Can Xbox One continue on as gaming's "low-end" console option?



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- *Dirt 5*'s racing doesn't immediately look like a step above current-gen consoles, but its trailer did emphasize reflections and particle effects, which the Xbox Series X may boost.
- *Bright Memory Infinite* is the semi-sequel to a Chinese first-person combat game made by a single developer. Its premiere footage was a blurry mess of polished, high-speed combat, full of Matrix-style time manipulation.
- *Scorn*. What exactly is *Scorn*? Its footage didn't make its gameplay clear, as it lingered over haunting imagery straight out of an HR Giger production.

- More *Scorn*.
- We caught a brief glimpse in *Scorn* of some dramatic human eyes trapped in an exoskeleton of sorts.
- A blink-and-you'd-miss-it snippet of what *Madden NFL 21* will look like on Xbox Series X.
- *Chorus*. Serious vibes of Remedy's *Control* here.
- Dramatic zoom of the hero's realistic face in *Chorus*.
- *Chorus* appears to combine spaceship combat and run-and-battle adventuring.
- A vague tease of whatever *Call of the Sea*'s puzzle gameplay will be.
- Will *Call of the Sea* be drawn up in cartoony style? It's unclear.

For months now, Microsoft has been talking up the raw power increase coming to consoles courtesy of the Xbox Series X. At the same time, though, Microsoft is encouraging internal and external studios to make Series X games that continue to work on seven-year-old Xbox One hardware as well.

"As our content comes out over the next year, two years, all of our games, sort of like PC, will play up and down that family of devices," head of Xbox Game Studios Matt Booty said in a January interview with MCV. "We want to make sure that if someone invests in Xbox between now and [Series X] that they feel that they made a good investment and that we're committed to them with content."

Does that mean developers will have to hold back their truly "next-generation" ideas to accommodate players with outdated consoles? Microsoft's Head of Xbox Phil Spencer doesn't think so. In an interview with GamesIndustry.biz last week, Spencer also referenced the PC gaming ecosystem as an analogy to explain how support for the Xbox One would continue to work:

> *I just look at Windows. It's almost certain if the developer is building a Windows version of their game, then the most powerful and highest fidelity version is the PC version. You*

can even see that with some of our first-party console games going to PC, even from our competitors, that the richest version is the PC version. Yet the PC ecosystem is the most diverse when it comes to hardware, when you think about the CPUs and GPUs from years ago that are there.

Is the Xbox One akin to a 2013 PC?

For PC gamers, there's some inherent comfort in the idea of the Xbox One as the new "minimum spec" target for developers in the console space. But that idea got us thinking: would seven-year-old hardware still be considered minimally acceptable in the PC gaming world?

To test that theory, we took a trip down memory lane and revisited our November 2013 Ars system guide, which gave our best recommendations for low-, medium-, and high-end PC builds at the time. For our relative Xbox One comparison, we used the midrange "Hot Rod" box, which had a Radeon R9 280X GPU and 8GB of RAM. That system cost about $1,400 in late 2013, or closer to $1,000 without the monitor, speakers, mouse, and keyboard.

To see if that system would hold up today, we compared it to the minimum and recommended specs for a variety of recent and upcoming high-end PC games. To make relative comparisons between our build and today's developer-suggested specs, we compared the clock-speed and number of cores for the CPUs and use 3DMark's "Fire Strike" benchmark scores for the GPUs. For RAM, we simply compared the amounts directly.

Minimum specs for modern games vs. 2013 Ars "Hot Rod" build

CPU	*Clock	*Cores	GPU	*3DMark	RAM	
Ars 2013 system	**i5-4570**	**3.2Ghz**	4	**R9 280X**	**8221**	**8GB**
Resident Evil 3	i5-4460	3.2Ghz	4	R7 260X	3481	8GB

CPU	*Clock	*Cores	GPU	*3DMark	RAM	
Doom Eternal	i5	3.3Ghz	4	R9 280/290/470	7325	8GB
Ori and the Will of the Wisps	i5-4460	3.2Ghz	4	R7 370	8053	8GB
Death Stranding	i5-3470	3.2Ghz	4	RX 560	6522	8GB
Control	i5-4690	3.5Ghz	4	R9 280X	8221	8GB
COD: Warzone	i3-4340	3.6Ghz	2	HD 7950	7349	8GB
F1 2020	i3-2130	3.4Ghz	2	HD7750	2095	8GB
Horizon Zero Dawn	i5-2500K	3.3Ghz	4	R9 290	11156	8GB
Half-Life Alyx	i5-5700	2.6Ghz	4	RX 580	10570	12GB

The results of this quick-and-dirty analysis show that Spencer is more or less correct; PC developers are still tuning their games to midrange hardware from 2013 when it comes to "minimum" specs. Games from *Doom Eternal* to *Horizon Zero Dawn* only require the 8GB of RAM and i5 CPU class that we recommended for our build way back then. In terms of GPUs, the R9 280X we recommended gets a score of 8221 from 3dMark's Fire Strike, which meets or surpasses the 3DMark scores of the "minimum" GPUs needed for the games we looked at.

The one major exception to this general rule is virtual reality. A high-end VR game like *Half-Life Alyx* requires a full 12GB of RAM and a Radeon RX 580, both of which easily outclass our mid-range 2013 build. But if you're investing in tethered virtual reality these days, you're probably not content with a circa-2013 PC tower anyway.

Recommended specs for modern games vs. 2013 Ars "Hot Rod" build

CPU	*Clock	*Cores	GPU	*3DMark	RAM	
Ars 2013 system	**i5-4570**	**3.2Ghz**	**4**	**R9 280X**	**8221**	**8GB**

CPU	*Clock	*Cores	GPU	*3DMark	RAM	
Resident Evil 3	i7-3770	3.4Ghz	4	RX 480	11353	8GB
Doom Eternal	i7-6700K	4Ghz	4	RX 480	11353	8GB
Ori and the Will of the Wisps	i5-6600K	3.5Ghz	4	RX 570	13194	8GB
Death Stranding	i7-3770	3.4Ghz	4	RX 590	14037	8GB
Control	i5-7600K	3.8Ghz	4	RX 580	11564	16GB
COD: Warzone	i7-9700K	3.6Ghz	8	R9 390 / 580	10420	16GB
F1 2020	i5-9600K	3.7Ghz	6	RX 590	14037	16GB
Horizon Zero Dawn	i7-4770K	3.5Ghz	4	RX 580	10570	16GB

While our seven-year-old system is still minimally acceptable for PC gaming, it is well below the “recommended” standard most developers are setting for modern titles. Four of the eight games we looked at now suggest 16GB of RAM as a recommended spec, for instance, rather than the 8GB that sufficed in 2013. And the i5 processor in our old build is a bit underpowered compared to the i7 processors that are recommended these days (though that difference might not be very noticeable for games that aren’t CPU-limited).

That 8221 3DMark score for our R9 280X isn’t looking that great these days, either. High-end games today recommend GPUs that generally score in the 10,000 to 14,000 range on that benchmark. Trying to get even midrange performance from our seven-year-old GPU on today’s titles is going to be a struggle, to say the least.

What it means for Xbox

Just as a seven-year-old “average” PC can still get over the bar for “minimal” modern PC gaming, an Xbox One should still serve as a minimal console gaming solution for the time being. And while Xbox One versions of new titles won’t be able to

take advantage of advances like the Series X's Velocity Architecture, developers should be able to target the older hardware for now.

The question, then, becomes what the future will hold. Our 2013 gaming rig will almost certainly fail to hit developers' minimum spec targets sometime in the next few years. Similarly, supporting the aging Xbox One hardware will start to look like a pretty silly idea for console game developers sometime in the near future, no matter how much Microsoft encourages cross-generational compatibility.

Spencer acknowledged this to some extent in his recent GI.biz interview:

> *Yes, every developer is going to find a line and say that this is the hardware that I am going to support, but the diversity of hardware choice in PC has not held back the highest fidelity PC games on the market. The highest fidelity PC games rival anything that anybody has ever seen in video games. So this idea that developers don't know how to build games, or game engines, or ecosystems, that work across a set of hardware… there's a proof point in PC that shows that's not the case.*

Of course, once our 2013 PC becomes more or less "obsolete" for gaming, the owner can simply add more RAM or a new GPU for a relatively cheap service upgrade that could last for years. In the case of the Xbox One, gamers instead will have to start over with a relatively high-end new Series X. The Xbox One X could serve as a cheaper stopgap, perhaps, but Microsoft's recent discontinuation of that mid-generation hardware suggests it doesn't want customers considering that upgrade option for long.

All told, the console upgrade cycle has always worked something like this, with older hardware slowly phased out in favor of a new de facto standard over a few years. With the

extreme cross-generational focus in the current Xbox family, though, the analogies to the multi-level PC gaming space are getting more and more explicit.

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