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# THE COMPLETE GUIDE TO OLYMPUS' OM-D E-M1 FIRMWARE UPDATE 4.0

by Gary L. Friedman

*This is an addendum to the best-selling "The Complete Guide to Olympus' OM-D E-M1" by Gary Friedman. The original book can be purchased at the author's website in three different electronic formats at <http://friedmanarchives.com/OlympusE-M1>*

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# CHAPTER 1

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I have to tell you that as a former engineer, the things Olympus does with its cameras continues to impress me. I'm not just talking about adding new features via firmware updates (which itself is a nice thing). No, I'm talking about adding new features that ordinarily would require hardware re-engineering in order to be realized.

Take the Anti-Shock and Silent Shutter modes, for example, which normally require a total redesign of the light-gathering elements of the sensor. Or the smooth aperture control when taking movies, which would require a complete redesign of the lens <--> camera communications interface. Or the ability to send images over USB in tethered mode much faster than before. Olympus did it via a firmware upgrade, making what is arguably the most versatile camera on the planet even more so!

So it is with equal amounts of awe, amazement, and frustration (the last part from trying to figure all this stuff out) that I explain the new features that were added via Firmware versions 3.0 through 4.0 for the Olympus OM-D E-M1.

But before we begin, here are some menu changes you should know about:

## MENU ITEMS THAT HAVE MOVED





<b>Item</b>	<b>Old Location</b>	<b>New Location</b>	<b>Page # in original ebook</b>
Image Stabilizer	Camera 2	Gear C	95
Anti-Shock	Gear E	Camera 2	269
Sequential Shooting / Self Timer menu	Camera 2	Camera 1	85
Time Lapse Settings	Camera 2	Camera 1	217
Keystone Compensation	Camera 1	Camera 2	(See Firmware v2 guide pg. 16)

## HIGHER BURSTRATE

When the E-M1 was first introduced, the fastest frame rate you could shoot (and still autofocus between shots) was 6.5 pictures per second. Olympus has now increased that to a whopping 9 frames per second! As I said on the previous page, usually such improvements require redesigned hardware. Not this time – they were able to achieve the improvement by increasing the speed of the autofocus system.

If you don't require autofocus between shots – for example if you're set to Manual Focus mode, or have the focusing mode set to S-AF (Single-Shot Autofocus), then the maximum frame rate remains at 10 pictures-per-second.

To set your camera to the highest shooting rate possible, invoke

MENU →  1 → /☺  → 

***TIP:** Want to shoot at 11 pictures-per-second? You can using the Silent Shooting feature, described on page 4.*

## IMPROVED ANTI-SHOCK MODE

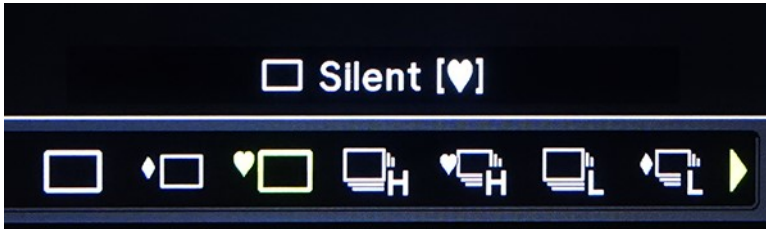
Before I get into this feature, let me give you a high level reminder of the differences between normal shooting, Anti-Shock, and Silent Shooting.

With regular shooting, each time you take a picture, the shutter closes to zero out the pixel's light value, then opens to start the exposure, then closes again to hide light from the sensor while the light values are read out, then opens again to enable live view. Kind of noisy but it works great.

With Anti-Shock, Olympus figured out a way to eliminate the first close-open cycle (plus allowed an optional delay). Once enabled (described shortly), Sequential Shooting modes with a diamond next to it invoke the Anti-shock feature (**Figure 1-1**).

Silent Shutter takes the Anti-shock feature one step further – it eliminates both the first close-open cycle and the 2<sup>nd</sup> close-open cycle as well! (Hard

to do this as an afterthought!!) Once enabled (described next), Sequential Shooting modes with hearts next to them invoke the Silent Shutter feature (**Figure 1-1**).



**Figure 1-1:** In the Shooting Mode menu, icons with diamonds next to them invoke Anti-Shock; whereas icons with hearts next to them are Silent Shooting.

There are two steps required to use Anti-Shock mode:

1. Go to **MENU → Camera 2 → Anti-Shock / Silent → Anti-Shock** and choose a delay (0 is recommended)
2. Go to **MENU → Camera 1 → Sequential Shooting / Self Timer** and choose an icon that has a small diamond next to it.

Anti-shock mode was discussed in the original book starting on page 269. Since then, the feature has been moved to **MENU → Camera 2**, and two additional settings have been added:

1. Silent Shooting mode has been added (next section)
2. Although there is no mention of it in the menus or the documentation, the improvement here is you can now use anti-shock in the Sequential Shooting / Self-timer menu's 5 pictures-per-second mode

## SILENT SHOOTING

The “Silent Shooting” feature is a big addition to firmware v4. With it, the camera captures the image using no shutter sound at all. It’s a purely electronic capture.

Usually this requires a sensor re-design. But Olympus has been tackling the necessity of a shutter slowly; first with the Anti-Shock function (which eliminated the need for the first shutter curtain entirely), and now with this Silent Shooting feature, which does away with the 2<sup>nd</sup> shutter curtain as well.

I'll skip all the details of how it was done technically, and jump straight to the part you need to know: This silent shooting feature has a tradeoff: It's not great for shooting sports or things that move in general.

The reason is that once the exposure ends, the sensor's design makes it impossible to read out all of the pixel values at the same time. And so the way the data is offloaded involves a video technique called "rolling shutter", which reads out the captured image one row at a time rather than all at once, starting at the top and ending at the bottom a fraction of a second later. Although it works great, it can create what videographers call the "jello effect" when your subject or camera is moving during exposure – vertical lines can look like diagonal lines, for example, because of the way the sensor is being read out during the exposure. This may or may not affect you depending on how much your subject (or you) move when you're taking stills.

You can create this effect on purpose - just shoot a picture of subjects with vertical lines while you're panning the camera from left to right (**Figure 1-2**). To get this result I set the shutter speed to 1/500<sup>th</sup> of a second and panned the camera from left to right very quickly.



Silent Shooting Off

Silent Shooting On

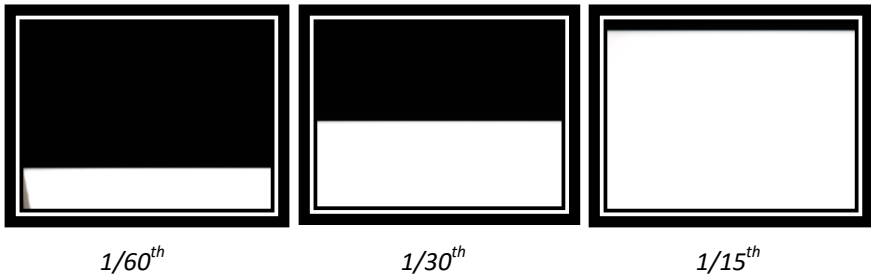
**Figure 1-2:** Silent Shooting uses the rolling shutter technique, making things that move fast look distorted (right). In this example the camera was panning with a shutter speed of  $1/500^{\text{th}}$ .

To invoke the Silent Shooting feature:

1. **MENU** → **Camera 2** → **Anti-Shock / Silent** → **Silent** → [Choose a delay time – 0 recommended.]
2. Go to **MENU** → **Camera 1** → **Sequential Shooting / Self Timer** and choose an icon that has a small heart next to it.
3. Strut around and shoot quietly, like you're using a rangefinder or something.

Some other characteristics about Silent Shooting:

1. Your maximum pictures-per-second speed goes to 11. (Sounds like a “This is Spinal Tap” reference. ☺)
2. Your shutter speed range goes from  $1/8^{\text{th}}$  to  $1/16,000^{\text{th}}$  (!)
3. Your ISO range goes from “Lo” to 3200.
4. You can't use flash unless your shutter speed is  $1/13^{\text{th}}$  of a second or slower. (See **Figure 1-3**.)
5. You can't use it with HDR.



**Figure 1-3:** I put the camera on “Silent Shutter” and pointed it a white wall illuminated by a studio strobe. This is another manifestation of the rolling shutter effect as demonstrated in **Figure 1-2**. This is why Olympus recommends keeping your shutter speed at  $1/13^{\text{th}}$  of a second or slower when using flash.

## FOCUS BRACKETING & FOCUS STACKING

This has to be the most exciting feature of the new update, for it represents a HUGE timesaver for folks who shoot macro and commercial photography using a manual technique called Focus Stacking.

Generally the way it works is like this: If you’re taking a photo of something very close using a macro lens, your depth-of-field is so shallow that only a tiny part of the composition will be in focus. Yes, you can make the f/stop smaller to get more in focus, but under those conditions it’s usually not enough; plus when you make the f/stop too small you encounter a phenomenon called diffraction which actually makes the subject a tiny bit LESS sharp.

And so advertising photographers the world over started taking multiple photos, tweaking the focus between each one so different parts of the subject would be in perfect focus, and then merge just the sharp parts together later on in Photoshop. (Just as with exposure bracketing, where the exposure changes slightly for each shot, focus bracketing changes the focusing for each shot. Automatically.) Doing this process manually presents an additional problem, though: Usually when you change focus, the magnification of the image changes a little bit too, making the merging of “just the sharp parts” extra challenging. It was a tedious process that



took a lot of practice to get right. Photoshop has tools to tackle this problem, but now Olympus has made this process insanely easy by automating both halves:

- 1) Focus Bracketing allows you to have the camera take a series of photos (you can specify how many), with the focusing being adjusted by an amount of your choosing for each shot.
- 2) Focus Stacking is a special version of Focus Bracketing – it will take a series of 8 images using the bracketing adjustment of your choice, and then *automatically* adjust the magnification and then merge just the sharp parts into one .jpg image.

### Frequently Asked Questions

**Q:** I don't understand... I thought using a small f/stop was the key to getting everything in focus?

**A:** It is, but there are situations where you can't make the f/stop small enough. Or you can make it small enough, but a new fuzzifying mechanism kicks in called diffraction. (That's why pro's will always tell you to use the lens' "sweet spot" to get the sharpest image.) Focus Bracketing and Focus Stacking hold the promise of doing it better than a small f/stop.

**Q:** So what kinds of photographers use Focus Stacking?

**A:** Product and Macro photographers mostly. With macro photography, the laws of physics say that the closer you get to your subject, the shallower the depth of field will be. So Focus Stacking gets everything into the sharpest focus without having to worry about diffraction. I know a jewelry company that uses focus stacking to take ALL of its catalog photos of rings to make sure the back of the ring is just as sharp as the front.

**Q:** Will this feature work with all lenses?

**A:** Focus Bracketing will; however the Focus Stacking feature will only work with three lenses as of now: The 60mm f/2.8 Macro, the 12-40mm f/2.8 Pro, and 40-150mm f/2.8 Pro.

An example of focus bracketing can be found in **Figure 1-4**.



**Figure 1-4:** Examples of using focus bracketing. Left: Standard shot at  $f/2.8$ . Center: standard shot at  $f/22$ . Right: After focusing bracketing and merging in Photoshop. (The merging isn't always perfect. 😊)

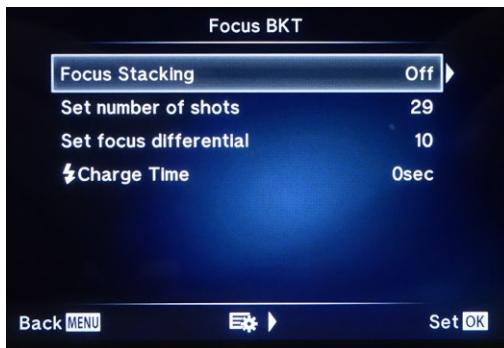
So how do you use it?

### *FOCUS BRACKETING*

With Focus Bracketing the camera takes a series of pictures and you will have to merge the sharpest parts together using the software of your choice (like Photoshop). Here are the menu items you need to invoke in order to use it:

1. **MENU** → **Camera 2** → **Bracketing** → **On** → **Focus BKT** → **On** and then the menu screen of **Figure 1-5** appears.
2. The first menu item, **Focus Stacking**, needs to be off. (The next section covers what happens when you turn it on.)
3. **Set Number of Shots** lets you specify how many shots you want to take in the bracket sequence – anywhere from 3 to 999. Generally the greater the distance between your closest and furthest parts of your subject, the larger this number should be. Try the bracketing function a few times and you'll get a good feel for what is best for the shot you're taking now. The sequence will stop either after the number of specified shots has been taken, or when focus reaches infinity, whichever comes first.
4. **Set Focus Differential** – This is essentially “How much do you want the camera to adjust focusing between shots?”. You can only choose a number between 1 and 10, with 10 being the further distance (which in my tests was just a few centimeters in distance).

5. **Flash Charge Time** – This variable allows you to specify a wait time between shots to allow for the flash to recharge. How long you should wait depends on several variables, including your ISO, camera to subject distance, how hard your flash has to work considering your f/stop and shutter speed choice. So I can't make a recommendation here. Just remember that with this feature your shutter speed must be  $1/13^{\text{th}}$  of a second or less to prevent a partially black frame.
6. With all the variables set, keep hitting the OK button until you're out of the menu. You're now in Focus Bracketing mode.
7. Now for the focusing part. Put your camera into Manual Focusing mode (**MENU → Gear A → AF / MF → AF Mode → Still Picture → MF** (or hopefully you've assigned it to a button!)) and then manually focus on the part of your subject that is closest to the camera. The Focusing Bracketing feature will start from that point and then re-focus further away from that point.
8. Initiate the Focus Bracketing sequence by pressing the Shutter Release button.
9. You'll now have to merge the sharpest parts of the images together using 3<sup>rd</sup> party software. (Here's how to do it in Photoshop: <http://bit.ly/1tmlxNH>).
10. Starting a new bracketing sequence? Make sure to reset the focus point to the closest point once again. The camera won't remember.



**Figure 1-5:** The Focus Bracket and Focus Stacking menu.

**Important TIP:** For reasons I don't understand, both Focus Bracketing and Focus stacking features insist on using the Silent Shutter feature. This means you're limited in your shutter speeds and ISO, and (most important) your use of flash is restricted to 1/13<sup>th</sup> of a second shutter speed or slower. This is tied to the extended flash duration of the Super Focal Plane Flash Mode which these bracketing modes require.

## FOCUS STACKING

Recall that with Focus Stacking, no Photoshop is necessary – all the merging of the sharp parts of the image happens in the camera. This feature is limited to small objects only, since the number of frames is fixed at 8 and the largest interval you can move the lens' focusing is 10 “distance units” (the amount of change is lens dependent). So the Focus Stacking feature was not a good fit for the example in **Figure 1-4**. Instead, small subjects such as that in **Figure 1-6** are ideal. In both of these examples, the amazingly sharp Olympus 60mm f/2.8 Macro lens was used.

The method for using Focus Stacking is similar to the Focus Bracketing method above. But there are some differences:

1. When you enable Focus Stacking via **MENU → Camera 2 → Bracketing → On → Focus BKT → On → Focus Stacking → On**, the “set number of shots” setting is greyed out since the number of shots the camera will take is 8 (plus a 9<sup>th</sup> shot which merges all of the sharp parts from the first 8. The 9<sup>th</sup> shot can only be a .jpg).
2. When composing your shot, leave extra room around your subject. This is because the Focus Stacking feature will crop the final image a little as its way of dealing with the different magnifications that different focusing distances impart.
3. Since the Focus Stacking feature shoots both closer and further away from your initial focus point, I strongly suggest manually focusing your lens to be *one third the distance between the closest and further parts of your subject*.
4. Press the shutter release button!

Here's more info from Olympus regarding focus stacking:

<http://cameras.olympus.com/stack/en/>



**Figure 1-6:** Focus Stacking in action. Left: A straight shot at  $f/2.8$ . Center: A straight shot at  $f/22$ . Right: Focus Stacking in-camera. The bottom row shows a close-up of the details – Focus Stacking produces sharper results than just stopping it down. (And diamonds are very difficult to shoot so they look sharp!)

## VIDEO IMPROVEMENTS

### *NEW FRAME RATES*

The E-M1 has added two new frame rates for videographers who have always loved that blurry-motion-when-you-pan 24 frames-per-second cinema look. (Hey, I just call ‘em as I seem ‘em.)

The original book explained all of the other Movie Image Quality settings on page 248 (“Movie Resolutions”). So in addition to Movie Format, resolution, and compression level, Olympus has now added 2 new frame rates: 24 and 25 frames per second (this is in addition to the 30 fps of Firmware version 1). 24 is for emulating traditional cinema speeds, and 25... well, that’s for European countries who have 50 HZ alternating current electricity and want a little less flicker when shooting under incandescent light. (Apparently 24 fps under 60 Hz as is the standard in North America doesn’t produce an interference pattern.)

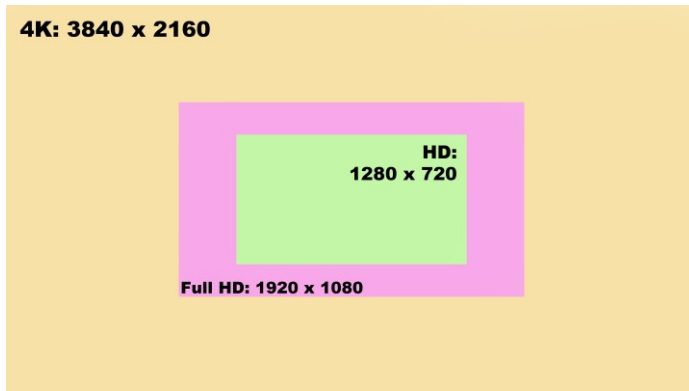
Don’t know which frame rate to choose? I recommend sticking to 30 unless you have a compelling reason to go slower.

### *4K TIMELAPSE MOVIES*

Movie resolution now has 4K in addition to HD (720p) and Full HD (1080p). In addition, the frame rate for Full HD is now 15 fps in addition to 10 and 5. The table below summarizes the options you now have:

Movie Resolution	Available Frame Rates
HD (720p)	5, 10, 15, 30
Full HD (1080p)	5, 10, 15
4K	5

How much bigger is a 4K movie than a Full HD one? The illustration in **Figure 1-7** below gives a pretty good idea.



**Figure 1-7:** The image size comparison between HD, Full HD, and 4K video. 4K is pretty big.

**TIP 1:** The camera may make the 4K movie for you from your timelapse shots, but it won't be able to play it back in-camera. For that you need a computer and software that knows 4K.

**TIP 2:** As before, the maximum number of frames you can shoot for timelapse movies is 999, giving a maximum length of 200 seconds.

### *SMOOTH APERTURE CONTROL*

When you're shooting movies in Shutter priority mode, and you're pointing the lens at all sorts of different kinds of light, the camera will try to adjust by either adjusting the ISO or, if the ISO is fixed, it will adjust the f/stop. But doing so with an f/stop mechanism that wasn't necessarily designed for movies might make for a noisy, non-smooth adjustment in the light levels (as happened with version 1 of the firmware).

Well, v4 of the firmware still won't let you fix the ISO in movie mode, which means this is still the preferred method of adjusting the exposure. But the camera will change the f/stop when you hit the limits of the ISO range.

Want to see for yourself? Try this:

- Set the Exposure Mode dial set to “Movie”
- **MENU → Gear I → Mode → “S”**
- Rotate the control dial (the one that controls shutter speeds – you may have changed the default configuration if you took my recommendations in the book) and set a shutter speed to something low, like 1/30<sup>th</sup>.
- Press the red button (start shooting a movie) and look into the lens at the f/stop blades. Then point the camera to a bright light source then a dark area and watch the f/stop change a little bit. Quietly!

As I have said many times in this supplement, some of these mostly mechanical features are extremely difficult to add as an afterthought in software. I congratulate Olympus once again!

This will not work with all lenses, though. As of now it only works on all M.Zuiko Premium primes and the 14-42mm EZ kit lens (make sure the firmware on the lens is up to date).

### *CABLE RELEASE SUPPORT*

Want to be able to start/stop recording movies? In addition to being able to do it from your smartphone (another improvement with firmware v4), you can now also do it using Olympus’ standard cable release accessory.



### *NEW IMAGE STABILIZATION OPTIONS*

In the original E-M1, you had two options for image stabilization for movies: On or Off. With v4, “On” has been renamed “M-IS2”, and a new option, “M-IS1”, now appears which combines electronic correction with the sensor-based mechanical correction.

What’s electronic correction?

Well, it doesn’t involve sensor movement. With electronic correction, the camera shoots a little wider than your viewfinder tells you you’re shooting, and then uses the same kind of in-camera image alignment technique used in the HDR feature. The extra overlap is used to fill in the edges of the frame so you don’t have fuzzy edges when shooting with an unsteady hand.



This technique may be CPU-intensive, but it does a better job of correcting the greater amount of shakiness that tends to happen with handheld movies.

Recommendation: Use M-IS1 when shooting movies. Just keep in mind that this improvement in steadiness comes at the expense of a slight amount of cropping.

**TIP 1:** The image stabilization option has moved, from **MENU → Camera 2 → Image Stabilizer** to **MENU → Gear C → Image Stabilizer**.

**TIP 2:** There's also a similarly-sounding "Image Stabilization" feature in the Gear C menu. What's that for? It's the new name for the **MENU → Gear C →**



**+IS Off** function described in the book on page 88. (Got that?)

### SLATE TONE / SYNCHRONIZED PCM AUDIO RECORDING

If you're a professional videographer, there's a good chance you won't be relying on the camera's built-in microphones (good as they are) for your video's sound. You usually use a shotgun or other mic and record the audio separately, adding it (and synchronizing it) to the video in post-production. These two features are designed to help in that regard, and both rely on the use of Olympus' digital audio recorder called the LS-100, shown in **Figure 1-8**. (And before you ask, this is called an "IC" recorder, with "IC" meaning "Integrated Circuit" – as opposed to tape.)

When connected to the camera via USB cable, the camera and recorder work together in two different ways:

1. The audio recorder will start and stop automatically, in sync with the camera.
2. The camera will produce a short audio time code burst called a "slate tone" on demand which is recorded on both the camera and an external audio recorder for easy synchronizing when editing.

To use, you must use two cables between the two devices: A USB and a 3.5" audio cable. In addition, the following configurations to the camera must be made:

1. **MENU → Gear I → PCM Recorder Link** should be set accordingly:

- a. Camera Rec. Volume: Operative for the camera's mics, Inoperative to have the LC-100's audio recorded on the E-M1's movie audio.
  - b. Slate Tone: On
  - c. Synchronized Recording: On
2. **MENU → Gear D → USB Mode → PCM Recorder**



### What are slate tones?

“Slate” refers to those clapboards that were used during the old Hollywood days to help synchronize film and audio, and later on scene numbers and time codes were added as well. In this instance the E-M1 can generate a short “slate tone” burst which is recorded on the audio track of both devices – it is an audio version of a time code, and once both tracks are on your computer your video editing software should be able to synchronize the audio and video automatically. To generate the slate tone, press the OK button for a second or two at the beginning of your take (before the action happens).

**Figure 1-8:** This is the Olympus LS-100 audio recorder that can couple tightly with the E-M1 when shooting video.

**TIP:** Make sure the LS-100's firmware is up to date before attempting this.

### *TIMECODE SUPPORT*

Time Codes have many purposes in the world of post-production, but the main reason to have them in a camera is to enable the easy synchronization of footage shot with multiple cameras at a live event. It is an invisible code – not actually part of the visual video image – that is written within the file in an industry-standard way. (It is formally known as “SMPTE Time Code”, SMPTE being an acronym for the Society of Motion Picture and Television Engineers.) High-end video editors such as Adobe Premier, Final Cut Pro, and Sony Vegas know how to import and read this info. When present, when you import the tracks into your video editor, all of the tracks line themselves up on the timeline effortlessly, even if they had been

started and stopped many times during the live event. That's a huge timesaver in post-production.

Traditionally, professional cameras would all be tethered to an external time-code generator so they would all be synchronized and to prevent drift; regretfully there is no such ability to accept an external sync signal with this camera. The best workaround is for many people to manually "type in" a starting point in the *TIME CODE SETTINGS* → *MANUAL INPUT MENU*. I talk about how to do this in this section.

To invoke and configure the Time Code feature, go to **MENU** → **Gear I (Movie)** → **Time Code Settings**. You then have three options, which I'll talk more about below.

### **Time Code Mode**

[Note: This only applies to NTSC video modes. PAL is a more civilized video standard and doesn't need to worry about drop frame time codes.]

Here you can specify either a "drop frame" (DF) or "Non-Drop Frame" (NDF). You can think of a "drop frame" in the context of a leap year – there's not an even number of days per year – in fact there are  $365 \frac{1}{4}$ . So to compensate for this non-whole number we actually do an "add frame" – add one day every 4 years.

Well, there's not exactly 30 frames per second in NTSC video. There's actually 29.97 – slightly less. (Don't ask.) And so to make sure that the SMPTE time code always matches the exact length of the video, the concept of Drop Frame was invented – the time code will skip the first two numbers each minute (except every 10th minute) so that no drift will result and the time code will always match the actual video length. (That's for 30p. At 60p, the first four frame numbers are dropped every minute.)

Want more detail? Here's a good site from Apple that explains it: <http://bit.ly/1BICL49>.

### **Count Up**

In the synchronized, multi-camera scenario I outlined in the beginning of this section, I talked about having several people set the Starting Time (next section) all at the same time to make sure all cameras were synchronized to the same time code. In that scenario, you also want to have the Count Up

variable set to “Free Run”, meaning “the timecode is always counting up, regardless of whether you’re shooting video or not” (or even whether the camera is on or not). (And when this is set you can always see the time code running in the upper-left-hand corner of the viewfinder when the exposure mode dial is set to “Movie”.) If you’re an editor of a multi-camera event, you can see the benefit of this setting: When you pull the video clips into your editing program, the clips will automatically organize themselves on the timeline properly, even if some cameras were starting and stopping throughout the event.



The other option for this setting is “Record Run” (commonly called “Rec Run”) where the time code doesn’t advance unless video is actually recording.

### Starting Time

This one’s a little intuitive. With this feature you can Reset the time code to zero, manually type in a time of your choice, or set the time code based on the system clock. No wrong way to go as long as the timecode values on the other cameras match yours.

**TIP 1:** *What’s the difference between this timecode feature and the Slate Tone described on page 17? The slate tone was designed to be used by one camera and an external audio recorder; whereas the Time Codes are necessary when you’re synchronizing multiple cameras in editing.*

**TIP 2:** *True professional camcorders have the ability to accept an external SMTE Time Code signal so that multiple cameras are synchronized and there is no drift. This camera can’t accept a timecode signal; however if you really want to Jam Sync your time code to multiple cameras, there’s a third-party product called LockIt Buddy which injects a signal into your microphone jack and records the timecode onto one of your two audio channels. Hey, it’s an option and pretty affordable at \$155 USD: <http://www.lockitbuddy.com>*

**TIP 3:** *The time code will not be recorded with Motion JPEG movies shot in  or .*

### SHUTTER FUNCTION

Another new feature can be found in **MENU → Gear I (Movie) → Shutter Function**, which lets you define what the shutter release button does when you're shooting movies in Movie mode:

**Mode 1:** When shooting movies, pressing the shutter release button will take a picture. (Recall that this means “movie stops, an image is captured, and the movie starts again”.)

**Mode 2:** The shutter release button starts / stops the video. The red button becomes inert and you CANNOT take stills during movies like you can with Mode 1. Mode 2 is for videographers who feel that the red button is not ergonomically placed.

### FOUR NEW “MONITOR DISPLAY” ICONS

This one is kind of self-explanatory. Four new icons are now selectable to appear when you're shooting video. You can see all 4 in **Figure 1-9**.

You can make these and other icons appear or disappear in movie mode via **MENU → Gear I → Info Settings → [Check all the icons you want to see]**.



**Figure 1-9:** 4 new icons are available in Movie mode: 1) Audio level meter 2) Shooting mode (P, A, S, or M) 3) Movie Effect (page 249 of the original ebook) 4) Time Code (two sections ago).

## DISABLE THE SNAP RING

On page 22 of my original book, I talked about the “Snap Ring” which appears on only a handful of Zuiko lenses. Most new owners found out about it only when they accidentally moved it and then couldn’t figure out why their camera wouldn’t autofocus anymore.

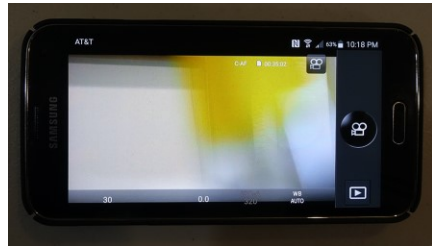
Well, to address that problem, Olympus has given you the ability to disable that functionality entirely (as long as the lens’ firmware is updated as well). This can prevent confusion out in the field if you accidentally slide the ring back and wonder why your lens isn’t focusing.

To invoke it, visit **MENU → Gear A → MF Clutch** and choose either “Operative” or “Inoperative”. (I suppose that would be a tad bit clearer than “On” or “Off”.) “Inoperative” means the snap ring is disabled; its position has no effect on autofocus mode.

## O.I.S. IMPROVEMENTS

### *START / STOP MOVIES WITH YOUR SMARTPHONE*

The other improvement has to do with pairing your camera with Olympus’ smartphone app called Olympus Image Share (O.I.S). In addition to being able to shoot a picture remotely (and have your phone act as the electronic viewfinder), you can now start and stop movies with your phone as well. I guess the technical problem they had to overcome was to have the camera capture full-on video while at the same time transmit subsampled video (every few frames or so) to the smartphone. Anyway, they did it.



**Figure 1-10:** You can now shoot movies via the smartphone app!

To use, go to the “Remote Control” section of the smartphone app (Full instructions on how to do this appear in the original book on page 275), hit the icon in the upper-right-hand corner (normally it says “P” for Program mode as the factory default), and choose the rightmost “movie” icon from the range of options that appear. You’re now shooting movies. Mind you, you have no control over things like focusing – even if you have your focus mode set to “Manual Focus”, when shooting movies with your smartphone it will always be in C-AF (Continuous Autofocus) mode.

Now you can hide your camera near that bird’s nest and take all the voyeuristic videos you want. ☺ More about the smartphone app can be found in Chapter 9 of the original book.

### *LIVE COMPOSITE ON OL.SHARE*

This simply means that Live Composite now joins the other extremely long shutter speeds in Manual exposure mode, such as Live Time, and Live Bulb (Figure 1-11).

### **MENU RECALL**

Have you ever played with some features in a menu, and got frustrated that each time you hit the Menu button you had to navigate back to that feature starting from the “Camera 1” menu? (I know I did – of course you do that a lot when writing a book on a camera.)

Anyway, this feature will take you to the menu you last visited when you press the Menu button instead of Camera 1 each time. To enable it, go to **MENU → Gear D → Menu recall → Recall**. (Or you can choose “Reset”, which restores the camera to the old behavior.)



**Figure 1-11:** *Live Composite now joins Live Bulb and Live Time on the Smartphone app.*

## ADVANCED FOCUS PEAKING

The original E-M1 had only two colors for focus peaking: Black and white (Page 34 of the book). Now you have more choices of colors (Yellow and Red in addition to Black and white), three different intensity levels (I prefer “High” myself), and a new feature called “Image Brightness Adjustment” which plays with the live view image in order to make the Peaking Color more visible in certain circumstances. (I’d keep that last item “off” since you’ll be nullifying one of the great benefits of Live View, which is seeing how your images will turn out before you shoot.)

Like most features, there are two ways to change the Peaking Settings: Either by pressing INFO when the peaking function is working, or via **MENU → Gear D → Peaking Settings**.

**TIP:** Focus Peaking only works for stills, not video.

## LIVE VIEW BOOST II

The original Live View Boost feature was described in the original book on page 313, and it was designed to allow studio photographers to compose their shot even when the f/stop, shutter speed, and ISO let in so little light that the viewfinder looks black.

Now this feature, reachable via **MENU → Gear D → Live View Boost** has been expanded to accommodate astrophotographers who need to frame their shots in near total darkness. The feature lets you specify how it will behave in four types of shooting conditions:

- When shooting on manual exposure (this is the original studio scenario outlined above)
- Bulb / Time – When you are taking time exposures with the camera on a tripod, the exposure mode dial set to “M”, and the shutter speed set to “Live Bulb” or “Live Time”.
- Live Composite



- “Others” (And I’m honestly not certain what other scenarios this covers.)

And the choices you have for all of the above settings are:

- Off: (Obvious)
- On1: The Live View image is amplified so it looks “normal”. The Live View image updates in real time.
- On2: The Live View image is amplified *and oversampled* so it looks “normal” in almost total darkness. The Live View image updates every ½ second. Try this in a totally dark room - you really will be able to compose your shot!

Where would you use this new feature? The figure below shows a situation where the Live Boost II feature would have been VERY HANDY.



*Figure 1-12: This Star Trails picture was taken on a moonless night with very little ambient lighting. The Live View display looked pitch black. How can you compose your shot if your viewfinder is black? Live Boost II was made to handle just such situations. (And “Live Composite” was born to get these star trail shots with a minimum of noise!)*

## S-OVF

This used to be called **MENU → Gear D → Expand LV Dyn. Range** (page 225 in the original book). This feature attempted to give you a preview of what your final results would look like beforehand when you're in HDR mode. Now with the new firmware release, it's available when you're shooting stills too.


It was ostensibly designed for those times when you're using the EVF (only the EVF; this doesn't apply to the LCD) outdoors on a very bright day. Under those conditions it's not uncommon to perceive the EVF as being dim compared to its surroundings, making it difficult to compose. Hardest hit in this scenario are the blacks in your scene – your eye just won't be able to tell if there are details in the shadows or not. There's a good chance you've experienced this yourself already.

So this function is designed to be assigned to a button via **MENU → Gear B → Button Function**, and then when actuated, it will brighten the shadows in the EVF so you can get a better idea of what you're shooting on a bright day. The lightened blacks will NOT show up in the final image; however.

## KEYSTONE COMPENSATION

The ability to straighten lines (like when doing architectural shooting, for example) isn't a new feature; however now it can be assigned to a button via **MENU → Gear B → Button Function**. Keystone Compensation was covered in the Firmware v2.0 ebook supplement starting on page 16.

## "UNDERWATER" PICTURE MODE

There was already an "Underwater" white balance setting in the original E-M1...and now there's a new Underwater option for **MENU →  1 → Picture Mode**. What does it do? It lightens the shadows and adds a slight yellowish tint to the image, and saturates the colors ever so slightly – just the kind of corrections usually needed when shooting with an underwater housing. The kinds of corrections it applies goes further than simply the yellowish tinge that the Underwater White Balance would produce on its own.

**TIP:** In the documentation, Olympus is assuming that you'll be using this Underwater Picture Mode using an underwater housing with its own flash, which is why they recommend disabling the Flash+WB feature when in Underwater mode: **MENU → Gear G →  $\downarrow$ +WB → Off.**

## OLYMPUS CAPTURE DESKTOP SOFTWARE

This very powerful Mac / PC software was first described in the Firmware v2 ebooklet starting on page 9. Originally designed to support tethered shooting, Olympus has since added new features to the program to allow much greater computer control of the camera's shooting variables.

Before I get into the new features, let me remind you that you can download the software here: <http://goo.gl/VIgmlO> Once installed, check for updates and then download version 1.1 which contains the new features.

A wonderful video overview of the new features can be found here: <http://bit.ly/20w6DZb> And a video tutorial showing how to use it can be viewed here: <https://youtu.be/rKdNy7I2XRU> .



**Figure 1-13:** The desktop view of Olympus Capture software v1.1.

Here's an overview of the new features provided. Hitting the “?” icon in the upper-right-hand corner of the Olympus Capture software will bring up their help guide which can walk you through the details of how they're all used.

- The Super Control Panel can now be customized to suit your personal needs.
- Keystone compensation control has been added as well.
- The transfer speeds from the camera to the computer have been increased, negating the need for a memory card to be in the camera while shooting tethered-ly. (That's a word!)
- You can control the Live Bulb, Live Time, and Live Composite modes from your computer, and also watch as the image “develops” in real time.
- Full control over movie mode as well.
- You can see the AF point display – that is, which autofocus points the camera used.
- Full control of the new features outlined in this ebooklet:
  - Underwater mode added to “Finishing Modes”
  - Live View Boost II
  - Silent Shooting

More detail on the program's full feature set can be found here: <http://bit.ly/1NE3Hk4> .

There's one feature, though, that left me scratching my head: “It is now possible to use an image with a transparent background (PNG) as an overlay image”. What's THAT for?

If you've ever gone shopping on a website that offers a product in multiple colors, it's tools like this that allow the photographer to line up the product position EXACTLY from shot to shot. The software allows you to “overlay” a transparent version of your previous shot so you can place the new product so that it lines up exactly with the previous shot. Very handy!

## TWO NEW MONITOR DISPLAY ICONS

“Monitor Display” is Olympus language for “New Icons will be shown to you when you’re shooting in Live View mode”. There are two new icons when shooting stills, and four new ones when shooting movies. (The one on movies was covered in this e-booklet starting on page 21.) I reckon these are two camera settings you don’t really need to be aware of as you’re shooting... but here they are.

The first tells you when the Simulated Optical Viewfinder (S-OVF) has been invoked. Because this feature only applies to the electronic viewfinder, the icon will only appear there when your eye is looking through it.

The second tells you when the enhanced anti-shock or Silent Shooting modes are active. (See **Figure 1-14**.)



**Figure 1-14:** These are the two new icons that can appear in your Live View image. Because the first one (Simulated Optical Viewfinder, or S-OVF) only appears in the EVF, I had to use this example from the Olympus manual to illustrate it. (The 2<sup>nd</sup> icon shows you when you’re shooting with Anti-Shock or Silent Shutter.)

## THE END

I hope you found this free update helpful! If you did, there's something you can do: please tell the world! Word-of-mouth from extremely satisfied customers is my only means of advertising. So please let people know about my ebooks on this and several other camera brands at [FriedmanArchives.com/ebooks](http://FriedmanArchives.com/ebooks) .

Also, if you feel that you're spending too much time trying to understand your camera's features and not enough time on actual photography, know that you're not alone. We never had any of this technology in the old day, yet we were still able to get "Wow!" images on slides – without shooting RAW and without requiring Photoshop.

With the Friedman Archives Seminars, I can teach you how to take "Wow!" images while keeping your camera on auto. (Really!) And now they're available in a streaming format, so you can enjoy this back-to-photography's-roots course in a signature friendly, clear, and intuitive way. Check it out!

Sincerely, Gary Friedman