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Stabilization was improved on Hero6.

GOPRO HERO6 BLACK

**A TWICE AS
POWERFUL
OPTION TO
THE HERO5**

When GoPro recently held a launch event, I was admittedly curious about what news they were going to share. Fusion had been announced a few months earlier, with few details, and I was interested in what else we could expect, as well as from the Hero6? As it turned out, there was quite a bit of news on Hero6. The most important features include double frame rates on all modes down to 1080, which means 4K/60, 2.7K/120 and 1080/240. Stabilization was dramatically improved, and with only a five percent crop vs. 10 percent on the Hero5. Stabilization is also available in 4K now,

up to 30fps, in 2.7K up to 60fps and 1080 up to 120fps. All of these added capabilities are due to the much faster GP1 processor. Other improvements include higher dynamic range, HDR still images and a zoom function.

HERO6 REAL WORLD TESTING AND USAGE

With regard to the Hero6 Black, it is immediately obvious how much more dynamic range the camera has. In shots where the Hero5 Black blows out on the sky or clouds, you maintain detail with the Hero6. But other things aren't as obvious without a comparison. For

example, the new image stabilization is something I was very interested in. Just the fact that you can actually get stabilization in 4K mode is a big deal, but I wanted to truly get a feel for how good the stabilization is.

STABILIZATION

To get the most useful comparison, I set up a Hero5 in a Karma Grip (gimbal stabilizer), and mounted it to one strap on my backpack. I then mounted a Hero5 next to the Hero6 both with stabilization set on, hooked up to an improvised dual mount on the other shoulder strap. All cameras were in 2.7K/30 mode. This



Hero6 features a higher dynamic range.

would show the difference between the two stabilizations, compared to a gimbal-stabilized camera.

The results were interesting. There is no doubt that the stabilization is considerably improved from the older stabilization, and has added roll stabilization. You still get little jerky movements when the camera is bumped too much, likely when you reach the edge of the five percent buffer area, where it does a three-frame transition to re-center the motion, so you don't get that ultra smooth motion of a gimbal. But, if you aren't attached to a hard mount, and instead use your arm as a stabilizer, and try to walk smoothly, you get a look that is hard to distinguish from a gimbal stabilizer.

ZOOM

I have wanted a zoom option for GoPro cameras for years, and the company finally added it — kind of. When I read Touch Zoom, I thought this would work like the zoom on your phone's camera, but I couldn't figure out how to use it. It turns out, it isn't a pinch zoom like I was hoping for, it is a slider-based zoom that is accessed in your FOV menu, and is only available in some modes, like 2.7K Linear and Wide, but not Superview. In fact, the entire FOV options have changed, so Narrow and Medium don't exist any more, but are replaced by Linear and Wide with zooms. This is a good thing, though, because they zoom to tighter than the Narrow option, and you have the zoom option in the very useful Linear mode, which is undistorted. It looks to me to be a 2X zoom, so it's a decent zoom, and gives you the equivalent of a narrow FOV in 2.7K, which didn't exist on the Hero5. The only disappointing aspect is that you can't zoom while recording.

VITAL STATS

MANUFACTURER: GoPro

PRODUCT: Hero6 Black

PRICE: \$499.00

WEBSITE: www.gopro.com

- Double frame rates on all modes down to 1080
- Improved stabilization
- Higher dynamic range

CODECS AND CAVEATS

There is also a change in codecs for some of the higher quality modes, which now use HEVC, or H.265 for those unfamiliar with HEVC. This is a more efficient codec than H.264 (MPEG4), but also requires considerably more processing power, and will not play back on anything but the newest mobile devices and operating systems. It requires OS11 on the Mac side, and Windows 10 on the PC side. So, there is a caveat. At the same time, something like this was necessary to be able to handle 4K/60 and 2.7K/120 without going to really high data rates, which would affect memory card capacity, and would probably require faster memory.

HERO6 IMPRESSIONS

The Hero6 has superior dynamic range, doubled frame rates, stabilization in 4K, much better stabilization, zoom in linear mode (though not while recording), HDR photo capabilities and HEVC. It produces really good images. I really like the Hero6 and I definitely think it is worth the extra \$100, but if someone asked me if they should sell their Hero5 to get a Hero6, that would entirely depend on their need for the advanced capabilities, as well as how powerful their computer or smartphone is. So, for professionals, I would say definitely. For your average consumer, not necessarily.

LITTLE THINGS

There are a few smaller differences that are also of interest: Superwide in 4K, Wake on Voice command, Minimum ISO setting, ISO 100, 200 and 300. There's also 5GHz WiFi for 3X faster transfers. And added accelerometer and gyroscope to compliment the GPS so you can display more gauge info in Quik.

A QUICK LOOK AT FUSION & KARMA DRONE

I only got to play with the Fusion a little bit, but I'm really excited about this new 360-degree camera. It has two cameras — one on the front, and one on the back — each of which shoots 210 degrees, so there is overlap. It does live stitching, so you can view it on your phone, and aim your phone in different directions to see the entire 360-degree view. So, it captures everything, but what is really cool about it, is Over Capture, which allows you to use your phone to frame the action you want to export, and follow the action while you play back the recorded 360-degree video. What that means is, you get unlimited tries to perfectly follow the action of the shot, in post. It's kind of a 'set it up and don't worry about it' approach to filming. Just put the camera where it will capture all of the action, and you act as the camera operator when you watch the video back, using your phone as the monitor to follow the action whichever way you move the phone. I honestly can't wait to add this to my camera arsenal.

Now, let's get into the changes with the Karma Drone. Finally GoPro has added Follow Me functionality to the drone, in two varieties, Mimic and Leash. The Follow Me function works by locking onto the controller's location. In Mimic mode, it makes the same movements as the drone operator. This is useful, if you want the Karma to track beside you, or even lead you. It's very simple, you just set up where you want the drone in relation to you, and then tell it to follow you. It requires you to have the Karma at least 50-feet or so off the ground, I presume to avoid obstacles. In leash mode, the drone will drop behind you. So, if you start with it in front of you, it will allow you to cross under it, and it will then follow behind you. This is really useful because it will follow your path, keeping you in the frame.

It has some other cool features like Watch Me, which might be really useful in situations where you don't want the drone to move, but you want it to follow your actions. They also now allow you to point the camera up 15 degrees above the horizon, which opens up more options for more dynamic shots.

ADVANCED CABLE CAM

But by far, the most useful addition in my experience, is a drastically



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The GoPro Hero6 is twice as powerful as its predecessor Hero5.

improved Cable Cam mode. In the past, you set a beginning point and an end point and it would ping pong back and forth between those two points, with the only control being the ability to adjust the speed. Now, you can set up to 10 points for your path, and it makes a spline path between these. This means you can set up very dynamic shots, even if you aren't a seasoned drone operator. Just fly to your starting point, aim the drone the direction you want it to be facing, adjust your camera tilt, and set your first point. Then fly to the next point, and repeat the process. You can make the drone begin the shot facing you, and then fly backwards away from you, then turn 180 degrees and continue to fly away, then circle back around to you, or whatever. It also now stops at the end of the flight path if you leave that setting turned on. The only caveat I have with regard to this is that you need to leave a little leeway since I have had it drift a little after multiple passes. In one instance, my shots that were flying about four to five feet above the ground when I first set the points, where skimming closer to two-feet by the third pass, so it's probably a good idea to give yourself a few extra feet of buffer, just to be safe. This may have been based on the quality of the GPS signal I was getting.

With these new improvements to

the Karma, it is now a completely different machine in terms of usability. I have been getting comfortable flying the Karma for a while, but trying to get controlled shots was a little tricky. Where before, I was using the Cable Cam to do a dolly shot while filming a bike, and having to ride the speed slider to keep pace, now I can just set up the shot and use the Follow Me flight path in Mimic mode. This is a game changer in terms of setup time, functionality and ease of use. And advanced controls for Cable Cam open up a whole world of possibilities for extremely dynamic shots.

CONCLUSION

Although the Hero6 camera is virtually indistinguishable from the GoPro Hero5 on the outside, it is twice as powerful on the inside, with some really welcome advances that make it a really great camera. The Karma Drone (\$799) has finally come into its own with real, functional flight paths and coupled with a Hero6, may actually put it in competition with the Phantom 4 Pro at least from an image quality standpoint with 4K/60, increased dynamic range, and HEVC (H.265) codec. The Fusion (\$699) is also extremely exciting, and I'm looking forward to playing with it in the future, as it redefines how I would approach certain kinds of shots, with that camera as an option. **P**

