A PRACTICAL INTRODUCTION TO PANASONIC'S LUMIX FZ1000

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January 2015

What Is It?

The Lumix FZ1000 is a DSLR-styled super-zoom camera with a 16x / 25-400mm range that features a 1-inch 20-megapixel sensor, a leaf shutter, a 3-inch variable-angle display, and 4k video recording capabilities. While it is marketed as an "enthusiast" camera and perceived by many to be a "bridge camera," my experience with the FZ1000 convinces me that this versatile camera should be viewed for what it accomplishes, rather than how it should or should not be categorized. It is rarely spoken of as falling into the mirrorless camera category for which Lumix has gained such positive press, yet it features an electronic viewfinder that employs a tiny, high-quality electronic display and not mirrors and prisms to represent your subject: You see exactly what the camera's sensor sees, and your vision is never temporarily obstructed by a rising and falling mirror. In some reviews the FZ1000 is referred to as a "point-and-shoot" camera, which indeed it can be when set to its Intelligent Auto mode. However, the point-and-shoot designation seems more than a little demeaning for a camera that allows such a high degree of user control.

What It Isn't

It's both amusing and understandable that even professionals, when they are introduced to this camera, will ask: "What other lenses are available for it?" Of course, the answer is "none:" Lumix FZ1000 is a **fixed-lens** camera. That explanation goes only so far with some who, after handling the camera, come back with another query: "But how do you change the lens?" I've learned to address the fixed-lens issue this way: "Because the lens is fixed, and you can't change it, you never have to deal with sensor dust." This statement brings final clarity to the fact that it is NOT an interchangeable-lens camera.

Neither is the FZ1000 a micro four-thirds camera, and it has the same lens-length equivalence as DSLR cameras. Calling this model a "bridge camera," seems inappropriate to me, as its larger size is not attractive to many bridge-camera shoppers. But to pros who are used to the weight imposed by DSLRs and their lenses, this 1.8 lb. unit makes a DSLR feel like a rock. It is even lighter than my Lumix GH4 when fitted with a 14-140mm lens (28mm-280mm zoom equivalence). The FZ1000's 5.4" x 3.9" x 5.2" dimensions make it similar in size to entry-level DSLRs, and its chunky grip has the feel of a DSLR camera.

FZ1000 Capabilities

Before I purchased the FZ1000, I had already worked through the menus and spent several months shooting with the amazing Lumix GH4 mirrorless micro four-thirds camera, both in the camera room and on location, using three interchangeable zoom lenses. My professed purpose in purchasing the FZ1000 was to lighten my load while doing travel/vacation photography and recording the occasional serious landscapes that I might come across during my travels.

After shooting over 7,000 frames during a three-week trip to Ireland, what I discovered was an entirely new photographic experience that I would never have understood had I not embraced this remarkably capable camera. I learned that the ability to move seamlessly from a 25mm focal length to a 400mm magnification — without changing lenses, and without significant compromise to image quality — opens a new dimension to out-of-the-camera-room image capture and creativity. What's more, I now believe this camera should be considered for every professional's equipment arsenal because it can fill a number of professional and personal needs for a small investment:

- Whether your primary gear is still DSLR, or you are a mirrorless micro four-thirds convert, the FZ1000 can be an economical one-piece back-up system for wedding and event photography —

one that includes 4K video and other features that most likely will complement your current gear. Pack it with several batteries and memory cards, and you're all set.

- The [Panorama Shot] feature of the Scene [SCN] menu allows you to create dynamic in-camera, auto-stitched images of the overall venue, large groups and other scenes that add variety to wedding and event photography. I can even see uses for it in high school senior portraits or candids.
- Several auto-HDR-like features provide additional creative possibilities. My favorite is the Scene menu [Handheld Night Shot] feature, which fires a rapid burst of six multi-aperture images then instantly combines them into a single image. This feature helps to eliminate blur from camera motion and creates cleaner images than would be the case with a higher ISO setting. I use this option not only for moody shots at dusk, or at night for scenes with streetlights, but also for some low-light interior situations.
- It's a great camera for photojournalism, provided that the assignment does not demand a high-powered long lens.
- While it won't fit in your pocket, it is sufficiently lightweight and compact that I can keep mine in a shoulder bag while traveling. With nothing more than an extra battery and media card, and I'm prepared to exploit most unexpected photographic opportunities and do so with the expectation of creating quality images. The full setup fits nicely my car's glove box as well.

In struggling for an expression that aptly encompasses both the experience and output of the FZ1000, I've concluded that it is the most "capture-rich" camera I've ever used for the purpose of making spontaneous images under diverse circumstances. I say this because:

- Its versatility allows me to capture a variety of images that I would have missed were I shooting with an interchangeable lens camera.
- It enables me to pay less attention to the equipment I'm carrying and more to what's going on around me, and this factor alone has caused me to develop a creative side of my brain that I didn't know was there.
- Overall, I'm shooting with the same improved precision I noticed when I began photographing with the Lumix GH4. I credit this improvement to the many tools that both Lumix cameras provide. Among the benefits of the FZ1000 are:
    - The camera's lighter weight alone minimizes shake, and to my delight I've discovered that I can shoot one-handed with the zoom fully extended when I need my left hand to hold on to something that keeps me from losing my balance in precarious shooting situations.
    - It provides numerous ways to assure that auto exposure produces repeatable, reliable exposures with technology borrowed from the GH4, including its multi-metering setting and easy-to-use back-button exposure and exposure-compensation features.
    - As is also the case with the GH4, the FZ1000 provides a variety of tools for achieving sharp-as-a-tack auto focus. I've come to rely on the AF Area box on both the GH4 and the FZ1000, although I had to make a change to the default setting of the FZ1000 Cursor Buttons, which is explained below.
    - I love the Tilt Sensor Display tool that helps me to keep the horizon line straight when the camera is handheld.

Why I Wrote This . . .

I learned professional photography in the film era using medium-format cameras. I was trained to keep things simple and repeatable in the camera room, which wasn't too hard with the limited number of settings available for 6x7mm analog cameras: Once you understood the settings and how they related to lighting, you didn't have to deal with a lot of variables, and the simplicity of it all made for efficiency in all key aspects of the business — from shooting to selling.

The digital revolution complicated everything. For me, DSLRs were hard to work with on a tripod, and I was dismayed by how shooting off tripod was causing novice and even well-trained photographers to overshoot, tolerate inconsistent exposures, and spend countless uncompensated hours correcting the explosion of exposures in Photoshop. I found DSLR auto features to be annoyingly inconsistent, so I went back to setting the aperture and focus manually. Ultimately, I never truly embraced DSLRs for portrait photography because of the difficulty of connecting with the subject while looking through the viewfinder, and I had no interest in setting up an iPad so that I could view what I had shot; I continue to be too much a believer in the old mantra: "Get it in the camera" . . . not "Check the iPad to see if you got it in the camera."

The GH4's fly-out monitor solved that problem. I could compose the camera room subject in the viewfinder, then instruct the subject while looking over the camera, as in 6x7 days. A quick glance at the fly-out monitor lets me verify that the subject is still safely positioned in the frame. If so, I can continue shooting; if not, then I make the adjustment and move on. No need to use the monitor to check expression. I was back to the future, now using all those years of training to know when I had the expression because I could SEE the subject live: No need to overshoot when you know you have what you need!

As much as I loved the fly-out monitor, the GH4 was daunting to me because of the seemingly overwhelming number of menu item settings: No big deal in the camera room, but lots to be confused by when on location. So I set about studying the very thick *Owner's Manual for advanced features* to better understand the settings. To keep all of this information straight over time, I created my own description of the purpose for each setting and a notation of how and why I set each menu feature. This allowed me to recognize which of the settings were most important to the work I do and to make use of the Quick Menu and Function Button settings for those key items that I need to manipulate. Doing so clearly identified a much more manageable number of tools and features and greatly simplified my approach to the GH4. It only made sense to do the same thing for the FZ1000. I hope this information can cut down the learning curve for anyone who is interested in understanding how best to use the multitude of features offered by this camera.

I have not included the Motion Picture Menu, as my primary interest presently is stills, or the Playback Menu, as most of the items have little interest for pros. I have tested nearly all of the menu settings mentioned here, and throughout the process of learning and writing about them, I have changed quite a few of my original menu decisions as I've found other ways to approach certain types of photography. I find that I have to review this document from time to time to "catch up" with my own learning curve. And as daunting as the 366-page *Owner's Manual for advanced features* might seem, it's a big help in making the most of what the camera provides. I use both the printed copy in a notebook for browsing and the very helpful PDF copy on my computer because of its "find" feature and excellent page-linking capabilities.

Before You Shoot . . .

YOUR GEAR

Experienced pros know how important it is to find a travel case that will accommodate the bits and pieces that constitute their shooting needs. Because the FZ1000 is almost completely self-contained, there are no essential "accessories" other than batteries, memory cards and a lens cleaning cloth. I also carry a Lumix cable release and several neutral density filters for slow-shutter-speed images and a few small plastic bags to cover the camera in misty weather. All of this fits with space to spare in a small 6.7" x 5.3" x 7.9" Lowepro 120 AW Shoulder Bag (with belt loop) that includes an all-weather cover for extreme conditions.

PROTECTING THE LENS

The only way I can keep from losing a lens cap is to leave it in the bag when I'm ready to shoot and put it back on when the day is done. Because I'm not changing lenses, I find that a 62mm skylight filter screwed onto the lens, in concert with the camera's lens shade, is all the protection that is needed.

CHECK YOUR DIOPTER!

You would think that 35 years in the photography business would be long enough to know to check the viewfinder diopter and adjust it if necessary before I do anything else. Apparently the excitement of a new camera overcomes my brain, so I often forget this essential step and immediately conclude that something is wrong with the camera.

Organizing Your Camera

The good news is that the Lumix FZ1000 provides a host of ways and means to personalize how you wish to capture a wide range of subjects. The bad news is that you have to decide what ways are best, which is tough to do until you do some shooting. Some decisions are easy: You can choose to operate the super-zoom lens via the default Zoom Lever, which functions on either the [ZOOM] or the [FOCUS] setting on the left side of the lens, or you can zoom manually by choosing the [FOCUS] setting. After some practice, I've learned to love using the Zoom Lever, and I've used it to grab some quick one-handed shots that I could not have captured any other way. Note that when focusing manually, the lens switch must be set to [FOCUS]. I rarely focus manually anymore because I find the AF features of this camera to be more accurate than my eye.

However, one important operational choice was far more difficult to decide upon than I expected, mainly because of the workflow I have developed using the Lumix GH4: This interchangeable-lens camera has four directional Cursors on the Control Dial and a Touch Screen that are not part of the FZ1000. At first I really missed both, even though they serve only one purpose for me: Both functions can be used to activate the oh-so-helpful AF Area box that is such a reliable focusing mechanism. With a quick touch of the screen, the GH4 box can be moved about the frame either by touch-dragging it or by using the directional Cursor feature of the Control Dial, and it can be made larger or smaller by turning the Control Dial. You can accomplish the same result by first pressing any of the four directional Cursors. But what to do when you do not have default control of the AF Area box and it is such a fundamental part of the workflow?

I use the [1-Area] setting of the Auto Focus Mode almost exclusively, and deploying the "AF box" assures that the subject is tack sharp. Operating the AF box according to the way the FZ1000 ships is, in my opinion, more useful to inexperienced enthusiasts than to pros, but not to worry! Panasonic has wisely provided two modification options for those who wish to create a more efficient workflow. The explanation below will help you to choose the better of the two options for your needs.

- **Using the Function 4 Default "Focus Area Set" to Activate and Control the AF Box**
  This option requires that you assign the [Focus Area Set] mode to a Function Button so that you have instant access to it. If you are not familiar with how Function Buttons work, read p.44 of the Advanced Manual or follow these simple directions: Using the Custom Menu, navigate to page 7, and select the second item [Fn Button Set]. On the screen that appears, select [Setting in REC mode], then navigate to [Fn4] and select it. Finally, scroll until you come to [Focus Area Set], then select this option.

  To use the option, start by making sure that the Auto Focus Mode is set to [1-Area] or [Face/Eye Detection]. Simply press Function Button 4; the AF box will appear, highlighted in yellow, which means it then can be moved in four directions by using the Cursor Buttons and made larger or smaller by rolling the Rear Dial to the right or left. Center the box by pressing the Display button [DISP.].

- **Achieving Complete Control of the AF Box**
  I find that having to activate the AF box by remembering to do something else first (selecting Function Button 4) each time I want to use it, slows down my workflow. So here's how to take complete control of the Cursor: Go to p.3 of the Custom Menu and select the first item: [Direct Focus Area]. Change [OFF] to [ON]. Now you can control the AF box simply by pressing any one of the cursor buttons. Move it left, right, up or down by pressing the appropriate cursor button(s). Make the box larger or smaller by rolling the Rear Dial to the right or left. Center the box by pressing the Display button [DISP.].

  The downside of this modification is that you must now reassign the four different cursor menu items (ISO, WB, AF Macro, AF Mode) somewhere else. Your choices are the Q Menu, which by default is set to FN Button 3, or assign one or more of the four cursor menu items to one or more Function Buttons.

  My hope is that in the next version of the FZ1000, it might be possible to include a dedicated directional AF Area controller in any form that fits the camera body. In the meantime, I find the modification described here to work very well.

My Function Button and Q Menu Choices

During the first several months that I worked with this camera, I changed the Q Menu and the Function Buttons several times, and I'll probably continue to make changes in the future as I experience different ways of operating. Rarely, I suspect, will two photographers set these choices in like fashion, but it might be helpful to review how and why I have set mine as shown below:

FUNCTION BUTTONS

- **Function 1: Silent Mode** — When I need to silence the camera, it typically must be done immediately or the photographic moment will be gone. This happens a lot in the shooting I do, so it's worth assigning an FN button that is easy to find.
- **Function 2: WiFi** — I'm not set up for WiFi yet, but I suspect this will come in handy in the future, so I'm holding this default Fn button open. If not, I will assign it to the HDR function.
- **Function 3**: **Q Menu** — The default setting location works well for me.
- **Function 4: ISO** — I find it necessary to make frequent ISO changes to guard against noise in display-size images, so a Function Button assignment makes sense.

- **Function 5: Quality** — The versatility of this camera allows it to move from vacation-memory-type photos to serious professional-purpose images, so I like to have ready access to the Quality function, allowing me to move quickly from high JPGs to Camera Raw capability and back again when needed.

Q MENU

Even though there are 15 possible Q Menu spaces, I prefer not to use any more than I really need for ready reference. The more you have, the easier it is to forget whether or not they are in the Q Menu. Presently I have only six spaces assigned, three of which are reassignments from setting the [Direct Focus Area] menu item to ON, which wipes out the four items assigned by default to the cursor positions around the [Menu Set] button.

- **HDR:** I use this feature enough that I want it to be easy to enable and disable, so I've placed it in the first position of the Q Menu
- **Flash Adjustment:** I haven't used the in-camera flash much, but I'm testing it whenever real-world opportunities present themselves, as this function does give the user three stops of under-exposure and three stops of over-exposure (by 1/3 stop settings) to play with, so it's helpful to access this function through the Q Menu.
- **Burst Rate:** I'm still testing this function between the M setting and the L setting, to learn whether M is sufficient for all action situations or whether L is better for slower-moving subjects that do not require as many images in the burst, so it's handy to have this in the Q Menu for now.
- **White Balance:** When traveling, I keep the FZ1000 set to Auto White Balance [AWB], but I never know what kind of lighting I might run into when a serious photographic opportunity presents itself. So I like to have this function easy to reach via the Q Menu.
- **AF Mode:** Rarely do I use any option other than the [1-Area] setting, but when I need to make a change, I want to do it quickly.
- **Macro Mode:** I don't do much macro photography, but I have placed this function on the Q Menu; otherwise I would have to go to the Custom Menu and turn the [Direct Focus Area] to the [OFF] position any time I wanted to access Macro Mode. At least I have not found a way to get to this menu item (other than assigning it to a Function Button) when I have removed the four default items from the Cursor Buttons by turning the [Direct Focus Area] on p.3 of the Custom Menu to [ON].

If you are not familiar with how to add or remove frequently used functions to the Q Menu, see p.40 of the Advanced Manual.

LUMIX FZ1000 MENU NOTES

Before you start to work on menus, note that you can move from one page to the next by pressing the camera's DISPLAY button [DISP.]. No need to scroll through each page item.

SETUP MENU

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- **Clock Set** - First thing you should do: Set the date and time.
- **World Time** - Allows you to set a time zone for your home and one for an upcoming trip to any area outside of your home time zone. Allows you to move back and forth between your home or destination.
- **Travel Date** - Set the date and location for your upcoming trip; images made as of that date will be time stamped in the appropriate time zone of the World Time setting.
- **Wi-Fi** - Allows you to connect with Wi-Fi-enabled devices. Read all the details in the Advanced Manual, starting on p.250.
- **Beep** - Adjust beep volume and eShutter volume to your preference.

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- **Live View Mode** - Refers to video: Allows you to set the frame rate of the recording screen (Live View screen). Default is [60fps], which is where I am leaving it until I learn otherwise.
- **Monitor Display** - The default setting looks good to me.
- **Monitor Luminance -** Default is Auto [A*]; leave it there unless you have a preference for additional control.
- **Economy** - Allows you to select elapsed time for the camera to be idle before it enters Sleep Mode and before Auto EVF and LF Monitor turn off. My choice is [5 minutes] for each. Be aware that when the camera enters Sleep Mode, the lens, if extended, retracts efficiently . . . so efficiently that if your hand or arm are resting lightly on or around the lens, it is likely to give your unsuspecting skin a nasty pinch: The camera sleeps, but you wake up ☺. If you find this to be troublesome, then you can turn the Sleep Mode to [OFF], but you better keep you eye on battery consumption if you can't remember to turn your camera off.
- **USB Mode** – Sets the communication method when connecting using the USB connector that comes with the camera.

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- **TV Connection** – Sets the way you choose to connect to a TV or other device.
- **Menu Resume** - The [ON] setting allows the menu to open to the last-used setting. When I was working my way through the menus to learn how all the individual functions behaved, I turned this setting to [OFF], so that I could know where I left off in my learning process. Once I was comfortable with camera operations, I reset it to [ON], so I could instantly return to specific settings. Be careful when you return to **Format**, as you could wipe out your memory card if you are not paying attention.
- **Menu Background** – Personal preference dictates these color settings. I use grey — the first color on the list.
- **Menu Information** – Options are [ON] or [OFF]. Very helpful to have it [ON] at least when you are starting the learning process. Mine is still [ON].
- **Language** – Cameras sold in the U.S. give you a choice between English or Spanish.

More SETUP —>

SETUP MENU - continued

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- **Version Display** - Shows the current version of camera Firmware.
- **Exposure Compensation Reset** – When set to [ON], any exposure compensation that has been set during a session is automatically cancelled when the camera is switched off. This is where I set it, as I would never remember when I had set compensation, and that could lead to unpleasant surprises.
- **Number Reset** – This item asks the question "Reset file no. in the camera? If you choose [YES], then the camera returns the image file number to 0001. My choice is [NO] to avoid having files of the same number show up in the same folder, which could cause file overwriting if you are not paying attention.
- **Reset** - Allows all menu settings to revert to those in place when camera was shipped from the manufacturer.
- **Reset Wi-Fi Settings** – Allows you to reset all settings in the WiFi Menu to factory default settings (excluding Lumix Club).

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- **Format** – Allows you to format the memory card upon applying the [YES] command. Remember to format new cards or those used in another camera before making your first shot. File corruption could occur if you skip this step.

CUSTOM MENU

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- **Custom Set Memory** – Allows you to apply Custom Settings to four different "Custom Sets" (setups for specific types of photography) on the Main Mode dial, identified as C1, C2-1, C2-2, C2-3. The trick is to remember what set is where, so make a note for future reference. Here's how to go about creating Custom Sets:
  - Decide the different types of photography for which you would like to create a Custom Set, such as camera room portraits; hand-held outdoors; landscapes/tripod; action photography; video.
  - For each type of photography, set up the Main Menu, Q Menu, Fn Function settings and the Main Mode Dial setting.
  - Select the first item in the Custom Menu: [Cust.Set Mem.]
  - Select one of the four Main Mode dial "C" settings, then confirm by selecting [YES] to the "Overwrite current camera setting with Custom Set _" prompt.
  - Be aware that some menu items cannot be registered as Custom Settings. These include the Drive Mode Dial and the Focus Mode Lever, as they are not electronic controls. All are listed on p.120 of the Advanced Manual.

  I found that it was necessary for me to go through all the menu items to familiarize myself with them before I was prepared to create Custom Settings for this camera.
- **Silent Mode** – Allows you to disable operational sounds and Auto Focus Assist light output simultaneously by choosing the [ON] setting. Generally, I like to hear the beeps and clicks, so I keep it set to [OFF] most of the time. However, when I want to sneak up on something or avoid attracting attention to myself when shooting, I need this very helpful feature quickly, so I have assigned it to Function Button 1.
- **AF/AE Lock** – Here's where you sort out the Auto Focus and Auto Exposure options you can lock in using the AF/AE Lock button. Options are [AE Lock], [AF Lock], [AE/AF Lock], and [AF-ON], choices which will likely be informed by your previous shooting experience. The Lock features were useless to me with DSLRs because my hands are small, and both reaching and holding the "back button" were either painful or impossible for me. The smaller Lumix body allows me to use the feature! My choice is [AF/AE LOCK], which comes in handy if I'm shooting a series of images for which I wish the Focus and Exposure to be the same, or "locked in."
- **AF/AE Lock Hold** – This setting determines how the Lock Hold function operates. If you select [OFF], the [AF] and/or [AE] setting is locked only while the Lock button is physically held down. This does not work as well for me, as it's hard for me to keep the back button pressed down with my thumb. So I select [ON], which means once the AF/AE back button is pressed, the Auto Focus and/or Auto Exposure (depending on your choice) is fully locked. This way I can press and release the back button, then adjust my hold on the camera and press the shutter to make my exposures. So far I haven't had a problem remembering to "unlock" the "Hold" when I move on to another scene or subject.
- **Shutter AF** – Sets focus in motion automatically when the shutter button is pressed halfway. I set this as [ON].

TIP: *If you want to fully separate Auto Focus from Auto Exposure, set AF/AE Lock to [AF ON] and Shutter AF to [OFF]. To use: Press the AF/AE Lock button to set the Focus, then press the Shutter Button to set the Exposure and take the photograph.*

More CUSTOM —>

CUSTOM MENU - continued

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- **Half Press Release** – The shutter will immediately fire when the shutter button is pressed halfway. My preference is [OFF].
- **Quick AF** – Supposedly this speeds up the focusing that takes place when you press the shutter button, so that's why I set it to [ON]. I have read that this setting uses more power, but I haven't taken the time to test it.
- **Eye Sensor AF** – The camera automatically adjusts the focus when the eye sensor is active. It works well enough, when set to [ON], but I'm sufficiently old school to be distracted by it, so I prefer the [OFF] setting, which lets me dictate focus.
- **Pinpoint AF Time** – When you select [Pinpoint] on the AF Mode Menu, the camera automatically magnifies a small portion of the screen close to the focus point and holds it for a time so that you can see exactly what is in focus. This setting lets you choose the time as [LONG], [MID] or [SHORT]. [MID] works fine for me. Note that Pinpoint AF is not available when you are in the AFC mode.
- **AF Assist Lamp** – Auto Focus Assist Lamp will illuminate the subject in low light when the shutter button is pressed half way, making it easier for the camera to focus when recording in low-light conditions. Most of the time I have it set to [ON], but when people, dogs, cats, or large animals that can kill or maim are involved, I don't like to startle them with a light beam, so in such cases, I set this item to [OFF].

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- **Direct Focus Area** – When turned [ON], this is the setting that allows you to move the AF Area box or the MF Assist magnification using the "cursor buttons" surrounding the [Menu/Set] button when recording, as explained on pp.5-6 in the "Organizing Your Camera" section of this document. With this mode of operation, any cursor press immediately activates the AF box, highlighting it in yellow to verify the Focus Area, and it can be made larger or smaller by rolling the Rear Dial to the right or the left. Remember that the [ON] setting also disables the default functions of the four different cursor menu items (ISO, WB, AF Macro, AF Mode), so they must be reassigned to the Q Menu and/or one or more Function Buttons.
- **Focus/Release Priority** – If set on [RELEASE], the camera will make photos even when it knows they are out of focus. The [FOCUS] setting requires the camera to confirm focus before tripping the shutter, so that's where I keep it.
- **AF+MF –** When set to [ON], you can tweak the focus manually after the automatic focus is finished, which is a very nice feature, so I keep the setting there.
- **MF Assist** – When the lens is set on Manual Focus, this option activates a magnified section of the image through one of several different methods, the most straightforward of which is turning the focus ring, so I select the 2nd icon option.
- **MF Guide** – When turned to [ON], and when you start to turn the focus ring, a directional scale is shown at the bottom of the frame, which allows you to quickly determine in which direction to turn the focus ring. As I am directionally challenged, I keep it set to [ON].

More CUSTOM —>

CUSTOM MENU - continued

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- **Peaking** – When focus is being adjusted manually, and Peaking is turn to [ON], this feature uses color to highlight or outline portions of the image that are in focus, which can be very helpful. You can dictate the color and intensity of the highlight by selecting the [SET] option of the Peaking Menu to reveal [Detect Level] choices of [HIGH] or [LOW], both of which are a matter of personal preference; and three [Display Color] options. I prefer the [LOW] selection and the [Cyan] color.

  TIP: *Remember that you cannot focus manually unless you set the lever that surrounds the [AF/AE Lock] button to [MF] (Manual Focus).*

- **Histogram** – Allows you to select [ON] or [OFF] to display or not display a pre-capture histogram. While it can cover up an important section of your subject, it also can be moved out of the way in all the ways the Auto Focus Box can travel around the screen. I kept it on for the first few days of shooting, but it is now switched to [OFF], as I found it more distracting to the still-capture process than it was useful. Instead, I depend on the Zebra Pattern function, as it reliably warns me when the exposure will result in blown-out highlights (see Custom Menu 5/8 on the next page).
- **Guide Line** – This is one of my favorite features, one about which I had asked several of the tech guys with a DSLR camera manufacturer, but which never materialized. When photographing street scenes or landscapes, I select the "rule of thirds" option; I also like the vertical and horizontal free-form guides that can be placed where you want them to serve a particular need, such as a head-placement guide, or when holding the camera in a vertical position to assure that elements, such as buildings, are not leaning.
- **Center Marker** – When turned to [ON], this feature displays a [+] sign that marks the center of the recording screen. It's a small, yet helpful, feature.
- **Highlight** – When the Auto Review function is activated or when in Playback Mode, blown-out areas appear blinking in black and white, which drives me nuts and makes me want to shout "I see you; so leave me alone!" Accordingly, I set this feature to [OFF]. On the other hand, I like the Zebra Pattern (see Custom Menu 5/8 on the next page).

More CUSTOM —>

CUSTOM MENU - continued

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- **Zebra Pattern** – Unlike the maddeningly irritating blinky Highlight setting that carries on every time you play back the image, I like the Zebra Pattern, which appears in preview mode and far more discretely indicates parts of an image that are in danger of being blown out via overexposure. [ZEBRA2] is easiest on my eyes. When photographing landscapes, the Zebras provide an unmistakable reminder that a neutral-density filter or graduated neutral-density filter might be in order to control sky luminance. More often than not, however, I find that Lumix cameras can handle contrast extremes much better than my old DSLRs, so I often turn to negative Exposure Compensation, which I have set to deploy via depressing and turning the Rear Dial to the left. As soon as you depress the Rear Dial, the exposure compensation setting turns yellow to signify that it is active. Press it again if you need to toggle to aperture settings.

  This function also lets you determine minimum brightness level for the Zebra Pattern you choose by selecting the [SET] option. Information on pp.193-194 of the Advanced Manual helped me to understand the purpose of the settings, but I had to do a lot of testing to determine that a setting of 90% works best for much of the landscape photography I do. According to the manual, "The smaller the value is, the wider the brightness range to be processed as a Zebra pattern will be." From experience, I found that any setting below 90% summons a herd of Zebras that cover all or most of the scene. I've also learned that in conditions of more contrast, it's best to let a few of the Zebras live or you will block up your shadows.

- **Monochrome Live View** – Allows you to preview, but not photograph, an image in monochrome, which I suppose can be helpful when composing a scene that you might wish to output as monochrome. Begin photography with the menu option to [OFF]; turn it [ON] when you wish to use it, otherwise every half-push of the shutter will preview a monochrome image, rather than a color one.
- **Constant Preview** – When set to [ON], you can check the effects of the selected aperture and shutter speed on the recording screen <u>in Manual Exposure mode</u>. I find this to be very helpful for the rare occasions that I need to use manual exposure.
- **Expo. Meter** – When you cycle through the Preview Screen using the Display button [DISP.], you will see several different "Exposure Meter" configurations that you can set to provide camera data and tools in the manner that best serves your shooting style. When set to [ON], it will reveal two metering bars that show differing combinations of Aperture and Shutter that will render a proper exposure; it comes into play when you move the Rear Dial. Because it takes up a lot of space for information that I do not rely upon, I turn this function to [OFF].
- **Dial Guide** – I set this function to [OFF]. When set to [ON], it displays the "Operation Guide" in the lower right corner of the monitor screen when you press the Rear Dial. You can see the info it displays for each of the PASM modes on p.19 of the Advanced Guide, but I find that it does not contribute much to efficient workflow.

More CUSTOM —>

CUSTOM Menu - continued

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- **LVF Display Style** – Lets you select the presentation style of the Viewfinder. I prefer the style that features black strips on the sides and bottom so that the essential camera data displayed in the bottom margin is extremely easy to read. The second option overlays the image with the camera data, which makes it a bit harder to discern.
- **Monitor Display Style** – Lets you select the presentation style of the Monitor. The two options are the same as the previous menu item, and my choice again is the black-frame option.
- **Monitor Information Display** – When set to [ON], a Camera Data Information Screen (without a preview image) is accessible by way of pressing the Display button [DISP.] repeatedly until it is revealed. I relied on a similar data display with my old DSLR cameras, as I could control the various functions from this screen, and from time to time this feature came in handy. However, the Information Display of this unit is merely a static one that does not allow you to make setting changes, unlike the Lumix GH4, which enables changes via its touchscreen capability. Nonetheless, I kept this function set to [ON] for ready reference until I recognized that I never use it, most likely because this camera hands you so many tools to know where you are at any given time. So now I set this menu item to [OFF].
- **Recording Area** – The angle of view is different for still pictures vs. motion picture recording, so this function allows you to set the one you wish to use. The default is to the camera icon, which is where I will leave it until I explore video.
- **Remaining Display** – Allows you to keep track of how much space is left on your memory card, depending on whether you set it for the number of images when you are shooting stills or the time remaining when you are shooting video. Therefore you need to select the relevant icon.

More CUSTOM —>

CUSTOM MENU - *continued*

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- **Auto Review** – This function dictates when and how you wish to review the images you have captured. It contains two submenus: [**Duration Time]** and [**Playback Operation Priority]**.
  - [**Duration Time] –** You can set it to [HOLD] an Auto Review image indefinitely until you dismiss the image with a half-press of the shutter button, or choose options between 1 and 5 seconds, or set it to [OFF]. Under most conditions, I set this function to [3SEC].
  - **Playback Operation Priority** – Whether this function is set to [ON] or [OFF] doesn't seem to make a difference to any **Duration Time** settings I have tested, (except for the [HOLD] setting), which fixes **Playback Operation Priority** to [ON], so I must be missing something. Page 60 of the Advanced Manual says this about the [ON] setting: "Switching the display of the playback screen, deleting pictures, etc. are possible during [Auto Review]." I suppose this is what I want to happen. Then again, it tells me that when set to [OFF], "Button operations during [Auto Review] become the same as those for recording." So maybe this is what I want ☺. Confused? Yes I am. For sure, what I **don't** want to happen is for the lens to retract when it is zoomed, composed, and focused during a slight pause in a shooting sequence, and this does happen sporadically. I have a feeling that one or both of these submenus might, when set properly in concert with one another, keep this unpleasant reality from happening. However, the information on p.60 has not clarified this issue for me.
    So . . . IGU. MRR (I Give Up. More Research Required).
- **Fn Button Set** – This is where you assign frequently used functions to specific Function Buttons. Follow directions starting on p.45 of the Advanced Manual or review the information I presented in the "Organizing Your Camera" section of this document appearing on pp.5-6.
- **Zoom Lever** – Provides three different ways to configure the Zoom Lever: Assuming that you wish to use the Lever rather than use the Manual Ring, the first option allows you to zoom continuously [Zoom icon], while the second option [dashes under the Zoom icon] allows Step Zooming, which can be helpful if you have a specific target where you want to initiate and/or complete the zoom action. Both work smoothly, but I can see where Step Zoom might be helpful in recording movies. The third option allows you to assign the Zoom Lever to Exposure Compensation when you choose the [+/- icon]. Doing so will disable the lever from serving Zoom duty, which is something I would not consider, as I like being able to zoom and shoot with one hand when I need to, and I have no problem using the Rear Dial to toggle between Exposure Compensation and Aperture or Shutter settings.
- **Manual Ring (Zoom)** – Lets you configure Manual Zoom with either Continuous Zoom [Zoom icon] or Step Zoom [dashes under Zoom icon] capability.
- **Zoom Resume** – This option lets you decide where the Zoom will be when it is awakened from Sleep, which causes the Zoom to retract. The [YES] option puts the Zoom where it was when the camera went to Sleep; [NO] keeps the lens retracted. I prefer the lens to stay retracted, but this is a matter of personal preference.

More CUSTOM —>

CUSTOM MENU - *continued*

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- **Q MENU** – As explained in the "Organizing Your Camera" section of this document, which appears on pp.5-6, you can store your preferred menu items for easy reference in the Quick Menu, which I have set to the default Function Button 3 on my camera. Up to 15 menu items can be stored there, only five of which will show up at a time within the frame, so you must scroll to see the others. To set your Q Menu, follow directions starting on p.44 of the Advanced Manual. All of the 36 available menu items are listed on p.45. But before you start the process, review comments in the "Organizing Your Camera" section of this document on pp.5-6.
- **Video Button** – Enables/disables the Motion Picture Button.
- **Eye Sensor** – This function governs two submenus that allow you to set the Eye Sensor Sensitivity [Sensitivity] and the method for switching between the Monitor and the View Finder [LVF/Monitor Switch]. Both are very important to efficient shooting workflow, and it's helpful that they are flexible enough to allow for individual preferences.
    - **[Eye Sensor Sensitivity] –** Setting options are [HIGH] and [LOW], which is my choice, as I have found EVF proximity sensors to be a bit twitchy.
    - **[LVF/Monitor Switch] –** It took me a while to make peace with this setting, which offers these three options: [LVF/MON AUTO], [LVF] and [MON]. My discomfort was as much about the [Eye Sensor Sensitivity] option, which I originally had set on [HIGH], as it was about which of the three Switch options I should use. Once I lowered the Sensitivity option to [LOW], I found the Auto setting [LVF/MON AUTO], to work well for my photography.
- **Menu Guide** – Applies when the Mode Dial is switched to the Scene Mode [SCN] and the Creative Control Mode (Artist Palette icon). When switched to [ON], a "Selection Screen" is displayed. Starting on p.93 of the Advanced Manual, you will find illustrations of the various effects that can be achieved within the Scene Mode [SCN]. Starting on p.106 of the Advanced Manual, you will find illustrations of the various image effects that can be achieved within the Creative Control Mode (Artist Palette icon).

RECORDING MENU

Remember that many items from the Recording Menu can be assigned to the Q Menu or a Function Button for quick access without having to enter the Main Recording Menu.

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- **Photo Style** – You can select effects to match the type of JPG you wish to record. RAW files are not affected. With JPGs you can adjust the color and image quality of the effects. With DSLR cameras, I have always used either [Natural] for landscapes and [Standard] for anything else, and I'm sticking with [Standard] for now. The Photo Style feature allows you also to adjust [Contrast], [Sharpness], [Noise Reduction], [Saturation] and [Hue]. So far, I'm happy with having adjusted Sharpness to +2, and Noise Reduction to -5. I've left the other settings alone, expecting to deal with them in post-processing if required.
- **Aspect Ratio** – You can set any of the following ratios: [4:3], [3:2] or [16:9]. Since [3:2] is native to the camera, I use it unless I can save myself some cropping when I'm shooting for a horizontal blog post header for which [16:9] is ideal.
- **Picture Size** – Sets the number of pixels that will be captured. Your choice is [L], [M] or [S]. Since I am using this camera for both professional use and to carry when shooting for fun, I stick to [L], which promises a 20mpx file.
- **Quality** – Sets the compression rate at which photos are to be stored. My settings choice is either best-quality JPG or RAW + best-quality JPG.
- **AFS/AFF** – The Focus Mode Lever has room for only 3 positions when in fact there are 4 possible Focus Modes: Auto-Focus Single [AFS] (for stationary subjects); Auto-Focus Flexible [AFF] (for subjects that potentially could move, but aren't running); Auto-Focus Continuous [AFC] (for action subjects), and Manual Focus [MF]. This menu allows you to choose whether you wish to assign [AFS] or [AFF] to the [AFS/AFF] of the Focus Mode Lever. I have chosen [AFS] for two reasons:
    - Presumably [AFF] works like AI Servo does with DSLRs, and I never liked this option; it makes more sense to me either to set the camera for stationary focus or for action**,** and I like the simplicity of fewer options.
    - While most of the time I rely on 1-Area Auto-Focus Mode, I do find a few occasions for using Pinpoint Focus. In order to set the Pinpoint Focus [+] feature of the Auto-Focus Mode Menu, you must have the [AFS] option selected in the AFS/AFF menu. Were I to set this menu to [AFF], I would have to remember to reset it to [AFS] in order to access Pinpoint Focus [+], which is a larger memory burden than I choose to carry. When testing the [AFF] function, this happened to me, and it took forever to dig out this little nugget of information; so if you find the Pinpoint Focus [+] option to be greyed out, head for the AFS/AFF Menu and reset it.

More RECORDING —>

RECORDING MENU - *continued*

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- **Metering Mode** – Sets the light metering method for measuring brightness. Your choices are (in order of placement): [Multiple], [Center Weighted] or [Spot]. The default setting is [Multiple], which is where I keep it, as it's an excellent overall metering mode.
- **Burst Rate** – Sets the burst speed (number of frames per second) for burst recording when the Drive Mode Dial (top left on the camera) is set to the continuous mode (second position). See pages 167-168 of the Advanced Manual to get the full scoop that will allow you to set your personal preferences. So far I've worked with the [M] setting (7 frames per second), as it works nicely for capturing action such as running humans, dogs, horses, etc., and it provides you with Auto Focus on every frame, which higher settings do not. I have also used the [L] setting (2 fps) for slow-action settings in which there is no need to fire off as many exposures. I am still testing this function, so I've assigned it to the Q Menu for easy access and so that I don't forget to test it under real-world shooting conditions.
- **Auto Bracket** – Sets single/burst recording mode compensation range, and recording sequence for auto-bracket recording when you have set the Drive Mode Dial to AEB (Auto Exposure Bracket), which occupies the 3rd position on the Drive Mode Dial. There are 3 submenus to consider:
    - **[Single/Burst]** – The [Single icon] means you have to press the shutter yourself for each image in the sequence. The [Burst icon] activates the entire sequence when you press the shutter or cable release. I prefer the Burst mode, as typically I use this feature for HDR images that I will process myself, and the fewer presses the better.
    - **[Step]** – This is where you tell the camera how many shots to take at your preferred f/stop intervals. I have found that 5 shots at the 1-stop interval option works best for me.
    - **[Sequence]** – Allows you to determine the order in which the sequence unfolds. I prefer the logic of the [-/0/+] setting.
- **Self Timer** – Sets the timing duration of the Self Timer (4th position on the Drive Dial Mode). When I need to be in a picture I'm taking, I set this feature for [10 seconds/3 shots]. I have read that the [2-Second] option is helpful in preventing camera shake on a tripod, so you might find the Self Timer to be a helpful alternative if you have a tripod-shake issue. Then again, you be better off carrying a sturdier tripod if yours is unstable under normal shooting conditions.
- **Time Lapse/Animation** – Lets you set the following recording parameters for time-lapse shots and stop-motion animation: Start and Stop Time, Shooting Interval, and Image Count.

More RECORDING —>

RECORDING MENU - ***continued***

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Some of these items are available only as JPGs. Some are deployed pre-capture, which might save post-processing time. However, since most pro jobs require post-processing, I question whether pre-capture settings produce better quality than would be obtained through normal post-processing. Time and experience will tell.

- **Highlight Shadow** – Applies to JPGs only, but it is available if your camera is set on RAW+JPG; RAW files will not be affected: You supposedly can adjust the highlight and shadow curve of an image pre-capture, and save up to 3 presets. When working with a high-contrast subject, or even a low-contrast one, this option could save workflow time, as long as a JPG is all you need. However, when I am shooting diverse subjects, and the sun is moving in and out of the clouds, I'm not sure my mind would latch on to this concept. Learn more about this feature on p.124 of the Advanced Manual.
- **iDynamic** – Applies to JPGs only, but it is available if your camera is set on RAW+JPG; RAW files will not be affected: This setting allows you to adjust the contrast and exposure to help control overblown highlights. I did a test in bright sunlight, using all the settings: [AUTO], [HIGH], [STANDARD], [LOW] and [OFF], and the only major difference I saw was in the [OFF] setting, which did not perform as well as the others. Since then, I have kept this function set on [AUTO], and I can say that, like the GH4, this Lumix unit deals with difficult contrast better than any DSLR I ever used; it is one of the factors that I like best about the Lumix cameras.
- **iResolution** – Applies to JPGs only, but it is available if your camera is set on RAW+JPG; RAW files will not be affected: This setting uses what is labeled as "Intelligent Resolution Technology" for the purpose of "raising the resolution," which I presume is the equivalent of increasing edge definition. I have not done sufficient testing to prove this claim one way or the other, but I have used the [HIGH] setting consistently, and I have no complaints in the edge-definition area. Other setting options are [STANDARD], [LOW], [EXTENDED] and [OFF].
- **Handheld Night Shot** – Available automatically only to pictures made using iA and iA+ Mode and applies to JPGs only, but it is available if your camera is set on RAW+JPG; RAW files will not be affected: When set to [ON], photos in very low light are made automatically at a high-burst speed and composed into a single image. I don't use this at all, but I do use a feature with the very same name that is accessed through the SCENE Mode [SCN]. I've made some nice street scenes and building photos at dusk and after dark using it as well as some interesting low-light interior scenes that included moving subjects. I would choose the Scene Mode [SCN] feature over this item.
- **iHDR** – Available automatically only when in iA Mode, JPGs only, and is not available if camera is set on RAW+JPG: When set to [ON], and when the camera detects a high-contrast scene, it automatically fires a burst of 3 pictures at 3 different exposures, then combines them to create a single image. I much prefer the regular HDR function, the setting for which is shown on the next page of this menu.

  TIP: Remember to move Mode Dial to iA (Intelligent Auto) to use this function and the previous one. That's why both are greyed out on the Record Menu.

More RECORDING —>

RECORDING MENU- ***continued***

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- **HDR** – Applies to JPGs only: Allows you to shoot 3 pictures with different levels of exposure, which are then combined in camera to create an image with rich gradation. In this HDR version, unlike iHDR, you can create pictures in PASM Modes, and you can determine how many stops (Auto, 1, 2 or 3) you wish to set and whether or not to apply Auto Align, which adjusts for camera shake.

  I've been doing some on-tripod HDR landscapes using the Auto Bracket setting of the Drive Mode Dial, then processing the images using Photomatix Pro 5 software, but I'm also using this FZ1000 HDR setting, as in most situations I can handhold the camera. Its only inconvenience is having to go to this menu setting to turn the feature [ON] when I'm ready to use it, and [OFF] when I'm finished. When you forget to turn it off, everything you shoot will be a 3-shot HDR image with its accompanying processing lag time. Keeping this feature in my Q Menu helps, but I use it enough that I wish I had one more Function Button in which to store it to speed things along.

- **Multi Exposure** – Page 184 of the Advanced Manual states that this function "Gives an effect like mullti exposure (up to 4 times equivalent per a single image)." Confused? I translate this explanation as meaning that it doesn't produce a "real" double exposure, like the 1970s wedding photography favorite "headache shot," which featured a silhouetted profile of the bride or groom with a front-lighted contemplative pose of the spouse-to-be double exposed into the original silhouette. In testing I verified that you can indeed keep adding exposures until you reach a total of 4, which means that if there are still any headache-shot lovers out there, you can now include the maid of honor and the best man as well. If you want to know more, please read the Advanced Manual, as I'm fairly sure that someone out there (not me) will take this feature and run with it. It possibly could produce some interesting images when the subject is not cluttered, and the backgrounds are the same or similar.

- ***More RECORDING —>***

RECORDING MENU - *continued*

- **Panorama Settings** — This feature, which applies to JPGs only, is one of my favorite "amateur" functions of this camera. It's not for creating flawless artistic panoramas, but it's fun and helpful for grabbing a quick, overall view of your environment to provide a sense of place or to create an image with intentional graphic distortion. Because I typically photograph landscapes in Aperture, Shutter or Manual mode, when I first started with the camera, I would get stumped when I went to the Record Menu to access the Panorama feature only to find the setting on Menu 4/7 greyed out. So here's the cheat sheet I used to jog my memory, along with some observations about how the function works:
  - Turn the Mode Dial to the SCN Mode, and you'll see a gallery of scene style examples.
  - Navigate to the panorama scene, which is listed as [25: Panorama Shot]. It is the last item in the set of style examples.
  - Press the Menu Set button to select the panorama scene. You will see a small [SCN25 icon] appear in the upper left corner of the screen to verify the setting.
  - Press the Menu Set Button again and access the Record Menu [Rec].
  - Press the Display button [DISP.] until you come to Record Menu 4/7, and select [Panorama Settings].
  - You will now see two submenus: [Direction] and [Filter Select]. I have yet to find a need for a filter in the panos I have done, but maybe someday I will. However, I've used all four of the [Direction] options. Most of the time I use the last one in the list of four options, which allows me to rest the camera vertically in my left hand and hold the camera grip in my right hand; and it is most natural for me to sweep the camera from left to right.
  - When you have selected the [Direction] option, half-press the shutter button and you will be ready to shoot.
  - Before you shoot, it helps to have the monitor set to your choice of one of two screens that display a static white center line. That line will help you follow the horizon as you sweep the camera from left to right or right to left when you are holding it in a vertical position.
  - Some photographers hold the camera away from their bodies and look at the monitor as they sweep. I'm more comfortable looking through the Viewfinder, but I have created panoramas both ways.
  - In a very few cases I find that the only way that I can create a hand-held pano that is suitably level is to use one or the other of the horizontal options.
  - If the pano sequence stops prematurely, it's most likely because you are sweeping from an area of less exposure into a brighter one. I've found that reversing the [Direction] so that you shoot from the bright area into the darker one will solve the problem.
  - The +/- Exposure Compensation feature works with the panorama function, and it can be helpful in controlling over-exposure, especially in the sky. To activate the Zebra Pattern that indicates over-exposure, go to the Custom Menu and navigate to menu page [5/8]. I set mine on ZEBRA 2. When I see a sky full of Zebras, I press in the Rear Dial, then move it several clicks to the left. You will learn by experience not to let the image get too dark or your shadows will block up. If it looks too dark through the viewfinder, leave a click or two of Zebras, and you'll likely have an image you can work with in post-processing.

More RECORDING —>

RECORDING MENU - *continued*

- **Shutter Type** – This feature lets you choose Mechanical [MSHTR], Electronic [ESHTR] or Automatic [AUTO]. My choice is [MSHTR], which works well for the wide range of photography I do with this camera. When you set the camera to Silent Mode, which I often do, the unit automatically resets to Electronic.
- **Flash** – The built-in flash provides a number of options, which are described in detail starting on p.203 of the Advanced Manual, which is worth your review. Note that you cannot access this menu if you are in eShutter Mode. My setting choices are: Firing Mode – [TTL] / Flash Mode – Forced Flash [single lightening bolt] / Flash Synchro – [1st] / Flash Adjustment – I have this set to [0], but I adjust it depending upon whether the flash is being used as primary or fill illumination.

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- **Red-Eye Removal** – Automatically detects red eye caused by the flash and corrects the image data accordingly. Can be set to [ON] or [OFF].
- **ISO Limit Set** – I have chosen to set the ISO limit to 3200, as only rarely will I want to exceed limit, and I like a reminder that I've reached it when the camera is set to Auto ISO. When I'm shooting serious landscapes I manually set the ISO, usually at 100.
- **ISO Increments** – Allows you to determine whether ISO sensitivity settings values changes in steps of [1/3EV] or [1EV], which is my choice.
- **Extended ISO** – ISO sensitivity can be set to a low of 80 if you choose the [ON] option, which I do. Otherwise ISO options start a 125. The [ON] option also allows ISO to go as high as 25,600, which allowed me to photograph the inside of my black waste basket to produce lots of colorful grain, which is helpful only if you should ever have a similar artistic need.
- **Long Shutter Noise Reduction** – This feature, when set to [ON], calls up an algorithm that "automatically removes noise that appears when the shutter speed becomes slower to take pictures of night scenery, etc." by making a second exposure with the shutter closed to identify and remove excess noise generated by the long exposure. In a desire to overcome my natural bent toward skepticism, I set it to [ON], but I haven't tested it yet.

- ***More RECORDING —>***

RECORDING MENU - *continued*

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- **i.Zoom** – Applies to JPGs only: Normal maximum zoom magnification for the FZ1000 is 400mm, and [Intelligent Zoom] provides twice that magnification, while minimizing image quality deterioration when set to [ON]. I've made many 800mm images of architectural details, birds, animals, and action shots of people playing with dogs running on the beach and in the surf. While they might not be of competition quality, they are quite engaging, and I am grateful to be able to photograph them without lugging a very expensive long lens and tripod.
- **Digital Zoom** — Applies to JPGs only: When set to [ON], Digital Zoom will allow you to extend the zoom range to 1600mm, and you might want to play with it to see what you consider to be the outer limits for an acceptable image. I find that 800 is about my limit, so I keep this function set to [OFF], unless I have a very compelling reason to record an image of less quality.
- **Color Space** — RAW capture allows your choice of [AdobeRGB] or [sRGB], but JPG settings default to [sRGB], which is my setting choice for either method of capture.
- **Stabilizer** – This setting allows you to choose [Normal icon], which automatically compensates for vertical and horizontal shake, or [Panning icon], which corrects for up/down movements. For still photography, I chose the first setting [Normal icon].
- **Face Recognition** – Supposedly this setting goes beyond the typical Face Recognition technology of bridge cameras by automatically exposing for "registered" faces. I prefer to set the AF Box on a person in the plane at which I wish to place the focus in a group, therefore I choose the [OFF] setting. Use of this setting seems to me to depend on individual preference or experience. If you wish to register faces, then select [MEMORY] and follow registration directions. When no faces are registered, this feature will default to [OFF]. Once a face is registered, the function defaults to [ON].

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- **Profile Setup** – If you set the name and birthday of your baby or pet in advance, you can record their name and age in months and years in the images in which they appear. Like the previous setting, if you have a use for it, then follow the directions in the Advanced Manual; otherwise set it to [OFF].

Troubleshooting

The Troubleshooting chapter in the *FZ1000 Owner's Manual for advanced features* starts on p.343. Following are notes I made on issues that had me scratching my head and scrambling for answers:

You can set the Pinpoint Focus Mode only if your shutter is set to AFS (Auto-Focus Single). Page 1 of the Recording Menu.

Flash does not work with the electronic shutter. You must set it to the mechanical shutter. Page 4 of the Recording Menu.

When Silent Mode is set to [ON], the flash is not activated.

How to adjust the internal flash to more or less power:

- Set your camera to any of the PASM settings on the right-hand top Mode Dial.
- Press the Menu Set Button and navigate to the Record (Rec) menu.
- Navigate to menu 4/7 and scroll down to Flash
- Select Flash then scroll down to Flash Adjust.
- Use the Rear Dial and turn to right or left to increase or decrease the flash.
- When you are where you want to be, press the Menu Set button again.

Don't forget to physically open the flash before you try to use it. Flash open button resides on the left side of the viewfinder, just above the Diopter wheel. Push the Flash open button forward to open. Gently push the flash down to close it.

ISO goes to 3200 with electronic Shutter [ON]. It goes much higher when set on the Mechanical Shutter.

When a menu item is greyed out, it's because it must be activated by a mode other than the mode you are in. In most cases the mode is either the Scene Mode [SCN] the Intelligent Auto Mode [iA] or the Creative Control Mode [Artist Palette icon].

If you are not able to access a feature that you expect to be present in any given camera function, Go to the *Owner's Manual for advanced features* to find the page(s) that refer to the function. Panasonic has done a good job with documenting features that do not apply to a given function. I keep the interactive PDF version on my computer desktop to make the process of finding something as easy as possible. I start by executing a [Find] command, using the name of the feature for which I need more information.