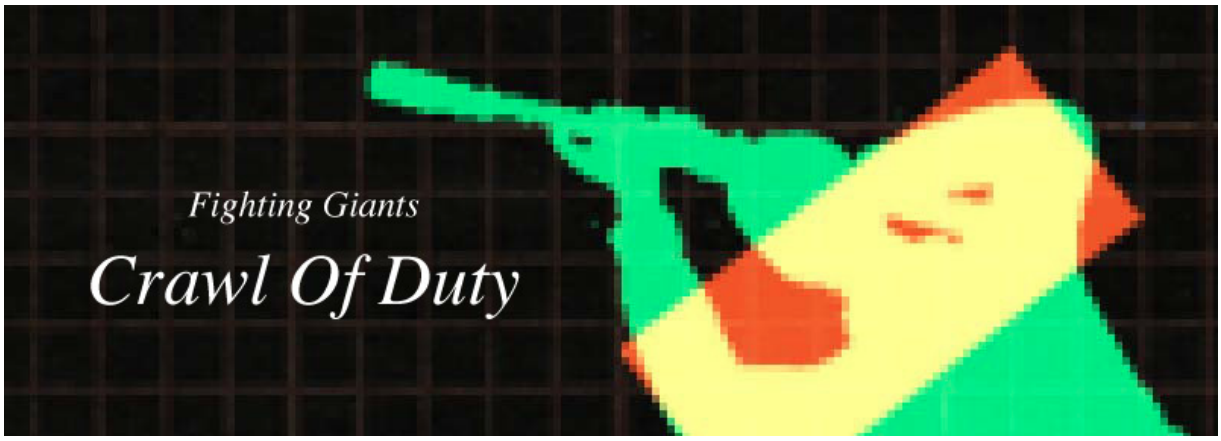
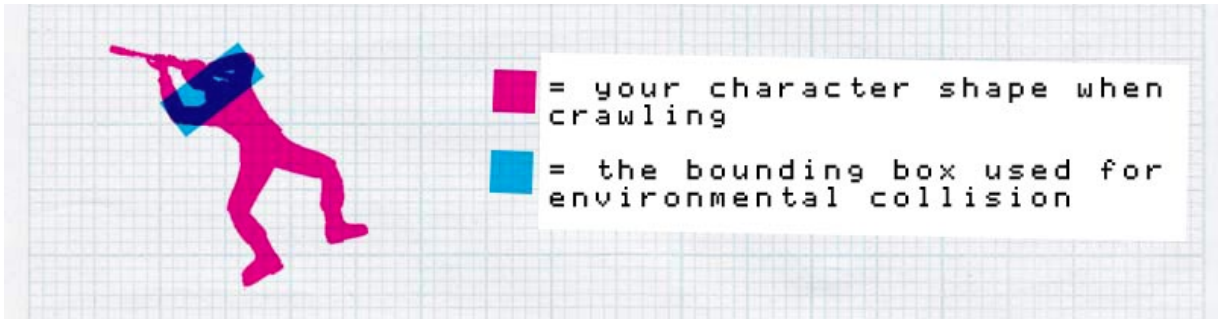
game graphics [http://howtonotsuckatgamedesign.com/?p=4130] , February 28, 2012 [http://howtonotsuckatgamedesign.com/?p=4130] by Anjin Anhut.



There is a weird and funny conceptual problem in modern military shooters, like Modern Warfare and Battlefield, regarding broken size relations when your character is crawling. Here is photographic evidence and an educated guess about why that happens.

Okay, this is how you do it. You need a modern shooter, try CoD Black Ops or Battlefield3, and you need some corpses of downed opponents in front of you. Now crawl, lie flat on the ground, then shoot a few times while crawling. Your hands and your gun should appear. Now you can crawl up to one of the corpses. Closer and closer until single body parts fill the screen. All this while your hand and gun stay the same size. (see the evidence below)

Has nobody noticed this? And it is not a graphics bug, it's a conceptual error. When a grown person is lying on the ground, he or she covers a lot of space and becomes a fairly large object to maneuver around. But to keep the gameplay flowing the designers decided to keep a fairly slim bounding box for environmental collision.



I understand why they did it.

It allows for example to effortlessly turn around in air ducts, which is comfortable but unrealistic. A crawling human in an air duct turns as well as a car on a single-lane road. You would need to crawl to the next t-junction, crawl into the duct to your side and crawl back out again reversed. All sorts of walkable spaces need to be accessible for standing characters as much as for crawling ones or one would need to make crawling a purely context sensitive affair.

Quick note:
With the shot down enemy corpses another issue adds to the weird effect. In germany at least. Rag doll functionality on corpses often get censored by the USK before release. This means corpses have no collision detection what so ever.

Is there no way to fix this? How about retracting the character's gun arm, whenever he is moving in a crawling position and only displaying when he shoots. I mean a man needs his arms to crawl. Being able to aim, shoot and crawl at the same time never made any sense.

Anyway, I find it hilarious to have graphic-obsessed games like the Modern Warfare series repeatedly fall pray to such a silly display error.
Cheers.

Battlefield 3 EA

CoD Black Ops Activision

CoD Black Ops Activision

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5 THOUGHTS ON "FIGHTING GIANTS – CRAWL OF DUTY"

jack monahan
on **January 12, 2013 at 6:36 am** said:

Not a bad guess, but no. This fairly common graphical artifact has nothing to do with the player's bounding box, and is not "conceptual" in the least.

From HL2 and on, a majority of first person shooters have rendered the first person hands/gun separately from the world. Why do this? Because it allows them to tweak player FOV without distorting the appearance of the gun, and vice versa–an artist can pull the gun into a tighter FOV (often <45 degrees) while the world FOV remains higher. They're rendered in different passes. (People get up in arms for console games having lower FOVs than PC games, but it is an important consideration: this "window" into the world is a closer distance with a computer screen at a desk, and typically a further distance from a tv to a couch.)

This bypasses all kinds of problems that would come from building the game with the player actually looking at a gun that is drawn in the world–clipping problems chief among them. If the gun were really "in the world", when you run up against a wall, the gun would clip through it. (Which is why the games that don't use the separate draw pass cheat, like Crysis, you see your player character pull the gun up against their chest, so as to allow the player to get as close to a wall or to cover as they wish to, but without the gun clipping.)

This works fine until the player is able to walk right up to an NPC or, even more obviously when the player crawls up to a character on the ground. The mismatch between the world FOV and the weapon FOV becomes overwhelmingly obvious, to the point of distraction as you have captured in these screenshots.

But that's the most common solution. FOV is a constant headache maker for FPS games–do you go wider, for a more realistic peripheral vision, at the expense of feeling close to characters? Wider FOVs change the apparent distance between the player and an adjacent NPC. Which is why you get that kludge in Elder Scroll and latter day Fallout games of zooming in on a person's face when you initiate dialogue. Not because you're not already standing fairly close to them, you are–but with the FOV it means the character is only some portion of the screen, even if you're

standing toe to toe. The zoom approximates the perceptual distance of focusing on a person's face while they are talking.

admin
on **January 12, 2013 at 9:34 am** said:

Hey, thanks for the additional info. Yes, the fact that the gun (or the hands and other player object) are not part of the game world, more like a GUI element, certainly is to blame here as well. Thanks for the detailed response. Cheers.

Dennis
on **March 17, 2012 at 10:32 am** said:

On the plus-side, you get some pretty interesting screenshots out of it. That was fascinating, thank you!

Anjin Anhut
on **March 17, 2012 at 11:27 am** said:

@Dennis Ha, yeah, the entertainment value of such bizarro game world occurrences is truly very high. ;D

Phobosis
on **March 2, 2012 at 8:11 am** said:

Pretty fair player model collision was implemented in Arma 2. It was funny how you sometimes had to crouch instead of crawl, or else you wouldn't be able to rotate with your legs stuck in the doorway. Unluckily, without full body control the player model still acted awkward and counter-intuitive, just in different way.