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In Full Color

2nd Edition

GoPro® Cameras

for dummies®
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Covers all GoPro cameras including the HERO5

Help with setting your GoPro to shoot better video

Steps for editing and sharing your work

John Carucci

GoPro® Cameras

for dummies®
A Wiley Brand

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2nd Edition

by John Carucci

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GoPro® Cameras For Dummies®, 2nd Edition

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Introduction

Compared with traditional camcorders, the GoPro is a superhero, able to leap tall buildings in a single . . . er, smartphone click. Your first inclination when hearing about such a unique camera is to think it costs a lot of money, but that's not the case. The GoPro is cheap. Very cheap.

The GoPro challenges conventional notions of where you can put a camcorder and continually challenges users to find new and exciting places to capture movies and photographs. You can control the camera from a distance through an app on your smartphone, thus keeping you out of harm's way. It's waterproof too, so you can capture video footage under the wettest of circumstances, submerging the camera to record stunning underwater sequences right out of the box.

The capability to work in weird places would go only so far if the GoPro's image quality were subpar. In fact, the GoPro can capture 4K video at a rate of up to 30 frames per second (fps), depending on the model, so you can capture unique high-quality video at an affordable price. High-definition (HD) offers even higher frame rates, up to 240 fps.

This rugged little camera can go anyplace and produce exciting new perspectives. It works for everyone from amateurs to pros. Families use it to document their daily lives; students experiment with it; photographers use it to supplement camcorder footage. GoPro has even spread to the professional arena, with an increasing presence in broadcast news programs, movies, and television shows.

I've had a blast making movies and playing with my GoPro, so I hope you'll think that I'm the right dummy to introduce you to this camera.

About This Book

The new and improved *GoPro Cameras For Dummies* helps you make sense of GoPro moviemaking. Through my experience as a still photographer and a television producer, I describe how to use your GoPro to make movies, take still images, and make time-lapse sequences with fresh techniques and the latest cameras in the line.

Think of this book as a quick information stop where you can find out what you need and get back to work. It includes cinematic tips, effects that will impress your audience, advice on effective edits, and even some cool uses for your GoPro.

I wrote this book for people who have different proficiency levels but have similar ambition for making compelling movies and pictures. Some readers have already made their mark in conventional video production and want to add one more weapon to their arsenal. Others come from the still-photography sector and are fascinated by the GoPro's still and time-lapse capabilities. Still photography is an untapped resource for GoPro, thanks to its ultra-wide-angle lens and unlimited mounting ability. Simply put, it's a great camera for capturing images with a unique perspective. Hobbyists, family documentarians, students, and now artists are all looking to understand this new, exciting phenomenon. The goal of this book is to make sure that everyone gets the knowledge he or she needs to use the GoPro.

How This Book is Organized

GoPro Cameras For Dummies is divided into four parts; each part details the phases of understanding GoPro moviemaking as effectively as possible. You will no doubt have a preference for a particular area. You may relish the section that pertains to understanding the camera, or you may skip ahead to the filmmaking techniques or the cool places you can use a GoPro.

Part 1: Getting Started with Your GoPro Camera

Part 1 provides the reader with a swift overview and capability of the updated GoPro camera system. Whether you're a beginner looking to make movies with this unique camera, a working professional creating fresh visual perspectives for your movie or segment, or anyone in between, this group of chapters covers the newest GoPro models, types of users, and important accessories for making movies.

Part 2: Moviemaking Technique

If you think the chariot scene in the classic film *Ben-Hur* was spectacular, imagine if they had GoPros back then. The GoPro changes the way you shoot action, yet regardless of the device or camera, the language of cinema remains the most important aspect for making a movie. The following chapters explain filmmaking

technique specific to the camera so you can produce an impressive movie with your GoPro HERO.

Part 3: Movies Are Made in Postproduction

Shooting video is only the first part of the process, unless you want to simply play your raw footage and bore your audience with a few moments of the good stuff, and the rest the warts and blemishes. Editing lets you show the viewer exactly what you want, thus creating the "wow" factor. This section covers editing your movie on a computer loaded with GoPro Studio editing software.

Part 4: The Part of Tens

The Dummies version of a top ten list will provide insight into fun places to mount your GoPro, professional applications, and making your movies and pictures better by avoiding the pitfalls of using it.

Icons Used in This Book

What's a *For Dummies* book without icons pointing out great information that's sure to help you along your way? In this section, I briefly describe the icons used in this book.

REMEMBER

This icon marks a generally interesting and useful fact — something you may want to remember for later use.

TIP

This icon points out helpful suggestions and useful nuggets of information.

TECHNICAL STUFF

When you see this icon, you know that techie stuff is nearby. If you're not feeling very techie, feel free to skip it.

WARNING

The Warning icon highlights lurking danger. With this icon, I'm telling you to pay attention and proceed with caution.

Beyond the Book

Like every *For Dummies* book, this one comes with a free Cheat Sheet that brings together some of the most commonly needed information for people learning to use, in this case, GoPro cameras. To get the Cheat Sheet, head for www.dummies.com and enter **GoPro Cameras For Dummies 2nd Edition Cheat Sheet** in the Search box.

1 Getting Started with Your GoPro Camera

IN THIS PART . . .

Understand the GoPro camera.

See what you need to get started.

Find the right mount.

Choose the right accessory.

IN THIS CHAPTER

- Discovering GoPro's magic
- Finding out what GoPro can do
- Comparing the different models
- Working with the GoPro apps

Chapter 1
Getting to Know GoPro

You've probably heard the old saying, "Good things come in small packages." Sometimes it's true, as in the case of a diamond ring. That sparkly rock is small, and many people would agree that it's good. But a mosquito, which is smaller than a diamond, isn't good at all, especially on a warm summer evening.

Small cameras rarely solicit as much disdain as mosquitoes do. Most of us accept the compromise of function for size, understanding that it's acceptable for a camera to have less quality and fewer features in exchange for traveling well.

The GoPro, however, shatters that compromise like a rock on a plate-glass window. This pint-size wonder not only fits in the palm of your hand, but also easily mounts anywhere. Put it on a bicycle helmet to capture the rider's perspective. Mount it on a surfboard and not worry about frying the electronics, thanks to its watertight housing. How about mounting it on an inexpensive remote-control drone (more appropriately known here as a quadcopter) and recording overhead footage and something that was out of the realm of possibility for consumers a few short years ago? (Check local ordinances first so you don't fly your airship too close to a restricted area or violate privacy and security of others. More on that in Chapter 6.)

Introducing the GoPro

The GoPro is a pint-size, consumer-priced camcorder that yields professional results and does lots of cool stuff thanks to its Wi-Fi capability, superior performance, and extreme portability.

The GoPro doesn't take up much space, so it's easy to pack, carry, and mount in interesting places. The most feature-rich model, the HERO5 Black is a shade under 3 inches long, so it would take a bagful of these cameras to occupy the same amount of space as a conventional camcorder. The HERO5 Session and HERO Session are even smaller. Regardless, the diminutive stature of GoPro becomes even more important when you mount several cameras in a confined area and that's a good thing, because these little guys are often used in bunches.

"The bigger they are, the harder they fall" doesn't apply to the GoPro because it weighs ounces, not pounds. Since the camera is small and lightweight, you can place it almost anywhere with little concern that it will fall because it's too heavy. Earlier GoPro models captured movie files on an SD card, but because the camera got smaller and lighter with each upgrade, it now uses a petite microSD card (see Figure 1-1) that holds up to 128 GB of pictures and movies.

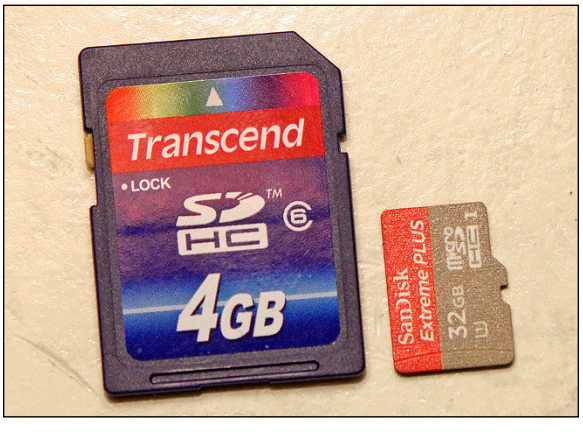

FIGURE 1-1: SD (left) and microSD (right) cards.

Wishing for the existence of such a camera just a mere generation ago was quite a stretch, like wanting a Pegasus in your barn. Fret no more. Your sanity is safe — at least when it comes to the existence of a durable, inexpensive camera that goes anywhere while capturing high definition video and even 3D video. All it takes to accurately capture whatever situation you have in mind is an optional, inexpensive mount.

Use it anywhere

Just a few years ago, ambitious users who attempted to put an expensive camcorder in a place where it didn't belong usually didn't get a compelling piece of work; rather, they often had to pick up the pieces of their smashed cameras. That's less a worry these days, thanks to the design and durability of the GoPro.

Beyond being small and well designed, a GoPro can go anyplace you go and mount almost anywhere. Moviemaking has always had the dubious distinction of being a cumbersome endeavor, usually because of the size and weight of the equipment. It's quite refreshing to have a high-quality camera with ultra-wide optics that fits in the palm of your hand and that has a mount for almost every situation.

Capturing footage in nonconventional places is the GoPro's job description. The tougher the situation, the more impressive the results. The GoPro is shock-resistant and waterproof, which are good qualities for a camera that can mount on almost anything, moving or otherwise. The next time you're inspired to mount the camera on Fido for a dog's-eye view, feel free. Shock your friends and neighbors when you decide to take the camera into the pool to shoot an underwater sequence (see Figure 1-2).

FIGURE 1-2: The GoPro HERO5 Black can do a lot in, out, and under the water.

Photo courtesy of GoPro, Inc.

Forget conventional camcorders

The GoPro doesn't resemble a conventional camcorder, nor does it behave like one. It looks more like a small square box with a protruding lens than a sleekly

designed camcorder. Although you can hold it like a traditional camera, it is equally effective (if not more so) when it's attached to something.

TIP

Here are some of the qualities that differentiate a GoPro from standard camcorders:

- **Size:** The current GoPros are quite small compared with most camcorders and significantly smaller than their predecessors.
- **Most models don't have a viewfinder:** Though the viewfinder is one of the main parts of a camcorder, only one current GoPro includes a viewing screen. That's okay because you wouldn't look through a viewfinder for most situations. The lack of a viewfinder doesn't mean you have to imagine where the action will take place. Simply use Capture (discussed later in this chapter), which transforms your smartphone or tablet into a monitor.
- **Wide-angle view:** The GoPro captures an angle of view up to 170-degrees that provides an ultra-wide view unavailable on any camcorder.

Better than a camcorder

Just a few years ago, merely having a moderate wide-angle view on a camcorder was a minor coup. Going reasonably wider often meant using one of those poor quality wide-angle adapters that screwed on the filter or clamped over the lens. Adapters produced exaggerated distortion, especially on the edges, creating a foggy appearance. The GoPro provides a wider perspective than those old accessory lenses, as shown in Figure 1-3, and does it with impressive optical quality.

FIGURE 1-3: An expansive view from the GoPro's wide-angle lens taken relatively close to the subject.

REMEMBER

In a way, the GoPro represents the elusive go-anywhere camera that's everything the camcorder never was: durable, mountable, and affordable.

Here's why:

- **Waterproof housing:** Thanks to its polycarbonate body on the HERO5, (and Session) and plastic housing on other HERO models, you can use your GoPro in, around, and under water.
- **Wearability:** Although it's not the kind of accessory that fashionistas clamor for on the catwalk during Milan Fashion Week, the GoPro is still quite fashionable. You can not only wear it, but also capture some pretty impressive video with it.

Here are a few ways to wear it (More will be discussed in Chapter 2):

- **Chesty:** The Chesty harness allows you to transform yourself into a living dolly. Instead of moving the camera through the scene and capturing choppy footage, be one with the camera and move through the scene in Zen-like splendor.
- **Head Strap:** The headband attaches to your head so you can get that walk-through look in your video (see Figure 1-4).
- **Hand and Wrist Strap:** Allows you to wear the camera on your arm or wrist. Capture timely footage simply by twisting your wrist or moving your arm.

FIGURE 1-4: Mounting your GoPro on the Head Strap lets you establish a subjective perspective simply by moving through the scene.

- **Bicycle helmet:** Wear the camera mounted on your helmet to get the unique perspective of a cyclist.
- **Seeker:** Include mounting options of Seeker backpack.

Seeing What a GoPro Can Do

What can a GoPro do? Here's a more relevant question: What do you want it to do? Asking this question is more like asking yourself about your own wishes and desires for unique video footage. When you determine what you want to capture, all you must do is connect the camera to the appropriate mount and press the Record button.

The following sections cover a few special capabilities of the GoPro.

Take still photos

Although still-photo capability rarely (and *rarely* means almost never) finds its way onto the list of reasons to buy a video camcorder, GoPro is the refreshing exception to that rule. It not only gets up close and personal with its ultra-wide-angle view (see Figure 1-5), but also does it with extreme sharpness. You can take still capture even further by capturing a scene at preset intervals to create a time-lapse movie. Although the current editions of the GoPro have excellent still-photo quality, it increases with each model.

TIP

For details on still-photo specs, see "Comparing GoPro Editions," later in this chapter.

Capture the scenes of your dreams

The GoPro liberates your imagination by allowing you to capture situations that in the recent past seemed like fantasies. Since the early days of motion-picture capture, people always had the desire to present each shot with a unique perspective. At some point or another, we've all wanted to mount a video camera on a car bumper to capture compelling footage or fly it remotely over the action on some hobby craft, but doing so was never feasible or practical. The ambitious efforts of the more adventurous often ended in a crash landing.

FIGURE 1-5: Still capture with the GoPro is remarkably good, especially at a unique angle.

Now, with GoPro, those creative ideas are not only possible, but also practical thanks to the camera's durability, unique mounts, and Wi-Fi communication. Here are a few things that GoPro makes possible:

- Connect it to an extension pole to get an overhead shot of the scene.
- Put it on a guitar.
- Attach it to your dog.
- Use it on a surfboard.
- Mount it on a car.

Capture HD and 4K video

Although all current GoPro models let you capture full-frame high-definition (HD) video, the quality and frame-rate options increase with the 4K setting. Using H264 compression, the GoPro compresses captured video files to fit more information on the microSD card, and the compressed files maintain substantial quality when opened. 4K is a high-resolution setting for video capture. Think HD and then quadruple the quality.

TECHNICAL STUFF

The 4K mode captures 3820×2160 resolution with a frame rate of 30 frames per second (fps) on the HERO5 and HERO4 Black Editions. The higher frame rate cuts down the choppiness when capturing action sequences. The HERO4 Silver Edition and HERO3+ Black Edition capture at 15 fps. The HD modes on all current HERO models capture between 30 and 120 fps. The HERO4 Black and HERO5 Black can record to 240 fps in the 720p mode. The more frames a camera captures, the smoother the playback. At 15 fps, situations that have less movement render much better than those with fast action.

Attach to anything

The GoPro system can make you feel like Inspector Gadget. There's something very spylike about securing your GoPro anyplace you want — high or low, moving or stationary— and then monitoring the scene on your smartphone. Thanks to the camera's various mounting plates, you can put it almost anywhere, even a boat rail as seen in Figure 1-6.

FIGURE 1-6: You can easily use the Large Tube Mount anywhere, including on a boat rail for a quick family portrait.

Photo courtesy of GoPro, Inc.

TIP

Connect the camera to a skateboard, or mount a bunch of cameras inside and outside a car as it plows through dunes. You can even hold a GoPro underwater with an extension pole to capture underwater video. I talk more about mounting devices in Chapter 2.

Connect to your other devices

Wi-Fi capability doesn't mean you can check your fantasy-football scores when shooting, but it does provide some pretty radical communication between the camera and your smartphone or remote. You can control the camera over Wi-Fi with your smartphone, tablet, or Apple Watch. You can also use devices as a monitor. The HERO5 also can automatically upload to the GoPro Plus Cloud. You will need a subscription to do it. Check it out at `http://shop.gopro.com/subscription/gopro-plus-monthly/GoProPlusMonthly.html`.

Here's more of what you can do via Wi-Fi:

- Update firmware.
- Check battery level.
- See microSD card info.
- View still photos and video.

Comparing GoPro Editions

The latest GoPro line, HERO5, features two cameras with varying features and quality levels. Each model offers Wi-Fi capability. The HERO5 Black closely resembles the size and footprint of the previous model, though it no longer needs a waterproof housing. The HERO5 Session looks like its predecessor, but internally it's been given a power jolt too. With 4K video capture, voice control, and some cool night functions, both models are equally amazing when it comes to quality, though each has features consistent with your needs.

Let's delve further into each model.

HERO5 Black

Once upon a time, it was a range of tonal names that differentiated the GoPro HERO, including the Silver and White editions. And while many of these models are still viable choices, the latest version is only about the Black. It's the big kahuna of the HERO line and it has been revamped so much that there's only a need for a single model of this size. The most obvious difference with this model is its ready-to-go waterproof design, good for depths as low as 33 feet (10m), and face it, how many times do you need to go deeper? A lot, you say, then just use the optional Dive Housing; it's good for close to 197 feet (60m).

Besides the built-in water protection, the latest entry is pretty feature-packed. Not only does it capture 4K video that can make your audience feel like they're in the middle of the action, but also it can capture it with one-button simplicity.

Internal improvements help stabilize video in shaky situations, capture crystal-clear audio, and provide pro-quality photo capture. Combine that with voice control and GPS, the HERO5 Black packs a lot of punch in such a portable camera. (see Figure 1-7)

Other new features over previous HERO models include:

- **Touch screen display:** There's no more guessing at what you're capturing or controlling the camera thanks to a built-in two-inch screen that allows you to view the scene, change settings, and edit footage. You can even upload footage to your GoPro Plus Cloud account, and access it on any device.
- **Voice control:** If you're going to deal with those funny looks when seen talking to your GoPro, it's nice for the camera to reciprocate. The voice command function will let you control the camera with hands, er, fingers-free operation. It understands 12 commands such as "GoPro start recording," or "GoPro turn off." As you can see by these examples, you must precede the action with GoPro, so the camera knows you're talking to her.

TECHNICAL STUFF

- **Stunning 4K recording**: Capture 4K video at 30 fps as well as 2.7K at 60 fps for ultra high-resolution video.
- **Impressive HD video:** Record HD video at up to 1080p (progressive) up to 120 fps for capturing maximum detail. The higher frame rate also provides the best quality applying slow motion in GoPro Studio.
- **Improved audio capture:** Thanks to the three-microphone system you can capture the clearest audio ever on a GoPro, both above and below the water. Internally, there's advanced audio processing and improved wind-noise reduction.
- **Auto Low Light:** The camera adjusts exposure when light values change by changing frame rates to compensate when you move between dense shadow areas and bright spots.
- **Better control over photos:** Lots of reasons. First, there's Protune for photos, which provides the same control over still photographs as you have for video. Like what? Changing the ISO setting, exposure compensation, white balance, color profile, and sharpness on still images and time-lapse sequences. You can shoot in RAW for increased flexibility in Photoshop, and the WDR modes capture maximum shadow and highlight detail.
- **Built-in Wi-Fi and Bluetooth:** Allows you to control the camera remotely through the Remo (waterproof voice-activated remote), smart remote and the GoPro App. It also enables auto upload to your optional GoPro Plus Cloud account.