

AMIGA

ISSUE 7 / FEB 1990 / £2.95

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FORMAT



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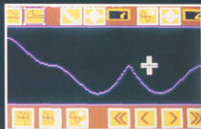




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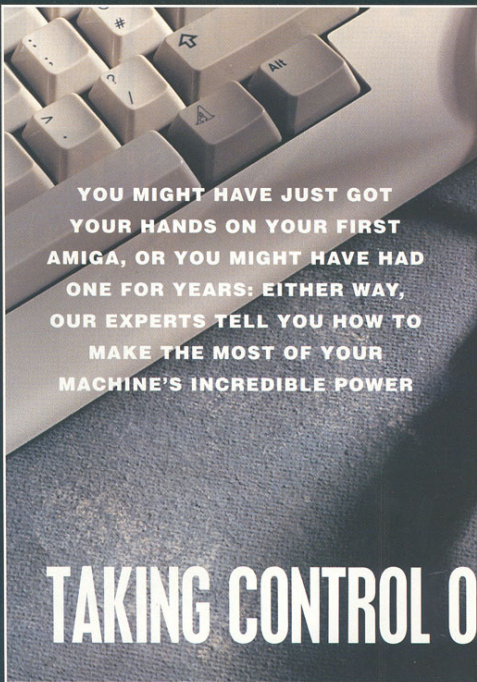
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TAKING CONTROL 0

AMIGA FORMAT ISSUE 7 FEBRUARY 1990

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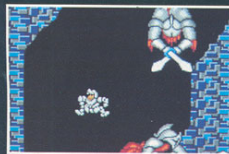
Demo of new sound sampler from Software Horizons.

ARGASM ASSEMBLER

Coder's most vital tool, from the makers of Starglider 2.

MENACE SOURCE CODE

Hardware-hitting code to accompany Dave Jones' series.

**YOUR AMIGA 17**

■ In Screen Play: Ghouls 'n' Ghosts arrives.

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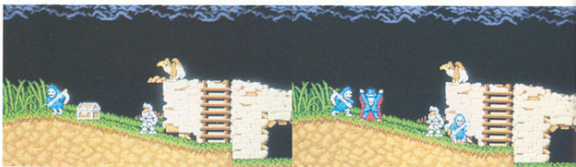
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1st Right: **Aha! A magic chest appears from under the ground.**

2nd Right: **After a few blasts a magician emerges...**

3rd right: **...to cast a spell on poor old Sir Arthur.**

Far right: **Oh dear! Our poor hero has become a defenceless waterfowl.**



In days of old when knights were bold and the nasty demons ran off with pretty garies, there lived a brave knight named Arthur. Three years after he succeeded in rescuing his sweetie, the beautiful princess Hus, the nasty creatures of the Netherworld have risen and made off with her a second time.

Unsurprisingly Arthur is more than a little miffed, so armed with a plentiful supply of throwing lances and a sturdy suit of armour, the knight sallies forth into the ghostly regions to save his love.

The actual gameplay of *Ghouls 'n' Ghosts* is in the same format as its predecessor *Ghosts 'n' Goblins*. Arthur, under your control, runs along leaping across platforms and blasting various spirits. You begin with an infinite supply of sawn-off lances to hurl at attacking nasties, but you can upgrade weapons along the way by picking up pots dropped by skeletons or by opening chests. Occasionally, a magician emerges from these chests and turns you into a bow-tie wearing duck, which is especially useful for dodging the odd particularly annoying flying wotsit thingy.

If you open a chest to find a suit of armour, you will be blessed with a mega-weapon, such as flares (no, not flared armour trousers), lightning or a "wall of death", depending on the weapon you currently have. You begin in

US GOLD £24.99 ■ Joystick

GHOULS 'N'

the graveyard at the edge of the town, as in the first game, but take a different route through the underworld, passing guillotines, swamps, giant skeletons and deserted windmills to name but a few. At the end of each area is a large and fearful guardian creature, which requires quite a number of blasts before it dies. Once it has been despatched to its evil source it leaves a key for access to the next level of the underworld.

If you manage to fight your way through all the levels and reach the heart of the spirits' domain then you can take the Princess back to safety... but for how long this time?

GRAPHICS AND SOUND

It's no good. There's no avoiding the phrase 'arcade quality'. In fact,

it's remarkable how similar the Amiga conversion's graphics are to its arcade counterpart.

The sprites are wonderfully drawn and the animation is as slick as you could hope for, with not a flicker to be seen as they whizz about the atmospheric backgrounds. Every creature has a separate character and there are plenty of them too!

The sound is of an even higher standard than the graphics. The lack of effects is more than made up for by the stunning music. The 'power LED off' trick has been used to get the best quality sound possible from the machine and has enabled sound wizard Tim Follin to produce the most stunning effects.

The tunes range from jolly cartoon ditties to hypnotic Tangerine

Dream-style pieces. Let's hope we see (and hear) more from these guys soon.

LASTING INTEREST

Arcade conversions are often good fun for a few goes, but the appeal fades after you've spent hours playing and still get absolutely nowhere. Once you start playing *Ghouls 'n' Ghosts*, however, it's hard to drag yourself away. Sure the going is hard, and it will take you a good while to get through, but instead of frustration at not getting off the level, determination sets in, pushing you to beat just one monster more.

Every level has a totally different atmosphere, thanks to the change in graphics and music in each, so that you just keep playing to see the next level and hear



Above: **Could be worse - it could be raining!**

Right: **Not your usual pet tortoise named Flash, here. Oh, no.**

Below: **Ha! Nay clobber on and still able to kill the big guard.**

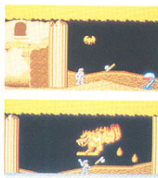


Top: **They don't build bridges like they used to. The bottom falls out of Arthur's world and Arthur falls into a pit.**

Above: **"You wouldn't believe it! Size of helicopters they were!"**



GHOSTS



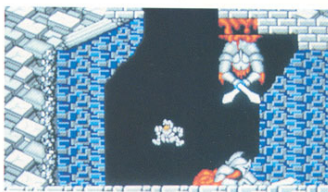
Top: Things begin to heat up towards the end of Level Two.
 Above: Er... nice doggie! Sit! Come on, hellhound, sit!
 Below: Death follows Arthur up some spooky steps. Altogether now... "Dem bones, dem bones..."



Top: On the lift. "Second floor - lingerie, cosmetics and nasty sword-wielding demons".
 Above left: Didn't your mother ever tell you it's rude to stick your tongue out? Apparently not.
 Above right: Eye, eye! What's all this then? Well, whatever it is it's not at all friendly. Run away! Run away!

JUDGEMENT

These days it's a good idea to reserve judgement on an arcade conversion until you've played it for yourself. Just going on a big name isn't really enough. Well, I'm happy to say that *Ghouls 'n' Ghosts* is a first-rate conversion



Top: On the lift. "Second floor - lingerie, cosmetics and nasty sword-wielding demons".
 Above left: Didn't your mother ever tell you it's rude to stick your tongue out? Apparently not.
 Above right: Eye, eye! What's all this then? Well, whatever it is it's not at all friendly. Run away! Run away!

worthy of any arcade gamer's attention. The look and sound could be straight from a coin-op machine: some of the most impressive seen on a licensed conversion for a long time.

The pleasure of *Ghouls 'n' Ghosts* transcends the audio-visual delights on offer, though. The playability of the game will keep the most adept players wagging their joysticks for hours. It's still not that often you see licences of this quality on a home machine, so

Ghouls 'n' Ghosts is certain to please fans of the original: but whether you've played the coin-op or not, you should give it a try. You shouldn't be disappointed.

Maff Evans

GRAPHICS	8
SOUND	9
INTELLECT	2
ADDICTION	8
OVERALL	91%

THE RATINGS EXPLAINED

GRAPHICS

Good graphics are an important part of any game: if the power is there, it should be used to the full. Both static and moving graphics come under scrutiny in this rating, but remember, graphic wonders alone do not a great game make...

SOUND

With stereo capabilities the last thing you want to hear are Spectrumesque beeps, right? Title tunes and effects all add atmosphere to a game and good sound can greatly increase your enjoyment.

INTELLECT

How much real thought do you have to put in to play the game? Just because a game's mindless doesn't necessarily mean it's bad, but a game with a high Intellect rating says immediately you'll need to think to gain maximum enjoyment.

ADDICTION

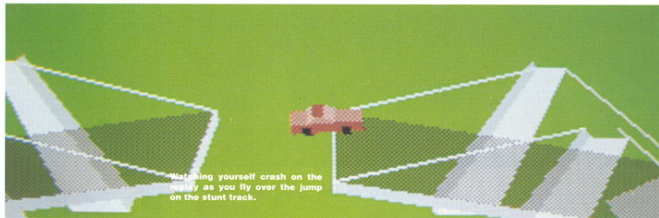
How easy is a game to pick up and play? How much sheer fun will you get from it? Will you keep coming back? Important questions, all answered by a look at the Addiction rating.

OVERALL

A percentage mark that takes into account all the ratings, plus extras like lasting interest, packaging, documentation...

THE TEAM

Andy Smith, was with ACE right from Issue One. He wouldn't know an op-code from a hole in the ground, but that's small comfort to the hundreds of games he has mastered. He loves any type of game, be it a shoot-em-up, strategy game, arcade adventure... or anything else! Bob Wade started reviewing with *Personal Computer Games* and has worked for Zzap!64, Amstrad Action and ACE. There's no-one in the business with a better idea of what makes a great game... Maff Evans has recently joined us here on *Amiga Format*, but his background on Zzap! 64 Amiga has given him the kind of experience that makes him one of the most tenacious games experts around. ■



Watching yourself crash on the way as you fly over the jump on the stunt track.

During the Amusement Trades Exhibition International at London's Olympia in the Spring of '89, one coin-op game was making its world premiere on the Atari stand. It was billed as "The most realistic simulator ever to hit the arcades" and was stealing the show. Now the Amiga version of *Hard Drivin'* has arrived.

You're in control of a popular sports car, driving as fast as possible around two tracks: speed and stunt. Before starting, you must choose the transmission from automatic or manual (beginners should select automatic). Manual requires the player to shift gear himself either using a joystick as a gear lever or by hitting the right keys on the keyboard.

Then you start driving just before a fork that allows you to choose which track you'd like to take. Assuming you take the speed track, you then have a set amount of time to make it to the checkpoint which is 3/4 of the way round the track and so gain a few extra seconds to make it to the finish (where you get more time to try to do the same again).

On the stunt track the same has to be done, but things are much trickier because there is a bridge to jump, a loop-the-loop to complete and some high banking to negotiate. Speed and steering skills are essential here as it's all too easy to go flying over a jump and crash through excessive speed, or to lose control of the car as you round the bend just before the loop-the-loop and enter

HARD DRIVIN'

DOMARK £19.99 ■ Mouse, Joystick and/or Keyboard



Hammering around the speed track. On-coming traffic is a real hazard here as you go sliding round the bends.

the thing at the wrong angle. Getting the hang of controlling the car and cornering at 100+ mph is the first priority, because without it you won't stand a chance of completing either track in under two minutes and proceeding to the Championship Lap which is raced on the stunt track. Incidentally, win the Champ' Lap and all successive players are required to race against your 'phantom' car.

GRAPHICS AND SOUND

When you're driving, everything is viewed from the driver's seat and

it's all solid 3D. There's a nice impression of speed when you're driving and though the other road users look a little basic they serve their purpose (getting in the way, it seems). The instant replay is a nice feature when you crash, giving you a bird's eye view of the accident, although the masking of sprites over backgrounds is decidedly dodgy.

Hard Drivin' looks as much like its coin-op parent as you could reasonably expect. The sound effects, however, are dire. Domark assure us they're taken from the

arcade machine, but they're still awful, with weak engine and skidding sounds. Nice intro music.

LASTING INTEREST

The first few attempts will have you thinking 'Corks, this is tough', but it doesn't take long to get to grips with handling the car. After that it doesn't take long to master the tracks and you'll be qualifying for the Champ' Lap almost every time. Although it is, arguably, more of a simulation than a racing game, it's too easy to master, which doesn't do much for the lasting interest.

JUDGEMENT

Despite the bugs (for example, crash on one track and the game will occasionally restart you on the other), it's fun for a while. But take away the best features of the coin-op - continuous feedback through the steering wheel and the manual gear-shifting using a clutch - and you're left with a driving 'simulation' that is really nothing very special at all.

It's a great conversion and all credit to Domark for that, but this is a classic example of a game that may be great in the arcades, but may not necessarily be great on a computer. **Andy Smith**

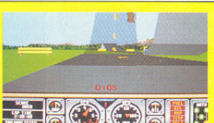
GRAPHICS	8
SOUND	4
INTELLECT	3
ADDICTION	6
OVERALL	50%



Reach the checkpoint on the speed lap and you gain a few more valuable seconds in which to make it to the finish line.



Approaching the loop-the-loop on the stunt track - if that lorry can make it round the upside-down bit, surely you can too?



Erms, no: you didn't. Here you're having another go and this time that car half-way round could pose some problems!



Above: **Catching up with the criminal on the first stage. Bash into him and the damage meter (left of screen) rises until it reaches the top, at which point the criminal is forced to stop. Then it's time to arrest him.**

Believe it or not, one of the most dangerous places to apprehend a suspect in America is around their car. American policemen refer to it as the Kill Zone, because suspects tend to get very itchy trigger fingers just as the police move in to make the arrest.

Fortunately, in Chase HQ, the conversion of the Taito coin-op, no chances are taken. You're head of the Los Angeles Special Criminal Investigation department and that means the perps you pursue have to be approached with brute force.

A normal day's work involves driving around in your two-gear turbo charged Porsche 928 waiting for the inevitable call from Nancy at Chase HQ outlining the next mission. Then it's a case of foot to the floor and tear along the freeway until the suspect is sighted. Once visual contact is made, the only way to treat these crims is to bash into their car often enough to force them to pull

CHASE HQ

OCEAN £24.99 ■ Joystick

over, then make the arrest. There are five stages to the game, each one chasing a different criminal, and for each stage you have to sight the crim before the time limit runs out (you'll be in no doubt when you've spotted them because a large arrow with the legend 'Criminals Here' appears).

Manage it and your time is increased to allow you to get enough bumps on the car to force it to stop. Once the first hit has been made on the car, a damage meter appears on the left of the screen indicating how many more hits it needs to stop it.

There's more to it than that, though. For a start there are the other road users to avoid as well as roadside obstacles. Colliding with anything causes a loss of

speed and consequently a loss of time, so try not to do it eh? Then there are the route choices: a large arrow will appear at a fork in the road and tell you which way to go (often they're shortcuts that will take you across scrubland). Miss the junction and you'll have to use up the three turbo boosts available for each stage if you're to stand any chance of catching up with the felon. Are you ready Mr Driver?

GRAPHICS AND SOUND

There's a good impression of speed (though not as good as *Stunt Car Racer*) and the backgrounds and roadside buildings and so on are all well drawn. There are some nice graphic touches, like the scrubland and tunnel scenes, and though the animation

is a little jerky it suffices. The sound effects are great: screeching tyres, the occasional burst of speech and the siren, and the in-game music is all right too (though you can turn it off if it's all a bit too coin-op for you).

LASTING INTEREST

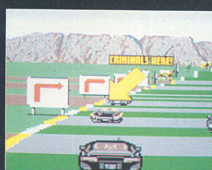
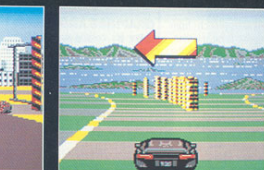
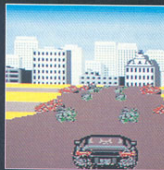
With only two 'Continue' options things are not easy. Getting to that fifth stage will take some doing, so it'll keep you going for a while. There's a high addiction level, so you're bound to keep trying.

JUDGEMENT

A nice twist on the average driving game, and fun to play. It's very much like its coin-op parent and so suffers a little for not having enough variation, but it's well converted and if you fancy a new driving game or are a fan of the coin-op, you won't be disappointed.

Andy Smith

GRAPHICS	8
SOUND	8
INTELLECT	2
ADDITION	8
OVERALL	82%



Far Left: Powering through the tunnel on Stage One and time's running short!

Left: Nancy gives you details of the next mission.

Far Left Bottom: Back on Stage One and it's cross country time as you take the short-cut.

Bottom Left: You're left in no doubt as to which way you're supposed to go!

Bottom: Stage Two and another criminal up ahead.

IRON LORD

UBISOFT £24.99 ■ Joystick and Mouse

After fighting all manner of heathens in the Holy Land for the last five years, the last thing a knight wants is to come home and find his father, the king, has been overthrown by his wicked uncle and fear and oppression rule the land.

Iron Lord from Ubisoft, which has taken literally years to complete, puts the player in just that situation. Your wicked uncle has gathered an army of hideous monsters and is reported to be about to mount an offensive against the normally peaceful province you call home. Your only hope is to muster your own army then square up to unc and restore peace.

Like a typical Cinemaware game, *Iron Lord* is a type of graphic adventure interspersed with arcade games. The adventure side of things has you riding your horse from one location to another, towns to castles to big

houses, stopping off at the place and then entering various buildings and interacting with the people encountered. During this phase of the game the screen is divided into three sections, the left side of the shows a picture of the town you're in, while the top right gives you an aerial view of the town and your character is represented by a small animated person viewed from above which you move around and into buildings (well, stand outside and press fire and you enter). Below this window, pieces of text appear giving you info on what's going on.

Most of this part of the game involves listening to the characters you meet and doing small jobs for them which will convince them that you're a jolly sound chap and that they really should do their utmost to help you raise an army which you can then lead into battle.

The main game area. This small picture pops up every time you move from one location to another.



In one of the towns. The top right of the screen shows your actual position within the town, with text messages underneath.



The archery contest. Adjust the angle, the elevation and the strength of the shot before letting go and...



...seeing just how well you fared (increase the elevation to 27, the angle to 19 and the strength to 25 and a bulls-eye is a possibility).



GALAXY FORCE II

ACTIVISION £24.99 ■ Joystick and Keyboard

In a distant Galaxy, the villainous Forth Empire has invaded the five planets of the once-beautiful Junos system and generally made a mess of the place. Junos itself has been reduced to ashes and is now a construction site for a huge battle fortress, from which the Empire intends to dominate the Galaxy.

Faced with impending doom, the rest of the Galaxy's inhabitants call upon the Space Federation to do something about it. The result is *Galaxy Force*, a one-man attack craft of disturbing potency, with a certain person in the driving seat.

Flying over the surface of each planet, you must penetrate the Forthian defences and destroy each of five outpost fortresses. Only once these have been wiped out can you take on the giant enemy fortress and rid the Galaxy of the evil-doers once and for all.

The *Galaxy Force* ship fires lasers which hit anything directly in front of it, and seeker missiles which automatically lock on to enemy targets and home in.

Enemy ships approach from the front and sides firing missiles, and danger is also present in the

shape of natural obstacles like asteroids, volcanoes, and huge streams of fireballs.

Survive the airborne defences and you enter the planet's fortress where you fly along a twisting corridor, avoiding the walls and blasting the gun emplacements on floor and ceiling. Reach the end of the tunnel in one piece, and the fortress blows up sending you onto the next level.

The ship's energy level is shown by a countdown timer which constantly ticks away during each mission, and is accelerated by contact with enemy ships, missiles or tunnel walls, once the protecting shields have been depleted. Once the counter reaches zero, your single ship explodes and the game ends.

GRAPHICS AND SOUND
Unlike it's co-op parent, *Galaxy Force II* is a little sparse on the

visual side, with some rolling rasters and small moving graphics attempting to emulate several Megabytes of expandable sprites on the coin-op. The poor frame update and general scarcity of graphics provides little impression of forward movement, and there's no real atmosphere.

The tunnel sequence is more effective: though somewhat lacking in detail, it succeeds in providing a convincing environment of twisty tunnels.

A reasonable rendition of the unusual coin-op soundtrack clanks away during play, although the explosion spot effects are weak. By contrast, a nice snippet of sampled speech warns of upcoming bends in the fortress interior, but is only heard when no effects are playing. This is somewhat annoying since it's useful to have some indication of how to approach the next turning.



Left: Bombing and blasting your way through space. Right: Penetrating the level's fortress - don't go too fast, those walls are very, very solid!



Below: Interacting with one of the game's characters.



Above: The wizard can provide you with some useful advice.

What'll also convince the populace that you're a worthy knight is doing well in the arcade games. For example, winning the archery contest or arm wrestling the local champion in the pub will do your reputation a world of good.

When you finally get the army together, you can then take control of them and organise them in battle (fortunately there's a game save option, so it's well worth saving it once you've got your army together). Come out the victor and you then have to face the final challenge in an evil labyrinth - up!

GRAPHICS AND SOUND

The pictures are all well drawn and the small animated window works fine. Some very nice touches include the horse galloping across the screen whenever you move from location to location. Well presented graphically and the sound effects complement it. Very nice.

LASTING INTEREST

Once all five scenes have been played a few times, any urge to continue rapidly fades. The ability to select a starting level only serves to dampen the enthusiasm even more: there are no real surprises in store, and presuming the final sixth mission to merely be a longer and more difficult version of the first five, there really isn't much to look forward to.

JUDGEMENT

This is another case of 'keep moving, blast like crazy and hope you survive'. You don't need to worry about strategic positioning of the ship, since your homing missiles know what's going on better than you do, and the rather chaotic graphics means that it's difficult to follow the action anyway.

Negotiating fortress tunnels is the more entertaining of the two sections, but the ship's sluggish

LASTING INTEREST

The arcade sub-games are no push over, so it'll take a while to master them. The overall game task is also large and becomes more convoluted the further you get into the game. This will keep you going for some little while.

JUDGEMENT

The arcade bits are tough and add variety while the main quest in the game is well thought out and entertaining. It does tend to get a little repetitive due to the smallness of the game area, but overall it's not half bad and can get quite involving. *Andy Smith*

GRAPHICS	9
SOUND	4
INTELLECT	5
ADDICTION	7
OVERALL	77%

response means that it's too tricky to be taken at speed, and therefore too slow to get the adrenalin flowing. It's also necessary to regulate your speed so that you don't smash straight into tunnel walls, but can still reach the end of the level before your energy runs out. So it's fiddly to have the speed control located on the keyboard.

Galaxy Force is an ambitious project, but in the light of Activision's success with the equally impressive *Power Drift*, it really looks like a half-hearted conversion attempt. Short on playability, *Galaxy Force* has little to recommend it. *Steve Jarratt*

GRAPHICS	4
SOUND	5
INTELLECT	5
ADDICTION	4
OVERALL	47%

Another level and more blast action. Several enemies are locked in your sights, so let 'em have it!



THE HOUND OF SHADOW

The Hound of Shadow is set in London in the 1920's and is rich in the atmosphere of the era. It features 'Timeline' a new role-playing system.

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"The game's storyline is well-researched and absolutely oozes atmosphere." ST Action

ELECTRONIC ARTS

X-OUT

RAINBOW ARTS £24.99

■ Joystick

The more things change, the more they stay the same. That's certainly true of computer games. Just as software houses are getting to grips with the power of the Amiga and realise that game concepts unthinkable on smaller machines are possible, out comes a deluge of shoot-em-ups. And why not? Done well, they can be tremendously playable, addictive and enjoyable.

Up there with the best of them have to be Rainbow Arts whose *Denaris*, despite the legal wrangles, is still one of the best shoot-em-ups about. Now comes *X-Out*. Will it steal the crown?

To start with, the game gives the player lots more choices. Right at the start of the game the player enters a shop and is given 12,000 credits to spend as he wishes. This includes purchasing extra ships with which to fight on once the first ship has been destroyed. There are four types of ship available, ranging from the smallest and cheapest which can carry three weapons at once, to the

largest and most expensive which can carry up to 12 weapons at once. Of course, the weapons the ships carry all cost money, so there's no points having a ship with the ability to carry maximum



The first guardian. The head (bottom left) detaches itself and roams around the screen.

weapons if that means you only leave yourself enough credits for one measly weapon.

There's a wide selection of firepower available from the shop including satellites that circle the ship firing when you do. There's even a choice of circling patterns available when you decide which satellite to buy. Then there are three way firing pods, smart bombs and flame throwers all of which must be considered.

Whichever you choose you're going to find the going tough in this left-to-right horizontal blaster which starts underwater and takes you through crystal structures and volcanic scenery. There are flying (or should that be swimming?) nasties as well as a plethora of ground-based gun turrets and the like that all need destroying.

You must also avoid the jutting out pieces of scenery if you're hoping to make your way past the mid- and end-of-level guardians and back into the shop to spend the credits you've collected along the way and get stuck into the next of the eight levels.

GRAPHICS AND SOUND

The tunes playing throughout are the sort of jolly sounds you'd expect to hear in this type of game and the various explosions and other effects are par for the course too. The graphics are good and everything is smoothly animated although the screen does slow down occasionally when there are lots of sprites on screen.

The backgrounds vary from very nice to a bit dull, but there's usually enough happening to take your mind off the graphics.

LASTING INTEREST

It's a toughie, so it'll take you ages to complete: and even if you do manage to finish it, it still has enough variety to come back to if you fancy a blast at any time.

JUDGEMENT

Denaris still rules. *X-Out* is very competent and a good example of the genre, but what new features it has don't lift it head and shoulders above a dozen or so other quality shoot-em-ups. If, however, you really need a new (and different) challenge, then it's well worth checking out. **Andy Smith**

GRAPHICS	8
SOUND	6
INTELLECT	3
ADDITION	7
OVERALL	78%



Spend your credits in the shop before setting out. Should you go for a couple of not-so-hot ships, or one porky hard ship? The second and third pictures here show your ship moving through other levels: note the satellites and other firepower that can be bought at the end of each level (assuming you make it that far, of course)

BATTLE SQUADRON

Don't crises come up at just the wrong times? Just as you are enjoying a well-earned rest from defending Earth against alien oppression, an urgent message is sent from Galax Lunar HQ cancelling all leave. It seems that Earth's saviours against the Barrax Empire didn't make it home after their mission.

After commanders Mayers and Bergin had devastated the Barrax troops on Urania, the enemy sent an attack cruiser to kidnap and return them to Terrania where they are even now held hostage. Rather than bend before the aggressors' demands, Galax Lunar HQ has decided to launch a daring rescue mission. It has been decided that it would be more beneficial to send a couple of small attack fighters to sneak behind the alien defences and rescue the heroes, rather than sending a huge battle fleet, which stands the risk of alerting the Barrax troops.

You play the Squadron Commander chosen to head the rescue mission in this follow-up to the frantic *Hybris*. The basic style of the game is similar to its predecessor, being a vertically-scrolling shoot-em-up with additional weapons, but instead of allowing you simply to zoom up the screen blasting everything in sight until you get to the end, the game presents a scrolling planet surface section with a series of craters leading to various underground caverns. The enemy craft from all these sections have to be taken on before the captured commanders can be freed.

You start off with the basic split 'em laser weapons and a limited

ELECTRONIC ZOO £24.99 ■ Joystick, Mouse or Keyboard



Barrax hordes attack as a fighter enters a subterranean section.

supply of devastating Nova Smart Bombs. These weapons can be replenished and improved as you go on by shooting carrier craft to reveal a coloured weapon pod, the weapon awarded depending on the colour of the pod.

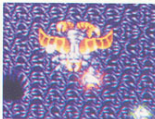
GRAPHICS AND SOUND

One of the most impressive things



It's easy blasting ground targets (Above) compared to the underground creatures (Right).

about *Battle Squadron* is its superb appearance. The graphics are so well designed and smoothly animated that you could easily think that you are looking at a coin-op. The sprites and backgrounds have a strong combat atmosphere, with metallic tanks and ships moving around futuristic industrial landscapes on the surface and all manner of weird creatures underground. Sound is of an equally high standard, some parts



of the tunes and the odd effect sounding very Japanese and extremely powerful too.

LASTING INTEREST

The action is very frantic and compulsive but, as is the way of many shoot-em-ups, once you've managed to smash your way through the alien defences once it's likely you won't return for a repeat attack. This is probably the reason for the number of scrolling blasts on the market and their success. Still, the going is tough, and it's doubtful that you'll complete it in that much of a hurry, so it should manage to keep its hold on your trigger finger for a while at least.

JUDGEMENT

The genre of vertically-scrolling shoot-em-ups is like formalised pop music: it has to exist, because that's what the majority of young gamers appear to see one that's still quite nice to see one that's as expertly done as *Battle Squadron*. It looks and sounds attractive, the gameplay is frantic, but when all is said and done there isn't a great deal of depth to the game. Still, this shouldn't put off blast fans, since this is designed specifically for them, and does the job beautifully. *Battle Squadron* is an excellent example of how to write a shoot-em-up. **Maff Evans**

GRAPHICS	9
SOUND	8
INTELLECT	3
ADDICTION	7
OVERALL	82%



Feeble cannons won't get you very far, so find yourself a weapons carrier...



...and blast the living daylight out it to collect a weapons pod.



Now you've got porkey he-man weapons to attack the enemy.

Zooming down to regimental level. Select the regiment, move the silhouette and then issue the order.



pause
save



blue army
160 men
2nd cavalry
25 men
turn
walk
trot
gallop
charge
reform
scout
remove
corpses
quit

Simulating mediaeval warfare is this one or two player wargame from new boys ARC. Two feuding princes on a small island have decided to do away with each other, so they've both amassed an army (ranging from 45 to 514 men, decided by each player at the start of the game) made up of cavalry and foot soldiers and decided to go after each other. The objective is simple: kill the other player's prince before he kills yours.

Once the size of the armies has been decided and the particular island picked from the eight possible, the armies are plonked down and battle begins. There are three levels of visibility - whether you can see the opposing army - from totally visible even though it's on the other side of the island, to only visible when your troops are on screen as well. There are three zoom-in options too: the first shows your army represented by the prince's banner, the second shows the army represented by regimental commanders, and the third takes it right down to company commander level, showing each soldier.



The screen displays your army's initial position on the map.

ARC £24.99 ■ Mouse

PRINCE

In magnified mode all the player gets to see is a small area of the map with his troops on, through a small window on the left of the screen. Issuing orders also depends on the level of magnification: regimental orders at level two and company at level three. The orders available vary for the type of troop, but generally include walk, charge and withdraw.

To issue an order, simply select the company or regimental commander, choose the order from the list at the side and then move the silhouetted company or regiment to another part of the small window. The troops then follow the orders (as best they can) and, since everything happens in real time, you can select another commander or issue more orders.

When the two armies meet battle occurs automatically and usually the fight continues until one prince has been killed. At this point no more orders can be issued by either side, but both sides will continue with their last orders until either they're fulfilled or the other prince is killed, and

the battle is called a draw. Then it's back to the start-up screen and time to fight again.

GRAPHICS AND SOUND

The action window has a distinctly Populous-like feel about it. At the most magnified level, the ground and troop detail is great and the impression of a real undulating landscape is strong. It's all very colourful and well animated, though things can get very confused if you don't select the 'remove corpses' option. For a wargame it's a looker. The intro music is also excellent and the in-game effects are very good if a little repetitive.

LASTING INTEREST

Playing solo, the game soon runs out of steam unless you pep it up and 'limit set' yourself by giving your opponent loads more troops. Playing against a human opponent is much more of a challenge, especially as you can data-link two machines (even Amiga-ST) and play a remote opponent. The lack of options and variety, though, will

tend to take the edge off of the game sooner than a more involved game would have.

JUDGEMENT

Despite the great presentation there are a few basic parts to the gameplay that let it down. The moving of troops is very annoying as it can be very fiddly to get a particular regiment or company into the place you want: it's all too easy to make a mistake and send them off to the wrong place, only to have to go and do it all again. Frustrating, because everything happens in real time.

It's also annoying that the troops give little indication of when



More order issuing in process, this time at company level.

they've completed an order and are ready for the next. The zoom-in feature and the small play window are nice ideas that just don't quite come off. Billed as a game that's "ideal for arcaders who want to experience the wargame phenomenon" it falls between the two being far too limited in both areas.

Andy Smith

GRAPHICS	7
SOUND	7
INTELLECT	5
ADDITION	5
OVERALL	54%

Cinemaware are a unique bunch of American programmers. Since 1987 they've been writing Amiga games to a brief of capturing the 'feel' of a film on a computer. In the past that's usually meant excellent graphics and atmospheric soundtracks, that have, sadly, been offset by a lack of gameplay and terribly frustrating amounts of disk swapping.

Recently though, Cinemaware seem to be nearing their goal - *Rocket Ranger* not only looked great but had some good gameplay - so have they finally got there with *ICFTD*? Well, things don't get off to a good start. Unless you



An interesting situation arises. What you decide to do now will alter the whole way the game unfolds. Jackie Monroe could well prove to be more trouble than you bargained for, so tread carefully!



have a Meg of memory at your disposal then don't even bother thinking about it. And it's also supplied on three disks, so unless you're also blessed with a second drive you'll still have to endure frustrating amounts of disk swapping.

IT CAME FROM THE DESERT

MIRRORSOFT £29.99

Joystick

The theme of the game is a tribute to the awful-but-great 'big bug' B-movies of the Fifties cinema: things like *Them!*, *Tarantula* and *Black Scorpion*. You play the part of an American geologist who's working in the town of Lizard Breath, in the middle of an American desert, for the last month or so since a meteorite fell on the outskirts of the town.

Being an intelligent chap, (and because you've read the game manual) you realise the meteorite has caused a colony of ants to mutate to gigantic proportions and you also realise that in about 15 days time they'll probably wander into town and have a party, thus ending Lizard Breath as we know it. Unless you can persuade the mayor to call out the National Guard who can then use tanks and jets to go blast the queen ant and destroy her nest.

Soon after starting, you'll realise the game is a cross between a graphic adventure and an arcade adventure: you spend most of the time in adventure mode, interacting with the characters in the game and trying to find clues that will pinpoint the whereabouts of the nest, and gather evidence to show to the mayor.

Interacting with characters involves selecting responses from a list when certain situations arise, for example: there's a knock on the door, which do you choose - shout "Who's there?", ignore it, open the door or leave by the back door? Which you choose affects the way the whole game goes from there.

The arcade games include things like knife fights, flying an aeroplane and putting out fires, and though none of them are tough they add variety to the game. It's the outcome of these arcade games that determines whether you're injured and thus have to spend valuable time in hospital recuperating, or get closer to your goal (time really is tight - a minute game time is roughly equal to a second of real time - so there's even a *Gauntlet*-ish escape-from-hospital sub-game!) Will the gi-ants destroy Lizard Breath? Well, you're in the director's chair.

GRAPHICS AND SOUND

Every location is well drawn and all the arcade games are well animated and excellent looking. The sound is also good, though the tunes do tend to get a little repeti-

tive. It really is almost like being at the movies on a Saturday night.

LASTING INTEREST

Winning the game is going to take a while, but once you have it's doubtful you'll play again. It's not a game that will keep you satisfied for months.

JUDGEMENT

This is the closest Cinemaware have come to producing their interactive movie. The whole feel and atmosphere of the subject



The map of the town.



Select a place to go there.



Time to recon the town.

material has been caught excellently and, unless you're playing with one drive, it moves along nicely. The arcade games are simple, but it's the adventuring side of things that really keeps you at it. Good stuff, but only if you've got the upgrades. *Andy Smith*

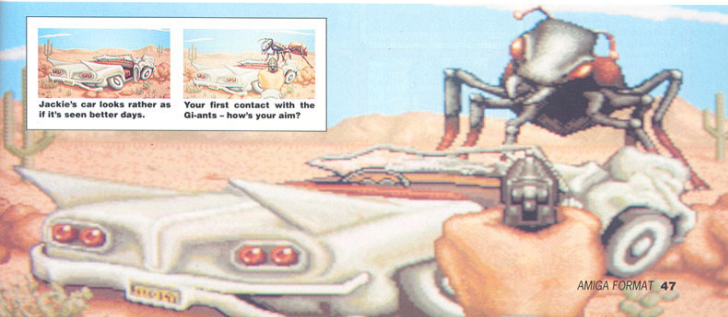
GRAPHICS	9
SOUND	7
INTELLECT	3
ADDICTION	7
OVERALL	80%



Jackie's car looks rather as if it's seen better days.



Your first contact with the Gi-ants - how's your aim?



ARMADA

ARC £29.95 ■ Keyboard
and Mouse

Back in 1588, life was a good deal simpler. It was also a lot harder for most people and, to top it all, most nations seemed to be permanently at war with each other. Back in 1588 England was no different and thanks to a whole series of events that gradually led to poor relations between England and Spain, things were just about ready to erupt again.

Catholic King Phillip II of Spain had just about had enough of the protestant Queen Elizabeth and so assembled an armada of some 130 ships at Lisbon with the intention of sailing to England, then escorting an invading army over from Flanders. The rest, as they say, is history.

Duke Medina Sidonia, the commander of the Spanish, did, however, have secondary orders which he was unable to fulfil. The King (so many observers believe) had told the Duke that if things got a bit tricky then to invade the Isle of Wight which would get right up the Queen's nose and put pressure on her to concede to some other Spanish demands.

This one or two player wargame based on the great event deviates from history and starts just as the Duke has decided to invade either the Isle of Wight or a prominent sea port located on the English mainland.

There are two main games: the cut-down version of the game allows the player to fight with fewer ships and for only two days, whereas the full-blown game is played over five days with many more ships on both sides.

Whichever you decide to play, the game system is the same. You take on the role of either Lord Howard or Medina Sidonia and issue orders to the rest of your fleet based on what you can see in the four compass directions from your position on the flagship. To get the hang of the game it's wise to select the option that allows you to view things from other commanders' positions or landmarks.

Orders are issued every half hour of game time (approx five minutes real time) by simply typing them in on the keyboard. The

orders are then received by either the squadron commanders (Drake or Hawkins) or a particular ship (Victory or Lion) depending on who they were sent to. The distance the message target ship is away from the flagship has a distinct effect on the amount of time it takes for the ship to receive and act on the orders (ordering a ship that's out of your line of sight, for example, is tricky).

The sort of orders available are usually basic - attack, patrol or disengage - but also very crucial. Should Drake's squad go after an enemy squadron using long-range or short-range tactics? The option picked could be crucial to the whole battle. Once you're happy with the orders sent, the game then moves the squadrons, resolves any combat and updates the screen before the whole process starts again.

GRAPHICS AND SOUND

No sound (except the Plymouth one!) The graphics are very basic, too, though the ships are recognisable as ships. Graphics have never been a major consideration in a wargame, as it's better to have functional ones than merely pretty ones, but these are fine (although the update is not the fastest seen).

LASTING INTEREST

There's only the one scenario, which limits things, but that said, the game is complex and will take you a long time to play, and even longer to master. The two player option really does add even more lasting interest.

JUDGEMENT

Unless you spend a lot of time with this game, you're not going to get the best from it. Work needs to be put in during the game and unless you're a real wargame fan you're better off looking for something else. If you are a wargamer though, you'll enjoy the chance to fight a decent sea battle and it's well worth taking a look at for that reason. It's not as good as the earlier game *Borodino*, but it's a nice change and certainly no disappointment. **Andy Smith**



(From Top to Bottom) The start of the game, and after shadowing the armada for a couple of hours, the order to attack is made. Long range tactics have been adopted to keep out of range of the Spanish guns. As the two fleets move closer, though, the English adopt grappling tactics (get right next to an enemy ship and attempt to capture it). Considering the size and number of Spanish galleons, that may not be a wise move. The bottom picture describes a dire situation as Howard's squadron becomes out-maneuvred and out-gunned. It looks like it's going to be down to Drake to save the day.



GRAPHICS	6
SOUND	N/A
INTELLECT	8
ADDICTION	6
OVERALL	82%

Red-Sabbath, the evil wizard, has come forth from the mountains in an attempt to terrorise the peaceful land of Belloth. That's not all he wants to do, though, because Belloth is the crossroads between five time zones. If Red-Sabbath can gain control of the land he can control the time zones.

To effect his dastardly plot, RS has kidnapped the princess Tanya and the keeper of the land, the Knight of Thunder (this means you!) must go to fetch her back. The problem is that the wizard has created five clones, one in each zone, who must be destroyed before the girl can be freed.

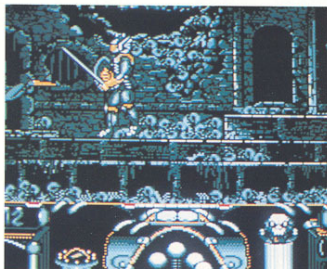
The action starts with your good self positioned in front of five stone pillars, each one representing a time zone. Choose which one to enter and then not only must you defeat the wizard's clone, but also find seven amulets that are being carried by his minions in different zones. Collecting an amulet in one zone is not always as helpful as it could be because for an amulet to work you need to be in the corresponding time zone: but collect one and you're immediately put back in front of the pillars so that you can choose the next zone.

So, with monsters - walking, crawling, bouncing and flying - and a sorcerer in each zone to defeat, other hazards like jumps and collapsing floors may seem less of a trouble. Then there's the time limit to consider. But by far the biggest problem is the nasties, which keep coming at you until you kill them off (although others take their place shortly afterwards) so it's as well to get to know the



TITUS £24.99 ■ Joystick or Keyboard

KNIGHT FORCE



Left: Fighting with one of Red Sabbath's clones in the chamber that's present in all time zones. Above Top and Above: Battling against some of his minions in two other time zones. It all looks fine here, but the weak gameplay lets the game down.



eight combat moves and which to use on which enemy. Kill off the clones then walk away from the final battle with Red-Sabbath, and Princess Tanya and the land of Belloth will once more be safe.

GRAPHICS AND SOUND

The backgrounds (for the most part) are superb. The sprites are all well drawn and large. The animation is fine on most bits except the aggressive moves and the walking and jumping is not the best ever seen. The sound effects are curious - your character makes a distinct horse trotting sound as he clip-clops across the screen - and there aren't too many others either.

LASTING INTEREST

It will take a while to complete, but you'll have to be very determined to do so. Stick with it, though, and things begin to improve slightly, but unfortunately not much.

JUDGEMENT

Only having one life is a real pain, especially if you're a little way into the game. The control method used is very awkward and generally you're left feeling the game has too little substance and too many annoying features to keep you at it. A case of nice sprites and backgrounds, but weak and frustrating gameplay. **Andy Smith**

GRAPHICS	8
SOUND	6
INTELLECT	2
ADDITION	4
OVERALL	33%

COMMANDO

ELITE
£19.99 ■
Joystick
or
Keyboard

Super Joe finally makes it out of the arcades and onto the Amiga in this conversion of the Capcom coin-op that was a hit about four years ago.

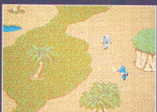
It's a vertically scrolling shoot-em-up viewed from above in which the player takes charge of Joe as he goes charging up the screen

and into rebel territory dealing death to anyone that gets in the way of his M60 or hand grenades. Enemies appear from all parts of the screen and even from foxholes and behind sand bags.

Make it to the end of each stage and there's a fortress to penetrate before progressing to

the next stage, where things are invariably going to get tougher.

This always was a good coin-op and it's nice to see Elite have done a good job with the conversion. It's a little old, but still heaps of fun and tough and addictive enough to keep you coming back for more. **Andy Smith**



Super Joe makes his long awaited debut on the Amiga.

GRAPHICS	7
SOUND	6
INTELLECT	2
ADDITION	7
OVERALL	71%

OMEGA

MINDSCAPE

£29.99 ■

Mouse and
Keyboard

As an employee of the Organisation for Strategic Intelligence it's your job to design and test neural cybertanks. Sound easy enough? Well it's not.

Designing a cybertank breaks down into two main sections: mechanical (chassis, weapons systems and so on) and technical (giving the tank some Artificial Intelligence, or AI).

The mechanical side of things is straightforward enough. You're given a budget of 1,000 credits (initially) and have to choose a chassis, drive system, fuel and type of weapon. Designing the AI, however, is another matter.

Here you enter what the game calls the CCL module (Cybertank Command Language) and by building up a simple BASIC-like program you instruct the tank what to do once it gets on the battlefield. If you're completely new to pro-

gramming of any sort you'll be glad of the inch-thick 'handbook' that comes with the game and which takes you by the hand to gently lead you through building up a tank's AI from scratch. This process includes telling it what to do when it 'sees' (more accurately, scans) an enemy tank and how to go about looking for these tanks.

As an aid there are also 'capsules' - complete AI routines - that can be loaded and incorporated into your design. Once you're happy with the tank, authorize it (the program simply checks for syntax errors or missing bits of tank) and then test it.

Testing involves picking a battlefield (three pre-designed ones are available) and picking some enemies. Then it's a case of sitting back and watching to see if your tank behaves as you hoped. If it doesn't, you go back to the draw-

ing board and try again. If it does, you can proceed to evaluation where you have to fight 10 battles against OSI-designed tanks. Win a high percentage of the battles and your security clearance is raised and your budget increased.

GRAPHICS AND SOUND

Turn the sound off immediately: the trundling and firing effects are grating rather than satisfying. As for the graphics, well, they're far from state-of-the-art because they're very blocky and though they're colourful they're very simple. The text side of things is much better, though, with a suitable futuristic typeface in the AI module. Sounds awful but the graphics do their job: just about.

LASTING INTEREST

Once you're in, you're hooked and will be constantly coming back to

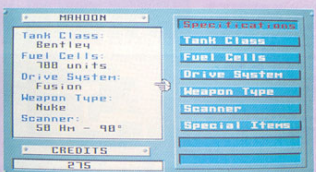
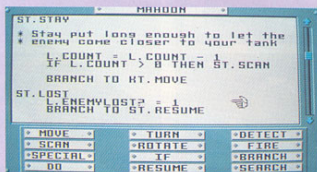
the game to try out another idea. Get used to the program and you can get even more involved by including things like teams of tanks and communications between them. There's even a battlefield designer so you can build your own scenarios. Omega has loads of lasting interest built in.

JUDGEMENT

There's something very obsessive about the game: it's one you'll be playing for hours at a stretch and frequently. It's very cerebral stuff and, even though the game does feature battles, it's not going to appeal to straight shoot-em-up fans who just want to spend time blasting at anything that moves.

Puzzlers and problem-solvers are going to love it, though. When you're sat watching your tank in battle, if it suddenly decides it doesn't want to fire any more and you've no idea why, you just have to go back through the AI and hunt down the problem. Which can take hours. Compulsive stuff that's just slightly let down by the presentation. **Andy Smith**

GRAPHICS	4
SOUND	1
INTELLECT	9
ADDICTION	9
OVERALL	87%



Above: In the design module. Here you attempt to give your tank some artificial intelligence that it will use once it's on the battlefield. This is part of a scanning routine that tells your tank to wait for the enemy to come to it - a good plan for getting the first few shots in on the enemy. This screen is also where you juggle your credits and get the best weapons your clearance level allows.



Above: In the testing module with trace mode on. This allows you to follow the tank's AI on screen and see what effect the instructions have on its behaviour (an essential thing to do prior to putting your tank in for evaluation, (Above Right)). That wait instruction seems to have paid dividends as the OSI tank takes a direct hit during the battlefield tests.

AXEL'S MAGIC HAMMER

GREMLIN GRAPHICS £19.99 ■ Joystick

Isn't life as a young person wonderful these days? Playing in the sunshine with not a care in the world. What could possibly go wrong? Well, a nasty Dragon King could kidnap your girlfriend...

This is what has happened to Axel's lovely little friend Lucy, and Axel being the brave young thing that he is has decided to set forth to the rescue. Now he may be just a young lad, but he's not short of the necessary hero-type mettle. Just a hammer and a ton of courage is enough for him.

Unfortunately, a number of nasty creatures and obstacles lie between him and his girlfriend, such as bubbling lava pits, fluttering bats and deadly wasps. Fortunately, Axel can give some enemies a swift smack with his hammer to take them out and, if that's not enough, then broken

blocks throughout the game reveal various power-ups, such as throwing hammers and a tough crash helmet which allows him to head-butt his way to Lucy.



Axel shelters from the snow

You must guide Axel through a series of levels each with an individual style and atmosphere before you can ride off into the sunset with your sweetheart.

GRAPHICS AND SOUND

The design is very much in the Japanese arcade adventure mould, complete with platforms to bounce around on, cutesie characters and

two, jangly tunes. This style of graphics is usually dominated by the dedicated game consoles, so it's nice to see that us Amiga users can get a look in.

The animation is clean, the sprites are jolly and the sound is boppy. Not a quantum leap forward in programming, but just right for this kind of game.

LASTING INTEREST

At first death comes very easily to poor old Axel, but once you've worked out the locations of the various power-ups things get a little easier. Completing the first zone gives you an incentive to crack the higher levels, just to see what the next area looks like.

The 'continue play' option means that you don't easily get bored by having to start from the beginning every time, but it cer-

tainly doesn't make an easy task of reaching the end of the game.

JUDGEMENT

The trouble is that all possible variations on the platform game have been tried, so any new release has to be something really special. *Axel's Magic Hammer* is by no means a terrible game - the gameplay is lively, the graphics and sound are jolly and the atmosphere cute - but it doesn't quite have that spark which raises it above other games in the field.

Maff Evans

GRAPHICS	7
SOUND	6
INTELLECT	2
ADDICTION	5
OVERALL	67%

Top Left: In the castle, and someone's left the central heating on.

Top Middle: Axel Bellamy is back in the underworld.

Top Right: Gotta keep up with technology 'aven't you? Axel's in the factory.

Bottom Left: Our little hero searches the Aztec tomb.

Bottom Middle: Oh, fishy, fishy, fish! Don't slip! Axel can't swim.

Bottom Right: The diminutive adventurer gets his pother's head on for the underground level.



KICK OFF EXTRA TIME

ANCO
£9.95 ■
Joystick

This must be one of the most keenly-awaited expansion disks of all time. Why? Well, if you haven't experienced the joys of *Kick Off*, your Amiga hasn't been used.

Basically, Brian, the disk allows modifications to be made to the original game (and you will need the original KO disk) including deciding what sort of state the pitch should be in (soggy, hard and so on). There are also some extra playing formations including



Full strength! Go on! Kick it now!

all-out attack ('Blitz') and all-out defence ('Lockout'). But by far the biggest difference is the inclusion of a strength meter where the

player can decide the strength of the kick by hitting the fire button when the small highlight bar at his feet changes colour (black to white: the blacker the line, the stronger the kick).

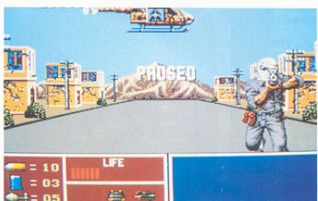
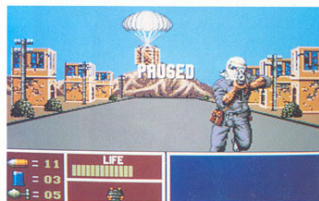
What a great idea all these variations are. What a shame they're a total waste of time. The strength meter just doesn't work as an idea, the different pitches have little effect and the new tactics make little difference. It's

almost like you can take all the good bits out of *Kick Off* and play a very average football game. Don't bother with it. *Andy Smith*

GRAPHICS	8
SOUND	6
INTELLECT	4
ADDICTION	4
OVERALL	45%

OCEAN £24.99 ■ Joystick or Mouse

OPERATION THUNDERBOLT



In one player mode on the first stage. Above Left: Shoot the crates as they fall down (not the parachute) and you'll gain a bonus (extra ammo, a laser sight and so on). Above Right: It was a laser sight, which will help when it comes to taking out the heavy stuff like that helicopter – though you have plenty of rockets, so you could loose one of those off and save some of that precious ammunition. A crate containing a power bottle would certainly not go amiss right now!

The man with the machine gun is back and this time he's bringing his buddy. After rescuing the hostages in Operation Wolf, Roy Adams, trouble shooter, mercenary and general tough guy, is



Boom! Another missile crashes home and inflicts some heavy damage on your life meter.

back in action, this time with his good mate Hardy Jones.

The follow-up to the smash hit Op' Wolf has arrived. Now one or two players can join in the action and rescue some more hostages. Arab terrorists hijacked a DC10 flying from Paris to Boston and re-routed the plane to Africa. Only Roy and Hardy can save the day.

Armed with a sub machine gun and a fistful of rockets, the player has to work through eight stages of enemy territory to reach captives and liberate them. All the action is viewed through Roy's (and Hardy's) eyes and the basic idea is to shoot anyone that appears on the screen before they get a chance to blast away at you.

Things are never that easy, though: the enemy soldiers have backup in the shape of helicopters, tanks and jets and your ammunition is limited. Just like in Op Wolf, extra ammo and rockets

are acquired by shooting the crates that parachute down from the top of the screen before they hit the bottom.

In these crates can also be found things like power bottles which restore your energy (a meter at the base of the screen runs down as hits are taken), a bulletproof vest which reduces the amount of damage enemy bullets have on your Schwarzenegger-like chest and a laser sight.

Unlike Op Wolf, Op Thunderbolt doesn't give you a sight to start with – you have to make guesses as to precisely where your gun is pointing – so gaining the sight is a massive boon (the rotters ensure you start each new stage minus the sight, though, so you have to keep collecting it).

Also unlike its predecessor, Operation Thunderbolt has more variety in the levels. Some are horizontally scrolling, some have the enemy coming from the back of the screen towards you and so on. The enemy's arsenal has changed to include not only the familiar daggers and grenades, but also missiles. Make it to the later stages and you not only have masses of the enemy to kill but you also have to ensure you don't shoot the hostages by mistake. It is indeed a dirty job, but someone's gotta do it.

GRAPHICS AND SOUND

The scrolling is a bit jerky at times, but you don't notice it once you get stuck into the action. What you do notice are the excellent sprites and the good backdrops. It

looks great and the fine sound effects and bits of speech do their bit to add to the atmosphere. Super, smart, smashing stuff.

LASTING INTEREST

Boy, it's tough. This is really a two-player game, so unless you've got super-human lightning reactions or are using a cheat mode, you're going to find it tough.

Even in two player mode this game is certainly no pushover and will take you ages to finish. Extra credits help, but not as much as you'd like, because if a player dies on a level the whole level has to be re-done. The difficulty tweaking has been set just right making it very addictive (even more so in two player mode than if you're playing solo) so there's bags of lasting interest.

JUDGEMENT

What a worthy successor to the original. Ocean have done a superb conversion job and captured the gameplay brilliantly. Op Wolf was good, but the variety to the levels and the extra challenge make this even better. Completely mindless and extremely violent, but very addictive and playable nonetheless. **Andy Smith**



Level Two. The situation is looking grim because those APC's are tough to destroy when you've no rockets left. Looks like 'game over' time.



Another game and one of your rockets trashes a helicopter.



Missiles, knives and baddies, it's all too much for one man!

GRAPHICS	8
SOUND	8
INTELLECT	1
ADDICTION	8
OVERALL	88%



```

The Hound of Shadow doesn't just bite postman: he sends them into the outer darkness, second class. One of the more solid of H P Lovecraft's creations, the Hound finds itself called from the Cthullan kennels and dropped in 1920s London. It is your task to defeat him in this text adventure from Eldritch Arts.

You begin your quest to face the unfaceable, destroy the indestructable, tame the untamable, climb every mountain and ford every stream either by selecting one of the ready-made characters or more cosmically by creating yourself. Once you've got your sexuality sorted out and have decided whether to be American or British, its time to pick a profession (I'll have a doctor please Bob). When battling unearthly canines with bad attitudes it makes little difference whether you choose to be a Gentleman Adventurer - tall, athletic, thick as two planks - or a Psychic Investigator - a whizz with the ghouls but crap at fighting - but this section does give you the chance to get into your role.

With profession in hand it's time to pick some skills: knowing from swimming to occult knowledge. Job done, you save yourself to a User Disk. Tally ho! and into the scenario.

The game really hates to see you get lost. In fact it hates to see you going anywhere other than where it thinks you should be. To this end subsidiary characters crop up from time to time, usually when you've taken one turning too many, and helpfully give you directions back to where you should be. This can lead to ho-ho highly amusing situations where Mr Pleasant Gentleman tells you that you look lost and asks you where you want to go. You say "home"
    
```

A deus ex machina saves you from getting lost in the twisty streets of Soho...



...and the accompanying graphic shows the sights of Soho square itself.

HOUND OF SHADOW

ELECTRONIC ARTS £24.99 ■

Mouse and Keyboard

The Hound of Shadow doesn't just bite postman: he sends them into the outer darkness, second class. One of the more solid of H P Lovecraft's creations, the Hound finds itself called from the Cthullan kennels and dropped in 1920s London. It is your task to defeat him in this text adventure from Eldritch Arts.

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and shazam he points you in the right direction. Spooky eh? Well not really, no.

As a straight-down-the line text adventure you would expect the parser to be something special, but strange things happen: the United Arab Emirates are in the World Cup and it doesn't make

rather than you, manages to work out that the Adept Karmi and his charming assistant Yasmin are fakes. Only after this revelation does the Adept point the finger, or rather the paw, of the hound at a bookish young man. A dowager faints (before you've had the chance to get the brandy out the



Above Left: Your character's abilities must be bought, in time-honoured fashion, from a limited supply of funds granted you at the start of play. Above Right: The seance at which you first meet the hound.



them Brazil, and the parser is about average. Loads of atmosphere-wrenching 'I beg your pardons' or 'Try agains' litter the screen and there are no Again or Repeat commands. A few of the function keys have been redefined to save you having to type Examine (and gosh you do a hell of a lot of that) but shortcuts are not the norm. This does tend to defeat the purpose of a scenario without should rely on constant, unbroken tension and latent terror.

The first major scene is a seance. You are whisked away in a cab by your chum John who is not the most talkative cove in the world. At the seance, the game,

game tells you that you should help her) and you get to examine a lot of furniture before being lead away by friend John. It's all a bit too quick and there's too much nannying along by half.

GRAPHICS AND SOUND

An excellent way to create an atmosphere is by use of music, sound even... well any audio stimuli would have been nice. Unhappily, this chance to enhance the game is missed and you have to make do with a walkman playing old Dr Who soundtracks.

An occasional graphic, such as a staircase, hits your screen in order to enhance the atmosphere.

The problem here is that you can have graphics or text but not graphics and text. The atmosphere is fractured rather than heightened using this technique and the best advice is to toggle the pictures off.

LASTING INTEREST

With no sound and graphics which take over the screen, the *Hound of Shadow* relies on long descriptive passages to hold your attention. To give it its due, these are not half bad. There are none of those painful puns which disrupt other, similar, outings. The downside here is that you think that there must be an awful lot to examine when in fact there is very little. Those situations or objects which do require scrutiny are pointed out in no uncertain terms.

JUDGEMENT

To make such slight use of the machine's capabilities seems a great shame. The lack of sound and the rather pallid graphics (the sepia tone of some is, one would suppose, an attempt at recreating the 1920s) only serve to lose concentration. As a tale, the *Hound of Shadow* has a great deal of potential. If you were really set on exploring London, learning a tiny bit about Lovecraft's world (try some of his short stories) and finishing it because it's there, then you might have some fun. On the other hand, the Call of Cthulu board games and a few mates would do just the same job in not a dissimilar manner. **Tim Smith**

GRAPHICS	5
SOUND	N/A
INTELLECT	8
ADDICTION	4
OVERALL	45%

THE WHOLE TRUTH ABOUT GAMES PROGRAMMING

DAVE JONES, programmer of *Psychosis*, lifts *Menace* and *Blood Money*, begins a series in which he spills the beans about the tricks and wrinkles used by top games programmers. This month: system control.

In this series, Dave Jones will not only provide the real facts about how to program a best-selling game: he also intends to back it up by supplying the source code to his first great game, *Menace*. Each month, the Coverdisk will contain a piece of source code to illustrate the particular aspect of programming which Dave is discussing that month.

Usually, source code is one of the programmer's most jealously-guarded secrets, because it contains details of the tricks the

author has learnt to make his code faster and more effective than that of his rivals. Very often, sections of the code are re-employed in later programs.

Of course, *Menace* is no longer a brand-new game and a remarkable amount has been learnt about programming the Amiga since Dave wrote it: so hopefully no harm will be done to Dave's personal prospects. But much of the information in these pages will be invaluable to anyone just starting out in programming

who wishes to produce a seriously viable, up-to-date and saleable Amiga game.

Remember, this is serious stuff. The code contained on the Coverdisk is 68000 machine code, so some knowledge of the relevant language will be necessary before you can get on with writing your world-beating game. To use the code, you will need to assemble it using either Devpac from HSoft, with which it was written, or Aggonaut's *Argasm* as demoed on this month's

Coverdisk. If you are using *Argasm*, be sure to include the extra piece of conditional code written by Jason. Good luck!

About Dave Jones...

Dave Jones is now 23 years old and lives in Dundee, Scotland. His first game, *Menace*, was released by *Psychosis* in November 1988 to considerable acclaim from reviewers. It may look somewhat dated now, but many of the programming techniques it uses are extremely advanced.

Dave started work for Times in Scotland when he left work, doing development work for the early Spectrums, a background which gave him a good insight into computer hardware. Although originally involved in writing assembler test programs, he ended up devising his own ingenious hardware add-ons. Currently, he is still training in Microsystems at the Dundee Institute of Technology; his programming is done at night!

Although *Menace* was written entirely on the Amiga, Dave cur-

rently uses a PDS system running on a 386 PC with which to write. This system was used in the writing of *Blood Money*, the awesome follow-up to *Menace* released in May of 1989. Dave is a great fan of the Amiga and, as you will discover, certainly knows his onions from his hardware sprites...

Finally, *Amiga Format* would like to say thank you to all at DMA Design and at *Psychosis* for their support and assistance with this feature series. Without whom it would not have been possible...

Welcome to a series of articles in which most aspects of games programming will be discussed in depth. More specifically, and quite naturally, it will be aimed squarely at Amiga games programming. Games are made much simpler on the Amiga by the abundance of specific hardware that the machine possesses to handle the kinds of work games require.

I will assume some knowledge of 68000 programming. There have been many articles written on this subject, and good books available, for some time now. One book that is pretty essential is the bible of Amiga games programmers, the Hardware Reference Manual.

AMIGA
Hardware
Reference Manual
Copyright © Amiga, Inc. 1988



Source Secrets

To try to discuss game programming in general is a little difficult, because there is an unlimited variety of methods & tricks that are employed by different programmers. So, to give us a bit of direction, these articles will be accompanied by the full source code to an Amiga-specific game: namely my first game, *Menace*.

Source code to games is generally kept hidden away under lock and key, because it is the culmination of many months' work on the part of the programmers and a fair bit of the source code is usually carried on to other projects. It will be invaluable to this series, and hopefully beyond it, in getting across exactly how a game is designed & written.

Each month a specific part of the game will be documented, accompanied by the source code for that section. *Menace* should be of some interest as it does make use of a lot of Amiga-specific hardware: hardware sprites, dual playfield, hardware scroll, screen splits and so on (even though the game may look a little old these days!)

Defining our Terms

Some terms that are used in games programming may cause a little confusion, so first here is a short-list and description of the main ones used by programmers.

VERTICAL BLANK or FRAME – Essentially 1/50th of a second, the

time it takes for a TV or monitor to update its display. An important factor for a game is the speed it runs at. The fastest will be 50 frames per second, ie the game runs as fast as the TV or Monitor can update. This leads to the silky-smooth scrolling of some games (like *Menace*, grin!) which can only be achieved at this speed. You can scroll slower, say 25 frames per second, but this starts to introduce a slight shimmer to the graphics. It may be a surprise to learn most 3D games only run at about 10 frames per second, which shows the scope for improvement if we had very fast hardware.

RASTER/SCAN LINES – Raster lines are basically the horizontal lines produced by the monitor which are related to the vertical resolution of an Amiga screen. Most games use 200 or more lines of display. NTSC displays used in the states can display a maximum of about 220 lines. PAL systems such as ours can display about 270 lines. The Amiga is a lot more flexible than other machines as it allows us to define our own screen sizes. The NTSC system is why so many games have a large black border at the bottom of the screen: what fills our screen by two thirds will give a full screen on an NTSC system. Not many programmers go to the trouble of producing two versions due to the large number of changes needed to the game (myself included) but full marks go

to the programmers who do (Dino Dini with *Kick Off*, for example).

TIMINGS – One method often used to judge how fast a piece of code is taking to execute (rather than adding up all of the instruction times: no mean feat!) is to change the background colour of the display to a certain colour at the start of the piece of code, then reset it back to the original colour at the end of the code. This gives a visual colour bar fading about on the screen, which is a nice indication of roughly how many raster lines the code is taking. Next time somebody says 'I can clear the screen in about 100 raster lines' you will know what they mean.

DOUBLE BUFFERING – A technique that entails using two copies of the game screen. While one is being displayed the other is being altered, moving all the aliens about for example, this cuts out all forms of 'flickering' caused by changing a screen while we are looking at it. It is quite hungry on memory due to the two screens, but is fairly essential for smooth animation.

HARDWARE/SOFTWARE SPRITES – The Amiga has the facility of displaying hardware sprites which is a very fast way of putting objects on the screen. There is no visual way to tell the difference between hardware and software sprites: software ones are drawn into the actual screen memory. Hardware sprites are a little limited on the Amiga, but can be used for speed. The main ship in *Menace* is made

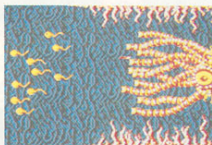
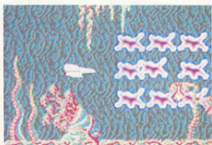
up of hardware sprites, but all of the aliens are software sprites. Many people refer to software sprites on the Amiga as BOBS, short for Blitter OBJECTS, as they tend to be drawn using the blitter. **MASKING** – When drawing graphics into the screen it is preferable to leave intact the graphics that are already there. This is done by masking, which lets all 'holes' in the graphic that we are drawing show the graphics underneath. The blitter in the Amiga is an expert at doing this for us.

EDITOR – Not a text editor, but a piece of software that allows the editing of game data such as level maps, or alien movement patterns. These are quite time-consuming to write but save a lot of time once completed. *Menace* has no editors: it was the first game I had written, and all data was typed in by hand. Halfway through the game I thought 'Boy, do I need an editor!' but never got round to writing one. Unless you really enjoy a lot of typing, one is strongly recommended. Even one written in another language like BASIC will suffice: but the best ones are usually integrated into the game allowing you to edit data at the press of a key.

This Month's Source

The source file on the Coverdisk (framework.asm) is a small but invaluable program. Most games tend to 'bash the metal' which simply means that the operating

THE MENACE WITHIN



system is not used - 'trashed' - which leaves us with 512K of free memory and full control over all of the hardware. This is required near the end of writing a game when memory may be short, but it means having to reset the machine and reload the assembler and source, each time we test a program.

To get around this when trying out programs we can be nice the operating system by properly allocating some memory, using DOS to load some files, then WHACK, hit it where it hurts and take over the system. Once our program has done what it wants we revive the operating system: it has no idea what happened, so it carries on as usual.

This allows us to test virtually every aspect of a game as if it had complete control of the machine. Of course if there are bugs in the code being tested which cause a crash, a reset will have to be performed. It is always nicer to work from RAM disk but be sure to save to disk regularly. A recoverable RAM disk is very useful if you have expansion memory. ASDG produce one (VDO:) which is by far the most bomb-proof: Menace was completely written using this, yet it survived 99% of crashes.

Framework uses the minimum of operating system routines to get by. This is the only time in this series that operating system routines will be used, so a quick run-through of their use is in order before we delve into the more meaty hardware.

OpenLibrary/CloseLibrary

To get access to certain system routines, such as DOS loading, requires us to open an associated library, which simply returns the address of a table containing some variables and addresses of the routines to call. Framework opens the graphics library to find the address of the system copper-piper (more about this later). It also opens the DOS (Disk Operating System) library to access disk routines.

AllocMem/FreeMem

An exec library routine (the exec library is always in memory) to ask

THAT MENACE SOURCE CODE...

Here is a complete listing of the source code included on this month's Coverdisk. Framework takes over and shuts down the Amiga system so that the game can do what it likes. You can type this listing in using a text editor if you so wish.

```
* Amiga system take over framework
* 1988 Dave Jones, DMA Design

* Allows killing of system, allowing changing of all display &
* blitter hardware, restoring to normal after exiting
* Memory must still be properly allocated/deallocated upon
* entry/exit
* DOS routines for loading must be called BEFORE killing system

* Written using Devpac2

section Framework_code_c

* READ ME !!!
* The following block of conditional code is included to provide
* full compatibility with Argonaut's ArgAsm assembler system. The
* include files provided with ArgAsm are different from those on
* the Devpac program disk therefore several extra assignments have
* to be made for the code to successfully assemble under ArgAsm.
*
*                                     - Jason H.

ifb _ArgAsm

incli "include:"
include exec/funcdef.i
_SysBase equ $04
elseif
incli "include:"
endif

* END OF CONDITIONAL BLOCK

include libraries/dos_lib.i
include exec/exec_lib.i
include hardware/custom.i

Hardware equ $dff000
MemNeeded equ 32000
SystemCopper1 equ $26
SystemCopper2 equ $32
PortA equ $1fe001
ICRA equ $1fe001
LeftMouse equ 6

start lea GraphicsName(pc),a1 open graphics library purely
move.l _SysBase,a6 to find the system copper
clr.l d0
jsr _LVOOpenLibrary(a6)
move.l d0,GraphicsBase
lea DOSName(pc),a1 open the DOS library to allow
clr.l d0 the loading of data before
jsr _LVOOpenLibrary(a6) killing the system
move.l d0,DOSEBase

move.l #MemNeeded,d0 properly allocate some chip
```

Continued on Page 68

the system for some free memory is called. Even if you multitask your assembler there should be around 200K free for testing. Framework will simply exit if not enough memory could be allocated. Only CHIP memory the specialist hardware can only access the first 512K, termed chip memory) is allocated because virtually all data used by a game has to be accessed by the hardware.

DOS Open/Read/Close

There are no DOS routines in framework at the moment as there was no need at this stage. These will appear next month to allow us to load any file into our allocated memory. Files can also be included straight into the source with the INCBIN directive; however, this tends to make assembly time quite long. DOS routines are simple to use so we'll take this path.

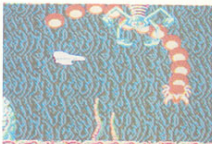
The above is the full extent of the operating system routines used. The rest of Framework basically consists of two routines, TakeSystem & FreeSystem.

TakeSystem saves all the vital information about the system, namely copper list addresses, and DMA and interrupt status. The system is then stopped by disabling all interrupts and DMA channels. This frees us to set up our own values.

Between the TakeSystem & FreeSystem calls is where our code will sit until FreeSystem is called, at which point the system is revived and we will be returned to the CLI.

If you run Framework as it stands just now, not a lot will happen. The screen will blank to the background colour, the mouse pointer will disappear and the usual disk drive clicking will vanish. The system is now dead, waiting for the left mouse button to be pressed. Press the mouse button and everything will return to normal.

Note that we did not clear the screen in Framework, yet it did disappear. This is because we turned all DMA (Direct Memory Access) off. The Amiga uses DMA extensively when it requires to fetch or move memory. All the custom chips use this feature to fetch the data they need (blitter, sound, sprites etc) and we can selectively



► turn on or off their ability to do so. DMA does tend to slow the processor down if it is being used extensively; however, this method of fetching/moving data is a lot faster and more efficient than using the processor to do the same job.

Main Game Loops

To give an idea of exactly what routines will be covered later, we will look at the 'main game loop' for Menace. All games should have a main game loop. Through the use of descriptive labels in your source this should show virtually every stage of the game as it is processed. Cue Menace:

```

MainLoop bsr WaitLine223
          not.b vcount(a5)
          beq TwoBlanks
          bsr
Checkplayfield2
          bsr Moveship
          bsr
CheckCollision
          bsr
EraseMissiles
          bsr LevelsCode
          bsr
UpdateMissiles
          bsr
Drawforegrounds
          bsr PrintScore
          bsr CheckKeys
          bsr CheckPath
          bra MainLoop

TwoBlanks bsr
Checkplayfield1
          bsr
FlipBackground
          bsr Moveship
          bsr
Restorebackgrounds
          bsr
ProcessAliens
          bsr SaveAliens
          bsr DrawAliens
          bra MainLoop
  
```

As well as the above routines we will also need extra ones that are not used in the main game. These will be high score, initialise, text printing etc. Each routine should be as independent as possible from each other. By this I mean it should be possible to remove one of the above routines from the main loop, and still run the game:

Continued from Page 67

```

movew.l #2,d1          memory for screens etc.
jsr _DMAAllocMem(a6)  dl = 2, specifies chip memory
tst.l d0              where screens,samples etc
beq MemError         must be (bottom 512K)
movew.l d0,MemBase

movew.l #Hardware,a6  due to constant accessing
bsr TakeSystem       of the hardware registers
* it is better to offset
wait dtst #EofMouse,PortA them from a register for
bsw wait            speed & memory saving(A6)

bsr FreeSystem

movew.l _SysBase,a6
movew.l MemBase,a1
movew.l #MemNeeded,d0 free memory we took
jsr _VOPFreeMem(a6)
MemError movew.l GraphicsBase,a1
          jsr _VOCloseLibrary(a6)
movew.l DOSBase,a1 finally close the
          jsr _VOCloseLibrary(a6) libraries
          clr.l d0
          rts

TakeSystem movew.w intena(a6),SystemInts save system interrupts
movew.w dmacon(a6),SystemDMA and DMA settings
movew.w #57fff,intena(a6) kill everything!
movew.w #57fff,dmacon(a6)
movew.b #01011111,ICRA kill keyboard
movew.l #68,Level2Vector save interrupt vectors
movew.l #6c,Level3Vector as we will use our own
          rts keyboard & vblank

* routines

FreeSystem movew.l Level2Vector,#68 restore system vectors
movew.l Level3Vector,#6c and interrupts and DMA
movew.l GraphicsBase,a1 and replace the system
movew.l SystemCopper1(a1),Hardware+cop1lc copper list
movew.l SystemCopper2(a1),Hardware+cop2lc
movew.w SystemInts,d0
or.w #0000,d0
movew.w d0,intena(a6)
movew.w SystemDMA,d0
or.w #0100,d0
movew.w d0,dmacon(a6)
movew.b #11001101,ICRA keyboard etc back on
          rts

Level2Vector dc.l 0
Level3Vector dc.l 0
SystemInts dc.w 0
SystemDMA dc.w 0
MemBase dc.l 0
DOSBase dc.l 0
GraphicsBase dc.l 0
crap dc.b 0

even
GraphicsName dc.b "graphics.library",0
even
DOSName dc.b "dos.library",0
end
  
```

Note that the tabulation and the 'comment' asterisks may vary.

obviously with funny effects, but the game should not crash. This greatly helps when debugging a game as it nears completion.

Some of the most obscure bugs are when areas of memory may be being corrupted. With a main game loop constructed of individual routines we would successfully remove individual routines until the bug vanished: this way we will be at least know in which routine the bug lies. Well, at least 90% of the time!

Data Structures - the essence of a game.

Anybody who has taken courses in programming should have had the concept of data structures hammered home to them. Designing good data structures for your game data CANNOT be over emphasised. A data structure is simply a definition of exactly what data, and in what order, is needed to describe and control a certain object.

Take for example an alien moving about the screen waiting to be blasted. The information we need on this alien may be X & Y coordinates, number of frames of animation, where it is going, how many hits to kill it, how many hits has it taken, etc etc. To write code to move each alien individually would be very wasteful of time and memory, and be very inefficient. One or two routines should be written that control every alien by working on a data structure that is common to all aliens.

Most programmers tend to work this way as it is a fairly natural way to do things. Try not to cut down on what data your structures contain in the hope of saving memory. Complete game code, with all the data structures, tends to use about 10%-15% of the available memory, the rest being used for graphics, displays, sound etc. (other games, such as 3D ones, may differ). The ProcessAliens routine from the main game loop simply processes data structures, and nothing else. This will be described in full later.

Next month will see the start of the really juicy programming bits with the source for the dual playfield scroll routine. ■

