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MISSILE COMMAND

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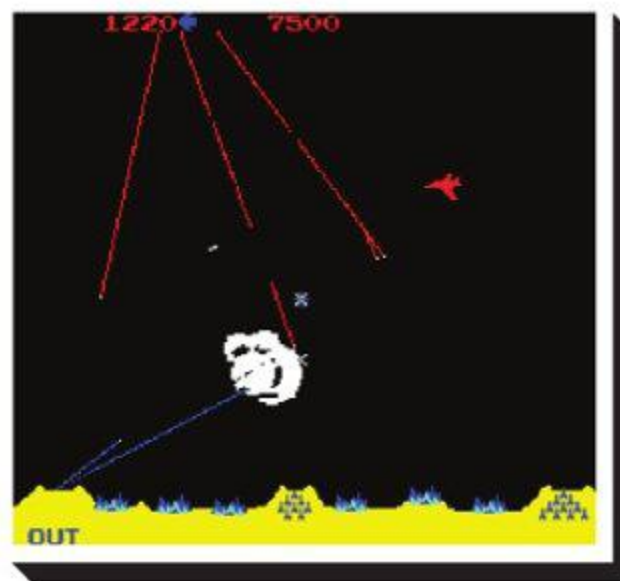
- » **Name:** Missile Command
- » **Released:** 1980
- » **Publisher:** Atari
- » **Developer:** Dave Theurer
- » **By The Same Developer:** Tempest



COIN-OP CAPERS

#10 Missile Command

Retro Gamer takes a definitive look back at a classic arcade game and unravels its brilliance through those who know it best



Yhat you're even reading this magazine means that there's a good chance you've played, or at the very least heard of, *Missile Command*. One of Atari's most popular titles from the golden age of arcade games, it saw players assume the role of a poor chap working the busiest day of his life inside a missile defence facility.

The brainchild of Atari's Dave Theurer, *Missile Command* tasks you with protecting six cities from airborne missile salvos (you can read an exclusive interview about the game's creation with Dave and Rich Adam on page 62). In the game you have access to three mounted missile launchers, which each hold ten rounds of ammunition. Activated by three fire buttons – one on the left and right of the screen, with a third in the middle – you must use them tactically and skilfully to shoot down the approaching thermonuclear missiles as precisely as possible, and play continues until the six cities you are defending are destroyed. The game starts off deceptively easy, but as missiles begin splitting into multiple targets and low-flying planes and satellites

enter the picture, the gameplay soon becomes very, very hectic. It's also worth noting that *Missile Command* cannot be finished or won in any traditional sense – it is simply an endurance test between man and machine. 'The End' is therefore inevitable. Deep, man. Very deep.

Missile Command's core concept came about as a result of the Cold War between the Soviet Union and the United States. Initially there were plans to make the game as realistic as possible, as the cities you had to defend were all based on real-life locations along the Californian coastline. The cities of San Francisco, Los Angeles, Santa Barbara, San Diego, Eureka and San Luis Obispo were all originally due to appear as the cities for each stage, but the idea to set the game on the real-life Californian coast was eventually dropped due to the potential controversy that it might create. Instead, the player ended up defending six unnamed, unrecognisable locations.

Despite its nameless setting, the game was based on the very real threat of all-out nuclear war, which was considered a distinct possibility at the time of *Missile Command's* development period. This took its toll

on the development team, though, with Dave in particular being affected by the game's theme and gruelling development schedule and suffering nightmares as a result.

Nuclear nightmares aside, there was no denying that *Missile Command* was an incredibly good game that instantly became a huge success when it was released in arcades. It became a huge money-spinner for Atari, and it has been firmly ingrained in popular culture, with the hulking cabinet appearing in everything from *Chuck and Fast Times At Ridgemont High* to, appropriately, *Terminator 2: Judgment Day*.

We'd argue that *Missile Command's* success was down to a combination of its topical setting, the popularisation of the shoot-'em-up genre that was brought about by the release of Taito's *Space Invaders*, and for also being an incredibly tight game that requires real skill to play – we've never been able to get anywhere near Tony Temple's impressive world record, no matter how many times we've tried. Undoubtedly another key aspect of *Missile Command's* popularity was its clever implementation of a trackball. With any other control method at the helm the game just isn't the same – play it on MAME with a joystick or keyboard if you don't believe us – and this is because the ball is perfectly attuned to the game's frenetic and reaction-based gameplay, giving players an unrivalled sense of speed and precision that many other games of the time simply couldn't manage.

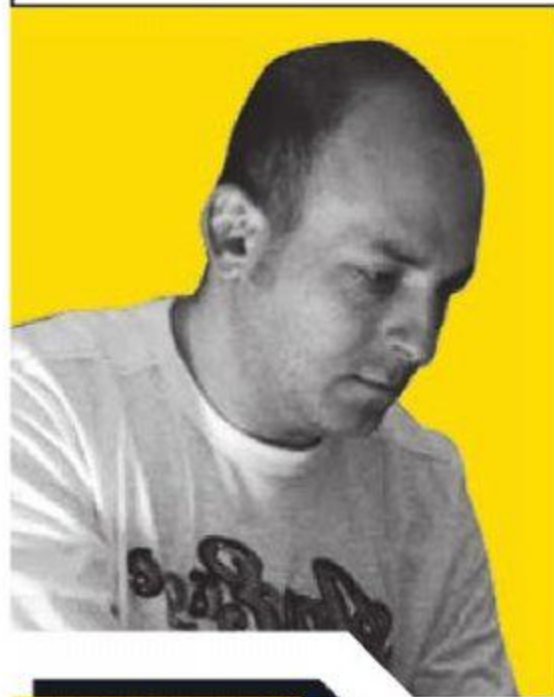
You need only look at the few home ports and countless unofficial clones to know that a joystick simply isn't as effective in helping you pull off the superhuman feats of dexterity that are needed to survive on the later stages and reach the highest scores. Despite the stiff challenge it poses, though, *Missile Command's* sheer simplicity means that anybody can play it, even if few of them will ever be able to truly master it.

It remains a sensational piece of work that once again proves that the simplest of game concepts are nearly always the best. ✨



COIN-OP CAPEERS

the expert



Tony Temple holds the Twin Galaxies and Guinness records on the *Missile Command* arcade machine, having broken a 20-year-old record to get it. Is gaming's next great rivalry under way?

PROFILE

- » Name: Tony Temple
- » Age: 42
- » Location: Wiltshire
- » Key Twin Galaxies World Records:
 - Missile Command* [Arcade] 4,472,570
 - Super Missile Command* [Arcade] 164,630

■ When did you first encounter *Missile Command*?

Well, *Missile Command* just happened to be the main game that was sited at my local videogame emporium, Rita's Café in Bristol. This would have been in around 1981 or so. It was pure chance more than anything; the fact is that it could have been any arcade game from the golden era, I suppose. It was sat alongside a *Gorgar* pinball machine and a *Moon Cresta* upright cabinet. Rita's was a grotty old place, so with hindsight, it was a miracle they had such a prestigious game – and original too. I recall they had a lot of bootleg games over the years. I would go there, and sit with a warm, 20p milky cup of piss-weak tea, and play *Missile Command* for hours.

■ Why did it appeal to you?

I was drawn to it primarily because of the controls – they were pretty unique and complex for the time. I really liked the idea of having total precise control of the game in all directions. It wasn't just a case of moving left, right, up and down and one fire button – you could move the crosshair in all directions, as slow or fast as you liked, and then have to decide which of three fire buttons to use. Whereas other players were turned off by the complexity and relentlessness of the game, I just saw it as a huge challenge. And, of course, the subject matter resonated with everyone at that time – nuclear war was seen as a real possibility, and *Missile Command* I think played on many of those fears we had as kids. At 13 years old, we were all quite impressionable, I suppose, and imagining that you were saving the world probably helped my gameplay



and made my desire to conquer the game greater than the older people who played it, perhaps.

■ When did you realise that you had a good shot at the record?

In 2005 when I got my cab, I discovered Twin Galaxies and saw that there were two types of *Missile Command* score recognised by Guinness. One was the marathon settings world record score, which was, and still is, 81 million points – to beat this would require you to play the game for over two days straight. That wasn't very appealing, to be honest – that's a test of endurance, not skill. But the other score type, known as tournament settings, looked more of a challenge. If you're familiar with *Missile Command*, you'll know that you normally get a bonus city every 10,000 points. Well, in tournament mode, you get no bonuses at all. Once the six cities are gone, that's it. The high score here was 1.69 million points, held by

a guy called Roy Shildt. He'd held the score since 1984 and no one had come close since. I thought it was beatable, so changed the settings on my cab to tournament settings, and starting playing. In March 2006, I scored 1.9 million points and got into the 2007 *Guinness Book Of Records* as a result. I've since increased my world record score. In August 2010 I managed 4,472,570 points and became the first person to get past the 'kill screen' on *Missile Command* in tournament mode.

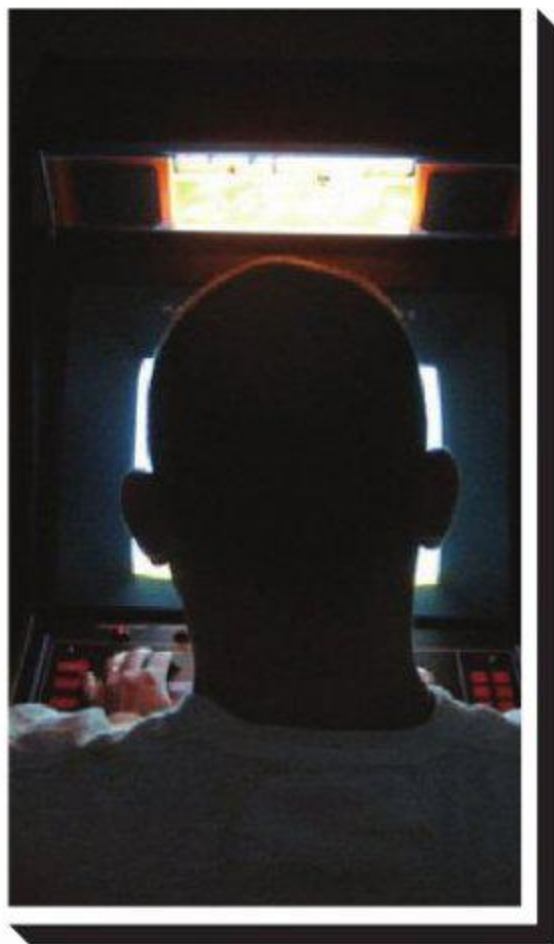
■ How long does it take to set your high score?

The scoring rate on *Missile Command* tournament settings is about a million points every 40 minutes or so. My current 4.4 million point world record score took just under three hours.

■ What sort of practice would you put in to get your score?

Well, being at the age I am and with a young family, a mortgage to pay and job responsibilities, not as much as I'd like. But I've been able to focus in on the game intently when I've needed to. I play very little now but do put in intensive play before playing live in the US, which a bunch of us do each year. When I went for a new world record in 2010, I played every other night for around two months. It's not a huge sacrifice, to be honest, and I wouldn't really regard it as practice – after all, every time you play, it could be 'the one' where the world record drops! The best way to learn *Missile Command* is to get in there and play it.

■ How did it feel to beat a record that had stood for over 20 years?



War Games

Things to look out for if under nuclear attack from a rogue nation

Cursor
This cursor is used to set the launch trajectory of your missiles, which explode where it's placed.



Cities
The object is to ensure the protection of the six identical-looking cities in the game.

Silos
There are three defence silos at your command: Alpha, Beta and Omega. Activation of each is denoted by the three fire buttons.



Missiles and Smart Bombs
There are two types of threat: standard missiles and smart bombs, which can sneakily change path.

Satellites and Bombers
Occasionally satellites and bombers appear in the middle of the screen and drop more missiles. They can be destroyed first.





» [Arcade] In the event of a nuclear war, we want Tony to be manning the missile shields.

It felt good, of course. It was nice to be recognised for the achievement. I wasn't splashed all over *Time* magazine or anything, but it's nice to be listed in the Guinness book. The most pleasing thing was simply beating a score that many people saw as impossible, and to start flying the flag for us here in the UK. No one had come near to the world record in over 20 years, so it was seen as big news in classic arcade gaming circles. I think it did a lot to resurrect interest in the game – I know of a few guys in the USA who went out and bought a cab as a result of seeing my score.

■ **Did Roy Shildt congratulate you for beating his record?**

Actually he did. As the previous record holder for over 20 years, he was surprisingly gracious – much to his credit. I don't think he was particularly happy about it – who would be? – but he acknowledged my ability, before going off on one about trackball settings, *Twin Galaxies*, his comic book, *The King Of Kong*, Arnold Schwarzenegger and Billy Mitchell's hot sauce. Roy tends to get a little worked up about quite mundane things. He has what I think we could call 'passion'. Or maybe he's just 5150; I'm not sure which.

■ **Is it true that there's a fierce rivalry between you?**

Well, I suppose there is, yes. People have built up this *King Of Kong* scenario around us – but the reality is slightly less gripping. Roy shouts loudly about *Missile Command* and Tony Temple every now and then to whoever will listen to him, and I just sort of shrug my shoulders and get on with life. Roy is a colourful character and can be pretty difficult to deal with. He'll tell you that he's the true champion, and that he could beat my score any time he likes. I've never met the guy but I suspect I will play him soon, head to head, which will be quite something. Many people want to see that happen, and I'm warming to the idea now. ✱

TONY'S SURVIVAL GUIDE

Top tips to help you reach the finish line in record time

- 1 ■ DON'T PANIC**
The fundamental rule with this game is not to panic. There is a lot going on, and players tend to lose control, firing shots off all over the place. This will not help your game at all. There is no need to fire three missiles up to take out just a single one coming down! And if you are playing in marathon mode, remember you get a bonus city every 10,000 points.
- 2 ■ THE RIGHT BASE**
Try to use the appropriate missile base. If a missile is coming down the right-hand side of your screen, try to use your right-hand base to take it out.
- 3 ■ SAVE THE MIDDLE MISSILES**
You'll notice that the missiles from the centre base do travel at a slightly faster speed than those from the side bases. Try to use your two side bases' missiles first, and save your middle ones – they come in handy when shooting down the smart bombs on the later waves. Work on your 'spreads' – a line of missile clouds you can create about halfway up the screen at the start of the later waves. This tactic buys you a bit of thinking time.
- 4 ■ THE TRACKBALL**
Get used to the speed of the trackball. Every one is different – some are really responsive and others you have to fight hard with. Once you've got the feel of it, you can start to play more instinctively. This is key to getting high scores. Things should start to become second nature, and you'll find yourself shooting things down without thinking about it.
- 5 ■ PLANES AND SATELLITES**
As a general rule, try to shoot planes and satellites down as soon as they appear. Removing the danger early is a good idea anyway, plus the quicker you remove them, the quicker you'll get an opportunity to shoot more, generating more points.

the sequels

Despite the lack of a true *Missile Command 2*, there are several spin-offs



Liberator
Released: 1982
Aside from *Missile Command VR* – a virtual reality offering that appeared in 1994 – there were no arcade sequels to *Missile Command*, which is very strange considering how popular it was. *Liberator*, then, is like a spiritual sequel to *Missile Command*

that was based on the popular *Atari Force* comic series. The game is essentially an inverted take on the *Missile Command* concept in that players must destroy bases rather than defend them. Targets are situated on a rotating planet, and players launch their attack via four immovable spaceships that are positioned in each corner of the screen. Moving a targeting crosshair with a trackball, players must destroy all the targets before their ships are destroyed.



Super Missile Command
Released: 1994
The Lynx has many underrated gems and this is one of them. This excellent update to *Missile Command* offers all the thrills and spills of the original arcade game, but also a few neat twists too. In addition to introducing new enemies

and updating the graphics rather nicely, by far the best upgrade to the game was a new power-up system whereby players were awarded money at the end of each stage, which could then be put towards specific power-ups that either boosted your missile capabilities or your defences. It's a solid follow-up that also featured a similarly decent update of *Asteroids* on the same cartridge.



Missile Command VR and 3D
Released: 1995
Missile Command 2 never got beyond the prototype stage as Atari presumably struggled with how best to extend the original concept. It would be 14 years before fans got an arcade follow-up, and this came by the unusual way of *Missile*

Command VR, which ambitiously took the core gameplay and, as its title implies, blasted it into the computer-generated world of virtual reality. Split into three stages, this sequel saw players trying to defend bases from hostile alien invaders. Virtuality, the game's developer, released the game for the Atari Jaguar as *Missile Command 3D*, where it's the only title compatible with the console's VR headset.



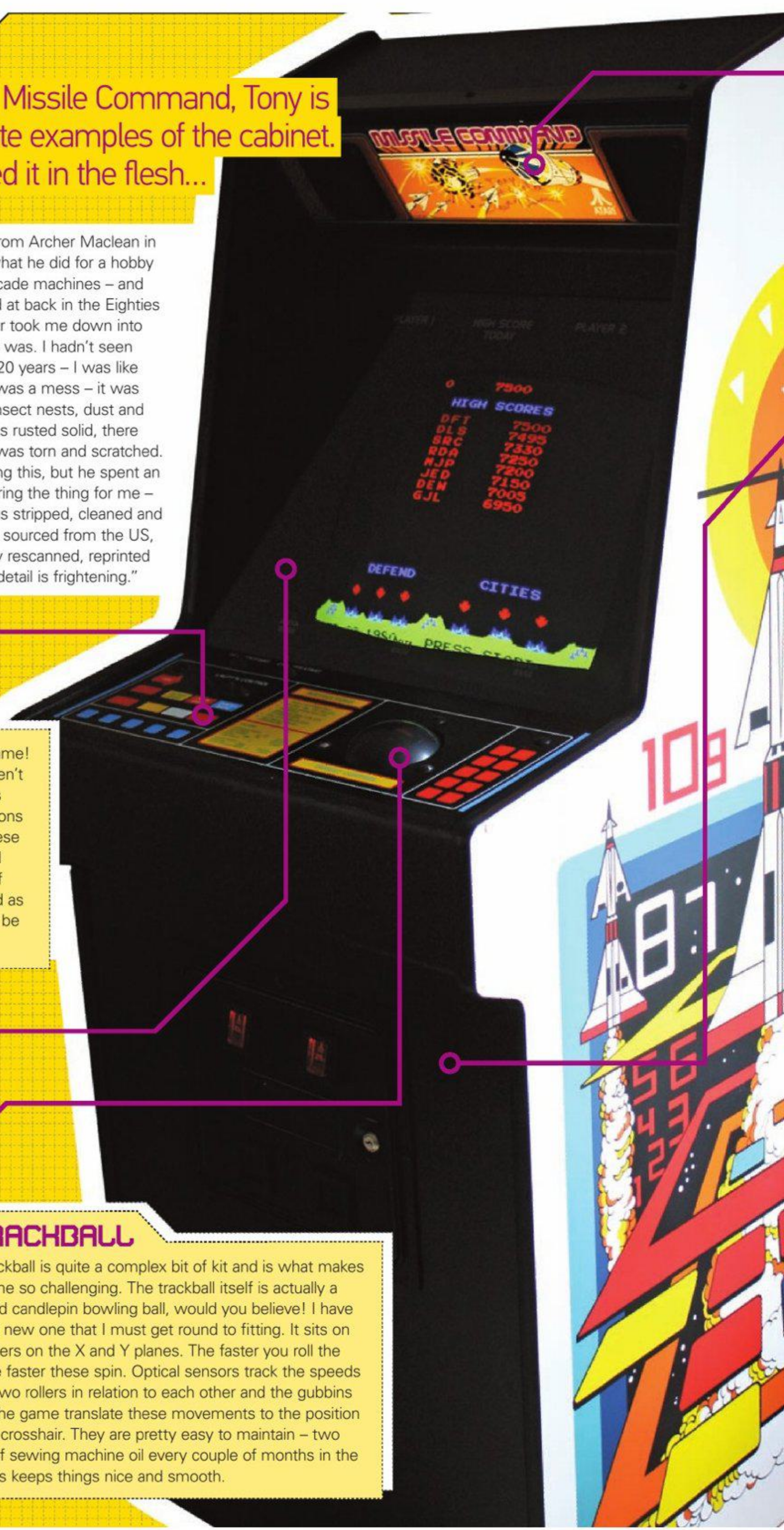
COIN-OP CAPEERS

the machine

As well as being the world champion at Missile Command, Tony is the owner of one of the most immaculate examples of the cabinet. And some of you might have even played it in the flesh...



"The machine was obtained from Archer Maclean in 2005. We were talking about what he did for a hobby – restoring and collecting old arcade machines – and this old game I was pretty good at back in the Eighties called *Missile Command*. Archer took me down into his arcade dungeon and there it was. I hadn't seen a machine in the flesh for over 20 years – I was like a kid in a candy shop. The cab was a mess – it was covered in concrete splashes, insect nests, dust and general debris. The trackball was rusted solid, there were no locks and the side art was torn and scratched. Archer won't thank me for saying this, but he spent an incredible amount of time restoring the thing for me – on and off for over a year! It was stripped, cleaned and photographed. New parts were sourced from the US, and the side art was completely rescanned, reprinted and reapplied. The attention to detail is frightening."



■ BUTTONS



Obviously a key element to the game! These are sealed switches that aren't made any more. The start buttons are illuminated in red; the fire buttons are standard. You can also find these buttons on the old Atari *Sprint* and *Asteroids* cabinets. Getting hold of replacements is really difficult, and as they are sealed units, they cannot be fixed. When they go, they go!

■ MONITOR

Standard 19-inch Wells Gardner monitor. Archer put a NOS one in during the restoration process. These raster monitors are becoming very difficult to source now. The bezel is actually smoked glass – again an idea Archer had, just to add his own signature to the restoration and the machine. This was custom made and cut at a glass factory, and had the lettering screen printed on. The bezels on standard machines are Perspex. Again, it just makes the cab a little different, but keeps it true to the original machine.

■ TRACKBALL

The trackball is quite a complex bit of kit and is what makes the game so challenging. The trackball itself is actually a standard candlepin bowling ball, would you believe! I have a brand new one that I must get round to fitting. It sits on two rollers on the X and Y planes. The faster you roll the ball, the faster these spin. Optical sensors track the speeds of the two rollers in relation to each other and the gubbins inside the game translate these movements to the position of your crosshair. They are pretty easy to maintain – two drops of sewing machine oil every couple of months in the bearings keeps things nice and smooth.

MARQUEE

Dave Theurer, the guy who wrote the game, is notoriously quiet and reclusive about his time at Atari. Luckily, I managed to get a lead, and via a friend, he agreed to sign some bits and pieces for me. I sent my marquee off in the post to him, and Dave very kindly signed it, as you can see. As far as I know, this is the only signed *Missile Command* marquee in the world, which makes my machine particularly unique.

COIN SLOTS

We've kept these to take original quarters – I think they could be adapted to take UK coins. I have 20 quarters dated from 1980 – I know that's pretty nerdy, but they were a gift from Walter Day – and the coin mechanisms do work fine, but I tend to keep the machine on freeplay for ease of use. If you look closely, you'll see that Archer did a particularly personal modification for me on the coin slots themselves...



RESTORATION

Archer believes that my cab is probably of better quality than those that rolled off the production line. It wasn't cheap, but then I felt I was investing in something special. He is particularly proud of the job he did – and rightly so. I've had it for six years, and despite being moved around a fair bit and two boys in the house, it's held up well. The community estimate that there are fewer than ten *Missile Command* uprights in the country right now, so it really is a piece of history. Your readers may have played it at one of the many retro shows it's been to.



developer Q&A

We speak to Rob Fulop, the man behind two of the Atari 2600's best conversions: *Space Invaders* and, of course, *Missile Command*



How were you involved with the 2600 port?

We had a brainstorming session to come up with possible new 2600 games. On the list were two very popular Atari coin-ops, *Missile Command* and *Asteroids*, both of which

were deemed impractical to pull off on the limited 2600 hardware. Over lunch, Brad Stewart started discussing various approaches to each game, and that lunch turned into a whiteboard-filled scribble-fest, after which we pitched the 2600 programming team our ideas about how both games could be done. We each were given 30 days to come up with a live 'kernel', which would display the main game elements on the screen.

Did you work with Dave Theurer on the project?

I had gotten to know Dave from the year before. Prior to my work on *Missile Command*, I had delivered a version of *Space Invaders* for the Atari 800 where I had decided to not copy the original, and my ears were ringing from the criticism that I received both from the market and my peers as a result. People just wanted the game they knew from the arcade, end of story. So when I sat down to make *Missile Command*, I decided that I would make as faithful a rendition as I possibly could. As the 2600 version was coming together, I would drop in and chat with Dave about the finer points of *Missile Command*. I remember looking at the original attack tables and the smart bomb algorithm. And, of course, the scoring system was a straight-out copy.

Did you ever receive feedback from him about the finished game? How did he feel about it?

The coin-op group was very doubtful that any sort of good game could be made on the Atari 2600. They had built all of their games on custom hardware with whatever amount of memory they needed to get the job done. I remember them being quite impressed when they played the finished game, not as much with my work, but with what was possible with the 2600 hardware. I think *Missile Command* and *Asteroids* changed people's perception of the 2600 as a development platform.

How long a deadline did you have and did any other staff work on it with you?

There was no official deadline, but it was assumed that a single game should take from 5-9 months. I think *Missile Command* was done in seven months.

What was the hardest thing about the Atari 2600 project, from a technical viewpoint?

Getting the right feel of the onslaught and figuring out how to balance the game with only one

available base instead of the three in the original coin-op. It is very easy to make a game like *Missile Command* overly difficult, and it is also pretty easy to make the game very easy to beat. The trick is to find the balance between the two and craft a 'difficulty ramp' that kept getting a little harder each time. *Missile Command* taught me all about the importance of creating a dedicated system that allows the programmer to easily tweak a lot of variables. There was actually a development version of the game where I could change values on screen while the game was running. This was invaluable in finding the right combination of speeds and timing variables so that each level could deliver the challenge that was needed.

Were you happy with the final result?

Yeah, I remember adding the final explosion at the end, after the player loses, and playing it through and really feeling good about it.

Can you tell us any interesting anecdotes about your time working on the game?

One Friday, I had gone out to a long Mexican lunch with a bunch of fellow programmers, which included a few rounds of margaritas. This was a typical Friday activity, although it was unusual for me to drink, since I wasn't a big fan of drinking during the day. But for whatever reason this day I had consumed half a pitcher or so of strong margaritas.

So now I basically stumble back to work at 2:15 in the afternoon, flat-out drunk. I sat down at my workstation and had the presence of mind to decide that, given my condition, it would be a good time to make a backup of my current version, which hadn't been backed up in a few weeks – all of our work was kept on eight-inch floppy disks at the time. So I dug out the *Missile Command* backup disc and put it in the spare drive next to my original development disk, which I worked off every day. Then I promptly copied my two-week-old backup version over my current version, effectively throwing away my past two weeks of work in one single drunken keystroke. I was so disgusted! Needless to say, I came in at 7:30am the next morning and worked all day Saturday and Sunday to restore the game to its pre-margarita state. Along the way I swatted a few nasty bugs that had crept into the code somehow, and overall improved a lot of the game's performance. This is typical of what happens whenever I've blown away something in a game and had to revert to an older version. Rewriting the code always improves it.

Finally, have you played any other conversions of the game? How do you think yours holds up?

I really haven't played many other versions of *Missile Command* other than my own, and the original obviously. ✨

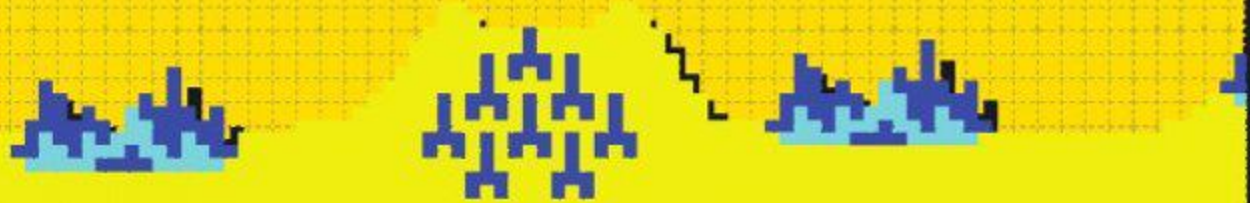




COIN-OP CAPEERS

the conversions

Appearing at a time when clones were commonplace in the market, there is an absolutely ridiculous number of official and unofficial ports of *Missile Command*. Join us, then, as we compare all the ports to carry the Atari seal of approval



01. Atari 8-Bit [Best Version]

The version that Atari put out for its 400/800 line of computers was a great effort that featured a few nice improvements over the 2600 port. This included vapour trails being left behind the enemy rockets, and the inclusion of the bombers and satellite enemies. Sadly, like all of Atari's 8-bit *Missile*

Command ports, this version was missing a full complement of missile silos, limiting the depth of its gameplay. Regardless, this is still an impressive-looking conversion. Incidentally, this version also appeared as a built-in game for Atari's ill-fated XEGS console.

02. Atari 2600

Even though the Atari 2600 version is missing

two silo bases, it still plays a faithful game of *Missile Command*, and what it takes with one hand – there are no bombers or satellites – it gives back with the other by allowing players to influence the behaviour of the missiles and speed of the target cursor. This port was also the first to do away with the Cold War setting, replacing it with a less contentious alien invasion

scenario, as detailed in the game's manual.

03. Atari 5200

The 5200 also received a decent conversion of *Missile Command* that featured a number of improvements over the 2600 port, although that is probably to be expected. As well as a crisper and more colourful nuclear war, this version also included the bombers

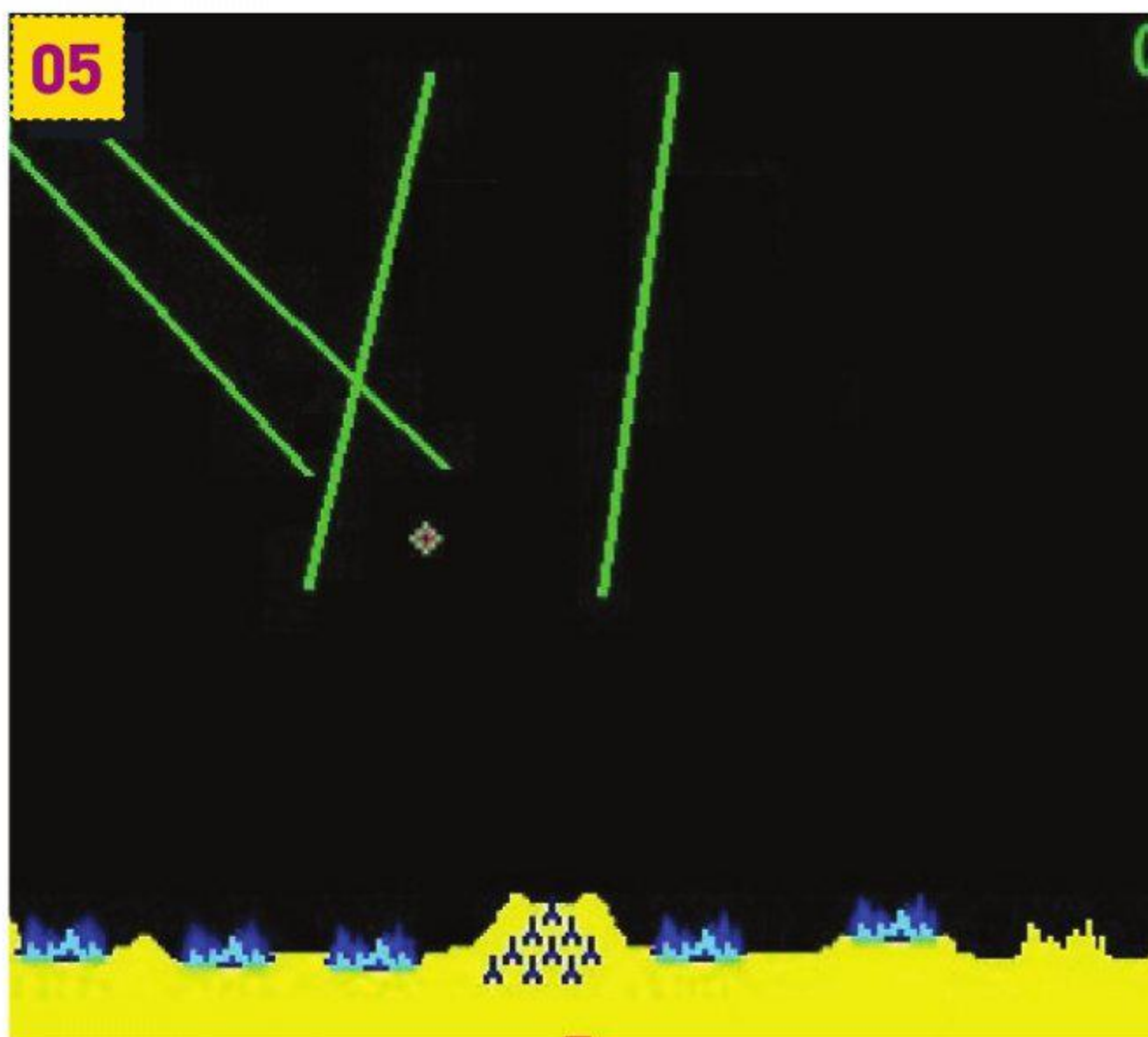
and satellite enemies from the arcade game. Sadly, players still only had a single base with which to defend their six cities. As such, this version feels more like an enhancement of the Atari 2600 port rather than a more faithful arcade conversion.

04. PC and PlayStation

This game was an official remake from Hasbro. It

featured both a classic and 'ultimate' mode that swapped out the silos for spaceships and also added alien enemies, CG cut-scenes, bosses, and allowed players to spend points earned on purchasing shields and upgrading their missiles. The PC version is the one to play as it supports mouse controls. Essentially a baby trackball controller that's been

SPECIAL THANKS TO TONY TEMPLE FOR HIS HELP AND ASSISTANCE THROUGHOUT THIS ARTICLE



turned on its head and given buttons for feet, it's a control system that, as you would expect, works quite well for dragging cursors around the screen.

05. iPhone

Atari also released, but then oddly pulled, a decent iOS version of *Missile Command* for Apple's devices. Due to the immediate nature of

touch-screen controls and its automatic silo selection, the game takes a while to get challenging, but it's still a good port. The game featured two modes, classic and ultra, with the latter throwing in new enemies and cleaning up the visuals. Atari recently plugged the gap left by its mysterious disappearance with an update called *Missile Command Ultra*. This

version features redrawn graphics, allows you to dual-wield silos and includes a two-player head-to-head mode. Sadly no classic mode, though.

06. Xbox 360

As we're clearly happy to fill this page with late adaptations that push the very definition of the word 'conversion', we had to include the Xbox 360 port of *Missile Command*,

which is official, is simply called *Missile Command*, and also features an obligatory graphically enhanced remake – one that supplants the missile silos with electricity pylons that direct energy into the sky. Sacrilege. The Live Arcade version does feature a classic mode that attempts to replicate the one-button-to-one-silo control system with the face buttons

on the Xbox controller – it's just a crying shame movement with the analogue stick isn't all that fantastic.

07. Game Boy Color [Worst Version]

After purchasing Atari properties, Hasbro released a portable conversion of *Missile Command* for the Game Boy Color. Sadly, it was a

terrible version. Here, you command two missile silos, actuated by the A and B buttons, while the target cursor is steered using the D-pad. Sadly, though, the visuals, animation and gameplay are where the game falls down. The explosions flicker, hang in the sky for ages and are too tiny. It makes the action feel far too imprecise – a big no-no for *Missile Command*.