stock you will  
find what you are looking for... probably.

We are the only dedicated 16 bit computer shop in the south  
unless you know different.



We are open 10am to 5.30 pm Monday to Saturday at  
**44 George Street, Kempington,  
Brighton, East Sussex**  
Phone: Brighton (0273) 674626



**TO ADVERTISE IN THIS SECTION CALL**

# TO LOCAL DEALERS

## SCOTLAND

### PAZAZ

THE ONE STOP AMIGA SHOP IN SCOTLAND

FOR ALL YOUR  
AMIGA  
REQUIREMENTS

14 Douglas St, Dunfermline, Fife,  
Scotland, KY12 7EB



Tel/Fax: 0383 620102



## EAST SUSSEX

79 HIGH ST,  
UCKFIELD  
E. SUSSEX

*Computashop*

18 BROAD ST  
SEAFOORD  
E. SUSSEX  
BN25 1PN

Specialists for Amiga  
Products in the East  
Sussex Area.

**0323 491 352**

## LANCASHIRE

### K & M COMPUTERS

★ ★ THE BEST GAMES ★ ★ THE BEST SERVICE ★ ★

YOUR LOCAL AMIGA SPECIALISTS  
PHONE: **0695 29046/50673**

K & M COMPUTERS (AMCS)  
140 SANDY LANE CENTRE,  
SKELMERSDALE  
LANCASHIRE WN8 8LH



## LEICESTERSHIRE

### THE ORIGINAL MEDIA COMPANY

THE AMIGA SPECIALISTS IN  
HARDWARE & SOFTWARE

SEND OR PHONE FOR



**FREE CATALOGUE**

FULL P.D. LIST AVAILABLE ON REQUEST

Tel: 0530 813591 8 Lines, Fax: 0530 813595  
SEE OUR MAIN AD ON PAGE 61

The Original Media Company Limited  
Media House, 14 Ashby Road, Coalville, Leics LE6 2LA



**SIMON LEES NOW ON 0625 878888**

# GRAND GRAB

## Have you won an A5000 accelerator from SSL?

Last month every copy of *Amiga Computing* featured a unique GRAND GRAB serial number. The panel below left contains 20 randomly selected winning numbers. If any of these match the GRAND GRAB number on your personal copy of *Amiga Computing* issue 38, you are already well on the way to winning a power packed A5000 accelerator from Solid State Leisure.

### How to win

10972, 14675, 19742, 25327, 29435, 31672, 34522, 37551, 39815, 43228, 47674, 50744, 55684, 58392, 61434, 63749, 64025, 66827, 70963, 79491.

- If your GRAND GRAB number from *Amiga Computing* issue 38 (July 1991) matches any of those listed above, carefully complete your claim coupon.
- Photocopies of winning GRAND GRAB number panels will not be accepted.
- The first three fully completed GRAND GRAB claim forms to be drawn from the compiled entries on Thursday August 8, 1991 will each win a Solid State Leisure A5000 accelerator card.
- All remaining winners will collect various runner-up prizes including software, Amiga Computing subscriptions and T-shirts.

### The prize



With an SSL A5000/20 your Amiga 500 can blister along at 20MHz - that's almost six times faster than a standard Amiga.

The A5000 is simple-to-install plug-in power. You will notice the performance difference within minutes of opening up your machine and slotting it in.

Amazingly, some Amiga software will run up to seven times faster than normal.

## Next month's GRAND GRAB

Don't be lost for words with Wordworth!



Wordworth is the latest feature-packed wordprocessing package from Digita International.

The graphical nature of Wordworth makes the production of any document faster and easier. During the editing process, the onscreen WYSIWYG display shows exactly how a printed document will look, including multiple fonts, styles and point sizes, headers and footers, graphics and so on.

### Get hip!

Digita claim you can experience the look and feel of Workbench 2 even with Amigas only equipped with Workbench 1.3. This remarkable feat is achieved through implementation of their innovative Human Interface Protocol, setting new standards in style and elegance for user interfaces.

### How to win

#### Winning couldn't be easier!

Simply keep this copy of *Amiga Computing* in a safe place until next month. In September's issue we will publish another 50 GRAND GRAB winning numbers.

If any of the numbers printed match the one on the front of THIS COPY of *Amiga Computing*, you are a winner!

The first 10 GRAND GRAB winners to have their completed claim forms drawn on the closing date will win a copy of Wordworth from Digita, worth £129.95.

All remaining winners will receive other valuable prizes from *Amiga Computing*.

### GRAND GRAB claim form

Name \_\_\_\_\_

Address \_\_\_\_\_

Daytime telephone \_\_\_\_\_

Attach GRAND GRAB winning number panel here:  
(Photocopies not accepted)

36073

#### Question:

How many times faster than a standard Amiga 500 is one upgraded with the SSL A5000?

- (a) 2 times faster ☐ (b) 6 times faster ☐ (c) 200 times faster ☐

Send this completed coupon to: GRAND GRAB CLAIMS, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP.

All entries must be received before Thursday August 12, 1991.

1. Amiga Computing GRAND GRAB is open to all readers with the exception of European Group employees, agents and advertisers. 2. Each claimant MUST complete the skill question on the GRAND GRAB claim form before their entry becomes valid. 3. The main GRAND GRAB prizes will be awarded to the first three claimants drawn from assembled entries on Thursday August 8, 1991. 4. All remaining claimants will receive unspecified runner-up prizes. 5. Amiga Computing reserves the right to substitute prizes without notice. 6. The editor's decision is final and no personal correspondence can be entered into as a result of a GRAND GRAB claim. 7. All successful claimants will be listed in future issues of *Amiga Computing*.

## Public concern

As a relative newcomer to the world of computing, I have become interested in public domain software. To obtain programs for about a twentieth of the price of commercial ones seems a very good deal, but I wondered whether it was too good to be true, and hence I initially regarded PD with scepticism.

I now know a little more about reasons why programmers might not want to make a profit on their work, but I still have misgivings that this kind of software might be prone to computer viruses.

This leads me on to my main query. There doesn't seem to be a definitive word on viruses, so what little I know about this subject has been pieced together from articles in magazines.

As I understand it, they are programs lurking on a disk inserted by practical jokers as an act of sabotage, and they can do anything from broadcasting silly messages to wiping the main program on the disk clean.

They can also corrupt any disks subsequently used, but you should be OK if you switch off the computer after using the disk containing the virus (shouldn't you?), and the virus cannot harm the computer's operating software (can it?).

So much for that, but I'm still a little unclear about how viruses get there in the first place. I suspect that when one Amiga user swaps his programs with another and this turns into a chain, then sooner or later some unsuspecting person will be landed with a virus.

As far as I know you can't pick up viruses from commercial software or blank disks purchased from a reputable supplier (can you?). At any rate, I don't know any other Amiga users, and I've never had any trouble with viruses.

So why do I think that PD software might be prone to viruses? Let us suppose that some nasty person submits a virus-infected disk to a PD supplier under the guise of donating his program to the nation out of the goodness of his heart.

No matter how reputable the PD supplier is, will he be able to know what has happened? Put another way, can a PD supplier guarantee that his software is virus-free?

It could be that I'm worrying unnecessarily and PD software isn't any more prone to viruses than any other kind. However, before I invest my life's savings in PD software, your advice would be appreciated.

Howard Plizley, Staplehurst, Kent.

What you say about viruses is correct for the most part. The best way to define a modern day virus is as a piece of hidden code which transfers itself into ram and then on to any further disks you insert.

A virus can, as you suggest, be trivial or traumatic. Powering down your Amiga should clear any virus from your system, simply because ram is volatile and is cleared when the computer is totally reset.

There is nowhere for a virus to hide long term inside an Amiga. The obvious risk comes from any floppy disks that have been infected by the virus while it was in ram.

There is a whole range of virus checkers available. These simply sit in ram and scan every disk inserted into your drive for each of the currently known viruses. When a virus is found it can be examined or deleted.

Most reputable PD libraries put all of their disks through a virus checker as part of the duplication process. You shouldn't rely on them doing the safety checks for you though. Every Amiga owner

PRIZE  
LETTER



should have a virus checker. It is you that has to live with the consequences of any infected disks that slip through. All good sources of PD can supply you with the latest in virus killers.

It makes very good sense to keep abreast of the situation and update the virus killer you employ every time a new version is released.

## Back issue blues

Regarding the Klondike game on issue 34's coverdisk, please could you let me know where if possible I can obtain further card games and how I go about obtaining another copy of issue 34's coverdisk, as mine has been kidnapped by another Amiga user.

J Belcher, Swinton

There are loads of captivating card games available in the public domain. Check out the PD section of this issue for some contact details.

Back issues, including coverdisks, are available

## Ezra online

Ezra Surf can be contacted on a whole host of bulletin boards and conferencing systems. If you have anything to say, get it off your chest online!

Amiga Computing now also has its own Fidonet echo which is being carried by BBS systems up and down the country. Any Fido sysops interested in hooking up should contact 01 for Amiga to receive this echo.

Additionally our mail man with the most, Ezra Surf, hangs out on the following services:

Service	Account number
Micronet	999900263
Telecom Gold	74-MIK911
CIX	amigacomputing
Compuserve	70007,4734
The Direct Connection	usd1132
01 For Amiga	Amiga Computing

## Write away!

Got something to say through the pages of Amiga Computing?

Ezra Surf is our mailman, dedicated to sitting in a corner reading your letters and selecting the most interesting for publication.

Ezra's favourite letters now get rewarded with exclusive Amiga Computing designer T-shirts.

Drop him a line at: Ezra Surf's Postbag, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4UP

for a limited period from our subscriptions department, Europress Direct.

See the reader order form on page 161 for their address and telephone number.

## PD price plummet

Regarding your June 1991 issue, in your rather nice article about the world of public domain you stated that Amiga public domain was available for 50p up to £5.

Well I am happy to tell you that I am running a PD company which sells public domain for 40p. The price includes a copy of the requested software, label stating the software on the disk and return postage. All the customer has to send is 40p and the disks.

My library consists of over 200 disks and is growing every day. To join all the person has to do is send a disk and a stamped self-addressed envelope.

I will in return send them a copy of my latest catalogue disk which has a list of all my PD, a few demos, some utilities, a PD game and a classifieds section. They will also receive an order form. Orders are always put back into the post within three days.

I am not offering the best service, what I am offering is value for money. "But what has it got to do with me?", I hear you ask. Well, with prices as low as that I just cannot afford to advertise in the more famous magazines, I have to put up with adverts in >

## But is it art?

While browsing through my elderly computer magazines I suddenly had a brilliant idea.

Many of the game advertisements which I see feature superb artwork of the highest quality, and it seems such a shame that much of it is now long forgotten.

This is where the computer companies come in. They could produce an annual calendar and poster book containing all their best pieces of artwork as nominated by the general public and various computer magazines.

These books and calendars could then be sold for a couple of pounds each and I'm sure that everybody with an interest in art would buy them.

The artists who draw these illustrations must spend hours on them - compiling calendars and poster

books would widen the audience of appreciative viewers and form the definitive collection of computer drawings from only the very best artists.

What do you think of this idea?

S N Hardy, Wales, Sheffield

Many software houses give posters away with games these days. The idea of an annual or calendar seems a good one, but you will probably find that only people interested in computer games would actually appreciate the very distinctive style of art used on most software packaging.

Our sister weekly games magazine *Games-X* provides computer art posters every week.

One last thing, just how many different colours of pen do you have?

appear to possess. If you read this Mr Johan and there has been some misunderstanding, please get in touch with Mr Gower. I will keep everyone in touch with any progress through these pages.

## By Jupiter

Would you think I was being cheeky if I asked you whether our not your headquarters are located on the same industrial park as those of AMOS fame?

If so, would you mind popping over there and asking them (very politely) where they've hidden the files associated with June's AMOS column?

I can't find them, and I am now a very frustrated beginner who, tomorrow shall buy another copy of your magazine in a desperate quest for AMOS satisfaction.

Stephen Mackenzie, Woodsmoor Park, Stockport

It's a fair cop! Our AMOS main man Peter Hickman decided the code too late to be included on the coverside you mention. All was put to rights the month after though.

*Amiga Computing* is located in the idyllic Adlington Park in a building called Europa House. Mandarin Software on the other hand are located across the road in Triton House. Why our respective buildings are named after Jupiter's moons is one of the many unsolved mysteries of our time.

## Short circuit

I have just read the feature in the June edition of *Amiga Computing* by Paul T. Whiteley about what to do if your Amiga's heart stops beating. At first I could not believe that the article was meant to be serious and then, horror of horrors, I realised that it was.

I have been in the electrical and electronic trades since I started work, nearly 40 years now, and a short circuit, whether you prefix it with LIVE or DEAD has always meant one thing - somewhere in the circuit two or more conductors, be they wires, tracks, components leads or any combination of these, have made contact with each other at a place where they shouldn't, allowing a current, normally a high one, to flow.

What Mr Whiteley describes as a dead short circuit is what is usually known as an open circuit, which seems only logical when you come to think of it. If the circuit is broken it must be open.

What I find so disturbing about an article such as this is that it may encourage some Amiga user who is a complete novice at electronics to have a go at repairs that are well beyond his capabilities - and a £300 computer is not the place to experiment.

P J Richards, Kent

I agree totally that people who don't know what they are doing shouldn't meddle inside their machines. Paul was at pains to emphasise that if anyone is unsure, an expert should be consulted.

To quote the article "A live short that you don't know about could kill you... Get a professional!"



► free ad columns. People just don't take any notice though because they think that there's a catch and that they are going to lose their disks, but it is not true!

There are many fly-by-night libraries which go bust and punters never see their money again. Burman's PD has been running now for a year and I have only received one complaint which I instantly solved.

Richard Burman, 41 Pinner Park Gardens, Harrow, Middlesex, HA2 6LQ

We have a regular PD column every month in *Amiga Computing* which provides a platform for PD libraries, large and small. Why not send in your catalogue disk with some of your latest releases?

## Commodore con?

Why do Commodore make such wonderful computers but such pathetic peripherals?

Take for example the A1010 drive. This was originally sold for £150, and was eventually considered to be a bargain offer when reduced to £100.

Why, oh why, would anyone wish to pay £100 for a chunky big box identical to the internal drive when they can buy a sophisticated model for £40 less?

Perhaps their selling strategy is to make the innocent consumer believe that because the price is so high it will be of very high quality.

If this is the case, then I fell into their trap when I purchased the A501 ram expansion for a staggering £85, rather than buying one of those £30 offers.

Another fine example of this is the Commodore mouse, which will be quickly replaced by any serious user if it is not broken first.

Obviously Commodore have the technology to develop better peripherals, so if they had any sense they would start concentrating on more competitive prices to avoid them losing money to the other firms.

Brian Greenhill, Whitecraigs, Glasgow

Commodore disk drives have been notorious right from the days of the 1570 external drive for the C64. I agree with you that Commodore peripherals tend to be on the hefty side both in terms of design and price.

Why do people buy them? Well you can answer that question yourself with your purchase of the A501. People instinctively trust a brand name.

I have to confess that *Amiga Computing* is far from impressed with the quality of Commodore bolt-ons, having waited two months for a monitor for our Amiga 3000, only to find it was faulty before we got it out of the box.

## Workstation wait

I saw an advert for the Amiga Computing WorkStation disk in your magazine last month. It sounded like a really good idea, so I sent off my £3.50 and waited eagerly for two weeks for it to arrive.

You can imagine my horror when nothing came and my cheque hadn't been cashed.

After phoning Europress Direct I found out that there had been a big demand for The WorkStation and they were sending out the disks as fast as you could. Luckily my own copy of your excellent WorkStation arrived just two days later, complete with a very nice manual.

Would it not be better to make sure you have lots and lots of spare copies of something as impressive as The WorkStation before you advertise it? Having said all that, it was worth the wait!

A. Parker, Cork, Ireland

You would not believe the number of orders we received for The WorkStation within a week of the first advert hitting the streets.

Our order processing and dispatch team did duplicate loads of disks ready for the orders to flow in, but we obviously didn't reel off enough of them. It just goes to show that a good idea can go a long way.

I'm glad you think it was worth the little wait. As an aside, we now have enough WorkStation disks to undertake major land fill and reclamation projects, so order with confidence.

## Shareware scam

After reading your excellent feature on viruses in the March edition of *Amiga Computing* I sent off 10 dollars to obtain the program Vscan 4.98c from Arthur Hagen Johan of Norway.

After waiting over a month and receiving nothing I posted a second letter and I have had no reply. I wonder if any more readers have had the same problem with this man. Do all shareware - or whatever you call them - authors treat you this way?

J Gower, Putney, London

Considering most users of shareware programs make no donation whatsoever it is sad to hear that an author is treating you in this way.

All I can say to reassure other readers is that I personally have made shareware donations in the past and received very polite, prompt service from authors with better manners than Mr Johan would

Offers subject  
to availability

**AMIGA**  
COMPUTING

# READER OFFERS

## Back Issues

February 1991	£3.10	9732	<input type="checkbox"/>
March 1991	£3.10	9733	<input type="checkbox"/>
April 1991	£3.10	9734	<input type="checkbox"/>
May 1991	£3.10	9735	<input type="checkbox"/>
June 1991	£3.10	9736	<input type="checkbox"/>
July 1991	£3.10	9737	<input type="checkbox"/>

All these back issues include cover disk.

## Bargain bundle

Six issues of Amiga Computing (Feb-July)	£17.00	9997	<input type="checkbox"/>
Add £3 Europe & £ire/£12 Overseas			<input type="checkbox"/>

## Rombo Vidi - See Page 136

Videochrome plus Colour upgrade	£119.95	9891	<input type="checkbox"/>
RGB Splitter	£61.95	9964	<input type="checkbox"/>

## Spell - See Page 130

Compact/Arch/Elec 3.5	£8.95	3612	<input type="checkbox"/>
BBC 5.25 40T	£8.95	3610	<input type="checkbox"/>
BBC 5.25 80T	£8.95	3611	<input type="checkbox"/>
BBC/Elec Tape	£8.95	3617	<input type="checkbox"/>
Amiga	£8.95	3614	<input type="checkbox"/>
ST	£8.95	3613	<input type="checkbox"/>
PC 3.5in	£8.95	3616	<input type="checkbox"/>
PC 5.25in	£8.95	3615	<input type="checkbox"/>

## Photon Paint 2

Paint in 4096 Colours	£39.95	9945	<input type="checkbox"/>
-----------------------	--------	------	--------------------------

## Personal Stereo System

	£19.95	9993	<input type="checkbox"/>
--	--------	------	--------------------------

## Rolling Ruler

	£6.50	9965	<input type="checkbox"/>
--	-------	------	--------------------------

## Amiga Computing Cover Disks (Misc. selection)

Extra disks (set of 5)	£7.50	9897	<input type="checkbox"/>
Extra disks (set of 20)	£20.00	9898	<input type="checkbox"/>

## Amiga Music

Soundblaster (See Page 136)	£47.95	9959	<input type="checkbox"/>
Quartet	£39.95	9913	<input type="checkbox"/>
Master Sound (See Page 130)	£34.95	9914	<input type="checkbox"/>
Package of all three	£104.95	9960	<input type="checkbox"/>

## Amiga DABhand Guide - See Page 136

A comprehensive guide to the Amiga's disk operating system (version 1.2 and 1.3)	£14.95	9866	<input type="checkbox"/>
--	--------	------	--------------------------

**Send to: Europress Direct, FREEPOST,  
Ellesmere Port, South Wirral L65 3EB**

(No stamp needed if posted in UK)  
Products are normally despatched within 48 hours of receipt  
but delivery of certain items could take up to 28 days

**ORDER at any  
time of the  
day or night**

By phone: 051-357 1275

By Fax: 051-357 2813

Don't forget to give your name,  
address and credit card number

General Enquiries: 051-357 2961

## Mail Order offers

Publishers Choice	£79.99	9867	<input type="checkbox"/>
Home Accounts/Day by Day	£34.90	9851	<input type="checkbox"/>
Pair of Scenery Disks	£31.90	9872	<input type="checkbox"/>
Lotus Expert	£19.95	9946	<input type="checkbox"/>
James Pond	£19.95	9947	<input type="checkbox"/>
Jane Seymour	£19.95	9948	<input type="checkbox"/>

## Workstation - See Page 44

£3.50	9958	<input type="checkbox"/>
-------	------	--------------------------

## Argasm

£39.95	9925	<input type="checkbox"/>
--------	------	--------------------------

## Mavis Beacon Teaches Typing

**OFFER OF THE MONTH!**

RRP £29.95	Our Price £22.95	9953	<input type="checkbox"/>
------------	------------------	------	--------------------------

## Re-Ink Spray - See Page 122

£12.95	9998	<input type="checkbox"/>
--------	------	--------------------------

## Personal Finance Manager - See Page 136

£24.95	9942	<input type="checkbox"/>
--------	------	--------------------------

## Joysticks & Mouse

Comp Pro Glo Green	£14.95	9954	<input type="checkbox"/>
Comp Pro Extra Joystick	£13.95	9955	<input type="checkbox"/>
Gasteiner Mouse	£19.95	9956	<input type="checkbox"/>

## Dust covers

£4.95	9507	<input type="checkbox"/>
-------	------	--------------------------

## Mouse mats

£4.95	9508	<input type="checkbox"/>
-------	------	--------------------------

## Binders

£5.95	9509	<input type="checkbox"/>
-------	------	--------------------------

## Disc boxes

£4.95	9860	<input type="checkbox"/>
-------	------	--------------------------

Addition for postage: Europe & £ire add £3  
Overseas add £5  
Unless otherwise indicated



**TOTAL**

Payment: Please indicate method (✓)

☐ Cheque/Eurocheque made payable to **Europress Direct** Expiry Date:   
☐ Access/Mastercard/Eurocard/Barclaycard/Visa/Connect  
 No.

Name  Signed

Address

Post Code

Daytime telephone number in case of queries

AMC8

# HOW'S THIS FOR A

For UK subscribers who would prefer free games software to the Personal Sound System (see opposite page) we are giving away TWO brilliant Infogrames award-winners which have impressed reviewers worldwide. Normal rrp for the package of these two games is £29.95

## SIM CITY

Take the destiny of the world's greatest cities or the city of your dreams in hand... build factories, houses, airports... fight crime and pollution. Will you prove to be a good Mayor?

Entertainment Program of the Year, Educational Program of the Year, Best Simulation of the Year  
— USA Software Publishers Association

## POPULOUS

Create the world... govern the people... unleash natural disasters on your enemies... change the geography of mighty planets.

Game of the Year, Most Original Game, Best Strategy Game  
— European Computer Leisure Awards



Not one but  
**2**  
free games!

## REAL VALUE FOR MONEY!

Subscribe now, and receive either the Personal Sound System or the two games absolutely FREE! You will receive 12 issues of Amiga Computing at £2.99 each (£35.88) plus your gift worth £29.95 – that's a total value of £65.83 for only £34.95!

## SUBSCRIPTION ORDER FORM (including FREE monthly disk)

Please tick the appropriate box

### 12 months' Subscription (including monthly cover disc)

	New	Renewal
UK	£34.95	£50.00
Europe/Eire	£39.95	£55.00
Rest of World – Airmail	£54.95	£60.00

Subscription orders received before July 16 will commence with the September issue

Payment: please indicate method (✓)

☐ Cheque/Eurocheque made payable to Euromag Publications Ltd  
☐ Access/Mastercard/Eurocard/Barclaycard/Visa/Connect  
 Expiry Date:

### MY CHOICE OF FREE GIFT (UK subscribers ONLY)

Personal Sound System ☐ 8507  
 Sim City/Populous Compilation ☐ 8508

Send to: Euromag Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB (No stamp needed if posted in UK)

Name  Signed

Address

Post Code

Daytime telephone number in case of queries

Order at any  
time of the  
day or night

By phone: 051-357 1275

By fax: 051-357 2813

General queries: 051-357 2961

Don't forget to give your name, address and credit card number

# A SOUND IDEA?

It's a  
great offer from  
**AMIGA**  
COMPUTING

Subscribing now to Amiga Computing brings you not only 12 months of the best in Amiga news, features and special interest coverage.

You also get, **ABSOLUTELY FREE**, the Amiga Computing Personal Sound System – RRP £29.95.

Lose yourself in a new dimension. Experience all the fun and excitement of your favourite games, music packages, etc – without disturbing the rest of the household!

Worth £29.95 – but  
completely **FREE** if  
you subscribe now!

## The Personal Sound System comprises:

- ★ A cleverly designed interface and the latest high-velocity lightweight headphones
- ★ Crystal clear stereo sound reproduction
- ★ Can be used in three different ways: headphones sound only, monitor sound only, sound on both headphones and monitor
- ★ Interface features a tough plastic case with volume control
- ★ You can also use the headphones with your personal stereo or hi-fi system
- ★ Full instructions supplied to help you get the most out of this superb accessory

Make sure you get  
the best in sound  
quality with the  
maximum of privacy  
and convenience –  
by taking advantage  
of this superb offer  
today!

Available to UK subscribers only

# ROCK LOBSTER

The Amiga Computing team  
chill out...



## Who's glory?

In a sudden, unexpected deviation from *Caught in the act* tradition, competition number 39 is totally devoid of any Amiga Computing staff.

Instead we have a snapshot of some handsome footballing fella, plucked from the family album while he was out recording his next hit single. If you have any witty words that set this slice of photographic history off a treat, do send them in.

All entries to: *Caught in the act* 39, Amiga Computing, Europa House, Addington Park, Macclesfield, SK10 4NP.

## Cover story

Just a quick thank you to Henri Buijck for producing last month's Amiga Computing cover. The stunning ray-traced jet and shiny AC logo was produced by Mr Alternative Image himself, using a whole range of advanced 24-bit techniques.

To find out what ray tracing can do for you, just give those really nice Alternative Image people a call on 0533 440041.

## Lemmings!

We can at last announce the lucky winners in our great Lemmings giveaway. You are probably expecting this article to lunge into all the tried and tested compo-globber, you know the sort of thing: "we had an overwhelming response" and the like.

The fact is, being hardened Lemmings fans here in the AC office, we did expect a big response. What we got though was a huge response.

All we wanted was a name and address, nothing more. That didn't stop some entrants spinning us an elaborate web of emotional blackmail.

Take, for example, this disgusting threat from Antony Brewer from Newbury Berks. I think you will agree he is a truly sad character. We could hardly ignore this Lemming death threat and as a result our man Anthony is one of the many winners.

Many thanks to everyone who entered, it's just a pity we don't have

## Bunder banter

We have also done the mail sacks for *Caught in the act* 38. In a sudden bout of compassion, we have decided to let Leslie choose the best caption himself.

Apparently he has lots of prize ideas for the eventual winner of *GTA 38*. Front runner at the moment appears to be a blow torch with flame-thrower attachment.

Who knows, Leslie may even deliver the prize to the lucky winner...



## Horror story

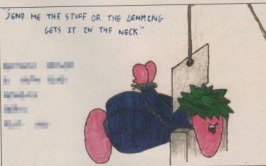
We just can't stand any more virtual reality puns, so it is with a certain degree of relief that we are closing *Caught in the act* 37.

Entries came in thick and fast, though mainly thick it has to be conceded. After much sifting, coffee drinking, and very little deliberation, if the truth be told, the Amiga Computing team have gone for the witty barb below submitted by Colin Sanders from Denton.

A copy of Elvira the game is in the post as you read this, adding a whole new dimension to the term "booby" prize.



Just what I've always wanted... A blow-up Nick Welch



enough Lemmings gear to give everyone some goodies.

The other lucky winners are: V Simmons (Middlesex), E Manning (Southend-on-sea), A K Woolgar (Sussex), M Burbridge (Kent), H

Moore, (Sheffield), B Kitt, (Cornwall), D Litherland (Bolton), R Walker (Dudley), D Griffith (Cheltenham), Peter Mitchmen (Boston), Ben Hampshire (Kent), J Oliver (Cleveland), T Arnesen (Norway).

## Eight out of ten technical editors...



Yes, we know, it's a silly picture. Even more silly than the infamous snapshot of a cat clawing at an Amiga mouse which Amiga Computing was so fond of using in its formative years.

As well as being an opportunity to publish another silly photo, it's a chance for us to clear more room in the AC cupboard by having another Rock Lobster Compo.

To win a prize that will leave you

completely speechless, simply write in and tell us which member of the AC team this moggie belongs to and what it is called.

So you're not left totally clueless, this feline could come from Devon and it loves custard.

Send your entries to: Stevie's Cat, Rock Lobster, Amiga Computing, Europa House, Addington Park, Macclesfield, SK10 4NP.

# We do it in real-time ... and in COLOUR.

**PRICES DOWN!** ColourPic £399 inc. VAT  
SuperPic £499 inc. VAT

Our VIDEO DIGITISERS are REAL-TIME and COLOUR. They GRAB a FRAME as fast as a TV camera can provide it, PLUS – they include a live framebuffer output for connecting to a second picture monitor or even a TV set to simplify focusing and setup.



Step into the real-world of real-time AND colour:

No need for a perfect freeze frame VCR!

No need for a colour splitter!

No need for a colour wheel!

Perfect pictures from a moving colour source at just the touch of a button.

With **SuperPic** and **ColourPic** you can ...

- ★ GRAB a frame from a moving picture in 64,000 vibrant colours.
- ★ SAVE and display pictures in over 32,000 colours.
- ★ ENHANCE your DTP skills with a wide range of built in monochrome tools.
- ★ INTERFACE directly with the AIM image processing software to use its wide range of powerful image processing tools.
- ★ CREATE pictures for use in image data bases.
- ★ CREATE a picture which can be loaded into your favourite art package ... DeLuxe Paint, Photon Paint, Digipaint ...
- ★ PRINT to your colour or monochrome printer.
- ★ SEE your SCULPT images as you have never seen them before! Use **ColourPic** or **SuperPic** as 'the ultimate SCULPT display device'!
- ★ DIGITISE images in HAM, interface and overscan modes.
- ★ MULTI-TASK safely with your other software.

**ColourPic** – a real-time colour video digitiser for the A500, A2000 and A3000.

NEW recommended retail price £399 inc. VAT.

**SuperPic** – a real-time colour video digitiser for the A500 and A2000 including a superb quality genlock for the discerning Amiga user.

NEW recommended retail price £499 inc. VAT.

**ColourPic** and **SuperPic** can be obtained from selected Amiga dealers or direct from JCL. For your free show disk of pictures contact Carolyn on 0892 75791.



**"CABARET"** – Exciting new software for **SuperPic** and **ColourPic**, packed with powerful image processing functions. Just TS direct from JCL.

# JCL

**JCL BUSINESS SYSTEMS LIMITED**  
Knowle Farm Clock House, Wadhurst Road, Frant, East Sussex TN3 9EJ, England.  
Tel: 089275 791 (INT) +44 89275 791. Fax: 089275 440 (INT) +44 89275 440.

NEW

# THE COMPLETE COLOUR SOLUTION

First seen at the 10th  
Computer Show  
Hammersmith  
(20th-24th July 1991)  
Stand No. 101

# £179

Vidi ... No 1 in UK & Europe (Leading the way forward)



Get the most out of your Amiga by adding:

## "The Complete Colour Solution"

The Worlds ultimate creative leisure product for your Amiga. Capture dynamic high resolution images into your Amiga in less than one second.

## And Look No Filters

Images can now be grabbed from either colour video camera, home VCR or in fact any still video source. The traditional method of holding three colour filters in front of your video camera is certainly a thing of the past. Because Vidi splits the RGB colours electronically there are no focussing or movement problems experienced by some of our slower competitors. Lighting is also less of an issue as light is not being shut out by lens filters. Put all this together with an already proven Vidi-Amiga/VidiChrome combination and achieve what is probably the most consistent and accurate high quality 4096 colour images ever seen on the Amiga.

The colour solution is fully compatible with all Amiga's from a standard A500 to the ultimate A3000. No additional RAM is required to get up and running.

You will see from independent review comments that we are undoubtedly their first choice and that was before the complete solution was launched. If you have just purchased your Amiga and are not sure what to buy next, then just read the comments or send for full review and demo disk.



\*Actual unretouched digitised screenshot\*

## Features ...

- Grab mono images from any video source
- Capture colour images from any still video source.
- Digitise up to 16 mono frames on a 1meg Amiga.
- Animate 16 shade images at different speeds.
- Create windows in both mono & colour.
- Cut & Paste areas from one frame to another.
- Hardware and software brightness & contrast control.
- Choice of capture resolutions standard & Dynamic interface.
- Full Palette control.
- Add text or draw within art package.

**Best of both worlds** The best Amiga digitiser has had the one of the most exciting peripherals you can buy for your Amiga.

**DigitView** When I first saw Vidi "in the flesh" as it were, at the CES show last September it looked to be the answer to a frustrated DigitView owner's dreams - in fact to see pictures appearing on screen without the customary two minutes wait seemed almost too good to be true. I have consistently produced more good quality pictures in the short time I have had Vidi than I ever did with DigitView.

**Value** Now under normal circumstances cheap usually means poor quality but this is not the case with Rombi. Why? cos Vidi-Amiga is the best digitiser for under £500 and I've tried them all.

**Service Forward** Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

**Amiga User International** The latest addition to the Rombokit is called Vidi-RGB and brings this already impressive package to the realms of totally amazing. CONCLUSION: Who will find Vidi-Amiga useful? The answer to this is almost anyone with a video recorder or camera and a passing interest in graphics.



**ROMBO**  
Limited

\*\*Full colour demonstration disk available for only £1.95 to cover P&P.\*\*

6 Fairbairn Road, Livingston, EH54 6TS. Tel: 0506-414631 Fax: 0506-414634



Europress Direct  
FREEPOST  
Ellesmere Port  
South Wirral  
L65 3EB

You  
**£19.95**

~~£20.50~~

"Is it real or is it Master Sound?"

— Amiga Computing, May 1990

**Bad spelling to cost  
pupils exam marks**

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

Yet most homes have what could be the ideal means of teaching spelling – the computer.

Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new

software  
package that  
not only

**SPELL!**

**Passing an exam . . .  
applying for a job . . .  
whatever you want to do in life you need to be  
able to SPELL!**

makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like – or take on the computer in a high-speed challenge!

And this one package is ideal for everyone – with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

It includes five different tests, each making use of more than 5,000 words – so much variety that you'll never get bored.

- 5 DIFFERENT TESTS
- OVER 5,000 WORDS
- FOR AGES 5 TO 15

#### FIVE ways to improve your spelling

**In a Flash:** Read the word as it flashes on the screen, then type it in. For practice runs, the word is left on the screen as it is typed.

**Rocket:** Hidden words have to be discovered in this hi-tech version of the old favourite Hangman. If they are guessed correctly the rocket will blast-off. Fail and all that's left is a load of scrap.

**Lunar Buggy:** Type fast for fun. The aim is to key in the word as it's pulled across the screen by the buggy. It has to be completed before the letters drop down a crater.

**All Mixed Up:** Jumbled letters have to be sorted out to find the scrambled word. To help beginners – and anyone else who is stuck – clues can be obtained at the press of a key.

**Conveyor Belt:** Words pass by on the screen and have to be remembered. Then they must be typed in – spell correctly. This is a challenging test of both spelling and memory.

All the programs have several options for extra flexibility – like a timer with on/off option to

In addition to using the 5,000 words provided, parents – or children – can create their own word lists for using with SPELL! This makes the package ideal for practising those hard-to-learn words, or for "Learn these spellings" homework.

**SPELL! only costs £8.95. It is now available on disc and tape for six of the most popular home computers**