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JANUARY 2009

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Technology

How it Works

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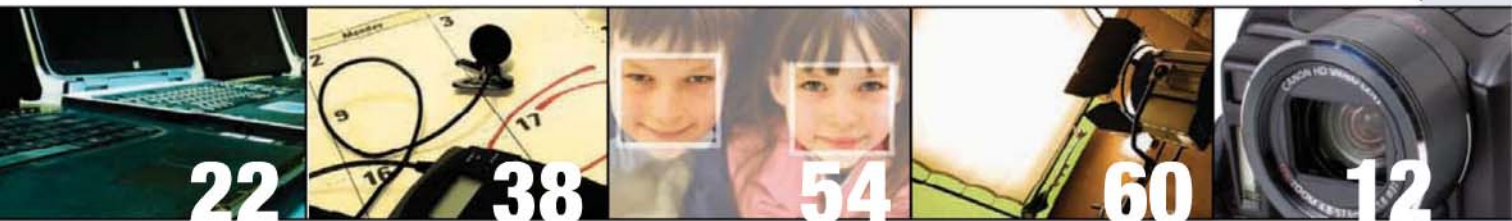
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VIEWFINDER

by Matthew York

Tiny Camcorders

The size of camcorders has been shrinking since their inception. The first camcorders were typically shoulder-mounted and much heavier and larger than today's units. People tend to hold heavy things with their arms to their sides, using both hands under the load as if carrying a sandbag. This method does not work with camcorders, because we need to push buttons, turn knobs and look through a viewfinder. So the manufacturers designed past camcorders so that the operator could "shoulder the load" and make adjustments while watching through a tiny eyepiece. The people who design camcorders practice ergonomics, the scientific discipline of designing for human needs.

The camcorders of 2009 are much smaller and lighter, but they are too small to touch the user's shoulder. You hold many of today's camcorders as you would a still photographic camera, using one or two hands to hold the camcorder in front of your face. The ergonomics of the still camera are very different than those of a camcorder, which captures moving images. In order to capture a good picture, a photographer must hold a still camera steady for a mere fraction of a second. Shooting video requires a very steady camera. Even slight movements result in unstable and amateurish-looking video. The camcorder manufacturers began working to solve this challenge many years ago with image stabilization (IS). This is a mature field of endeavor and has resulted in fantastic features found on most of today's camcorders. However, camcorders are still shrinking, and these IS features are sometimes inadequate.

The tiniest camcorders are as small as a deck of cards and can be extremely difficult to hold steady. You can always get a steadier image while shooting video if you lean against



something solid, like a wall or a table. With a medium-size camcorder, this works well. However, the video from tiny camcorders can still look a little shaky, especially when using the zoom. You can get an even steadier image if the camcorder itself is actually touching the wall or table. When that is not practical, the next best thing is to use your hands and arms to press against a wall or table.

Many of our readers may feel that these tiny camcorders are standard, but they are very handy – you can keep one with you all of the time. They are unintrusive, so they intimidate people less. People act more naturally while being shot with a tiny camcorder, and some of them even allow immediate uploading to video-sharing sites on the internet. These cams are inexpensive, enabling shooters to take risks that may damage their main cameras. While tiny cams can't make fantastic video, they can make great video, so one could be a great second or third camcorder. ■

M. York

Matthew York is **Videomaker's** Publisher/Editor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14068** in the subject line.

Videomaker

Videomaker empowers people to make video in a way that inspires, encourages and equips for success. We do this by building a community of readers, web visitors, viewers, attendees and marketers.

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IN BOX

readers' letters



Inspired by *Viewfinder* Column

Mr. York - Wow! That article you wrote for the September issue sounded very "inspired." I always read what you have to say before delving into the magazine. I've seen some times when you've been disgruntled by "YouTube" videography and the absurdity of some of the postings there - mainly, other people's misfortunes. I appreciate how you tried to lend the idea of getting back on track to the readers and focus on good video.

It's easy to get overwhelmed with keeping up in video - and that's everything: new cameras, lighting techniques, cinematography, editing platforms, new media, you name it. I work a full time day job and run a part time video business with friends. We make a little - enough to keep buying new equipment but that's about it, and we don't actually WANT to work two full time jobs and not have lives. I really appreciate the way you "think" and I'm glad to hear your inspirations. This was one time I thought I'd send you a little feedback. Robert Livingston

Separation of Editorial Coverage versus Advertising

As a former art director to several special interest magazines, I found it joyful to read and share your angst with the tensions of politics involved in the production of such a magazine. ("Between Editorial and Advertising", *Viewfinder* column, November 2008). It seemed to be a response to something or a venting exercise, but I hear you loud and clear and I'm glad you clarified that your magazine does not give in so much to the point of changing its editorial voice to sway towards the advertisers. I subscribed to several magazines in the areas of video/film production and have let all the others lapse. I will always look forward to my issues of *Videomaker*. Power on! George Stoll

Sound Needs Consideration, Too.

It's like coming upon water in the desert to find a review of sound acquisition equipment, in this case the RODE NTG-3 Shotgun Mic, in a digital video magazine, to say nothing of such a technically sophisticated and nuanced article. As the author points out, sound is just as important, if not more important, than picture. And further, we are indeed awash, especially in magazines and reviews, in endless opinions of the ever-proliferating camera flavors of the month. There are certainly as many microphones in the world as camcorders, but this remains a mostly secret world. This review is only missing some comparisons to the other RODE shotguns and maybe even other shotguns in the same price range. Maybe that's another article. To say nothing of mixers, windscreens, XLR adapter boxes, headphones, and booms.

And in my humble opinion the rock-core microphones are a wired lavalier and a cardioid, not a wireless and a shotgun. But that's just me.

Thanks to *Videomaker* for including at least one review of a microphone in the October issue. Would that this could become a regular feature and sound acquisition could assume a larger and more balanced profile amidst the image acquisition discourse.

Keep up the good work, Robert Withers

The World is Reading *Videomaker*

I would like to compliment you and your team on your great magazine! I am a British filmmaker that is based in Hong Kong. Magazines like yours are extremely helpful to guys like me, who sometimes struggle to stay abreast of the latest developments in production. Thanks for keeping us informed, you are doing great work!

I have a question for you regarding the August 2008 *Viewfinder*. Who were this OEM's you were describing? Please

Address your letters to In Box, c/o *Videomaker*, P.O. Box 4591, Chico, CA 95927. *Videomaker* is unable to process personal replies; however, questions of interest to the *Videomaker* readership will appear in print. You can also submit In Box entries by e-mail: editor@videomaker.com.

let me know. I would like to approach some of these companies to assess their products (HD video cameras) and possibly do a deal. I find it ironic that I and many of my colleagues had no idea of this manufacturing situation. Some of my contacts are extremely knowledgeable in this field; they are running big companies. There is a climate in Hong Kong where people do not share interesting information to protect their own interests. Sadly, I and many others find this slightly counterproductive. It's a funny world. Thanks to you and your team we are now a little bit wiser. Name Withheld by Request

There are a number of contract manufacturers in Asian countries that will build camcorders for any distributor if the price is right. For a few leads (this is a somewhat dynamic list), check out www.alibaba.com/showroom/Digital_Video_Camcorder.html.

-The Editors

The World is Getting Smaller

Like many Brits who no longer have anything approaching a magazine like *Videomaker*, I find the internet version very informative and interesting. However, may I through you draw the editor's attention to the fact that certain articles, e.g. the one on copyright in the current issue, are seriously misleading for readers other than those working in the US jurisdiction.

For example European law is very much more restrictive regarding photographing people in public places - in France especially visitors are likely to be accosted for money.

Another example refers to the final recommendation - to copyright your own productions. In the UK every publication or creation, (though not an idea or draft), is automatically the copyright of the producer. Nothing has

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Videomaker WORKSHOPS



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QUICK FOCUS

by Jennifer O'Rourke

Viewer Beware! Don't Get Stung by DTV Upgrade from Your Cable Company

We recently spotted a story from *Consumer Reports* about how some cable TV companies are trying to take advantage of the confusion going on over the DTV conversion on February 17th. Consumers Union, the parent company, writes that some channels that viewers enjoy on their current cable tier are being scrambled and placed on a higher tier, requiring the viewers to rent set-top boxes for every TV in the house to watch them. The *CR* report goes on to say that the February 17 digital TV transition change affects only those people who are watching TV via an antenna only, and that this is a deceptive excuse for a rate hike. The story adds, "If the cable company says the channel changes are due to DTV conversion mandated by the feds, notify your state's attorney general. They're not." (*Consumer Reports*, November 2008). Meanwhile, if you're wondering how the digital change will affect you as a video producer, read our feature, *Digits Over the Air: The End of Analog*, page 38 in this issue.



More Free Stuff! proDAD Adorage and Vitascene Effects

Many software programs provide a free trial download, allowing users to try before they buy, but **proDAD** is giving full starter kits of its popular Adorage and Vitascene Effects software free, no strings attached. These starter kits have up to 170 effects and plug-ins that are compatible with most editing applications. Got a wedding video to edit or that holiday compilation? Now's a good time to check it out.



The Adorage Starter Kit is a compilation of transitions and effects that include sports-related media, wedding effects and other family and celebratory themes. The kit includes plug-in support for Adobe Premiere Pro and Elements, Avid Liquid, Canopus Edius, Sony Vegas and Vegas Pro, Ulead MediaStudio Pro and Magix Video Deluxe 15 NLE applications.

The Vitascene Effects kit has many professional-grade effects that include film look and text effects. Upgraded users will find support for Adobe Elements and Premiere Pro; Avid Liquid 7.x, Xpress 5.x and Media Composer Adrenaline 2.x; Canopus Edius 4.x, 5.x and Neo 1.x; Magix Video Deluxe 2008 and Deluxe 15; and Sony Vegas 5.x, 6.x, Vegas Pro 7.x and 8.x.

Of course, proDAD hopes that you enjoy the starter kits so much that you'll upgrade to its paid versions, which include many more effects. See *Videomaker's* October 2008 issue for a full review.

Adorage Starter Kit: www.prodad.com/starter/adorage.html

Vitascene Starter Kit: www.prodad.com/starter/vitascene.html

Free HD Video-Sharing Site

We discovered a new video-sharing site producers might enjoy. **Share My HD** by Motionbox is geared towards sharing, storing and editing HD video... free. Motionbox recently upgraded storage from 300MB to 1GB, which could be up to 2 hours of footage, depending on your format. Not too bad for free storage. Upgrading to a Motionbox Premium account for about \$30 gives you unlimited storage, a nice plus for video producers working in a small town like *Videomaker's* headquarters who need to share videos with their L.A. partners.

Users of the free account have an unlimited sharing capacity and online editing, while the upgraded program allows for larger file uploads and unlimited high-quality downloads, along with nice high-quality playback. You can keep your account private, share it with a select few or share with the world; it's your choice. We did a quick test upload and found the site and directions easy to follow and very intuitive. Motionbox sent us an email to verify that our upload was complete. We then compared the same video with one we put on YouTube, and the quality was pretty darn nice. You can edit your videos from the site and allow users to mashup or edit them, too.

Even if you're still shooting only standard def, the quality of your videos on this site beats the low-level grade of many other sharing sites. Motionbox says this is because they convert your videos automatically to H.264, a high-quality codec, before they play them back on the web, while also using a higher bitrate.



Along with forums about Motionbox and how to use it, you'll find within the site *Ask Eric*, a video tutorial guru that walks you through the steps to creating your account and uploading. It's quick and easy for even the most webphobic videographers.

Share My HD is definitely worth a look for a free sharing site for high-definition video or for any video producer who is looking for something better than the lowest common denominator.

<http://sharemyhd.motionbox.com>

New From Videomaker!

Our popular Tips & Tricks series is now available on DVD. Our four newest DVD's include **Outdoor Videography**, **Field Audio**, **Lighting** and **Special Effects**.

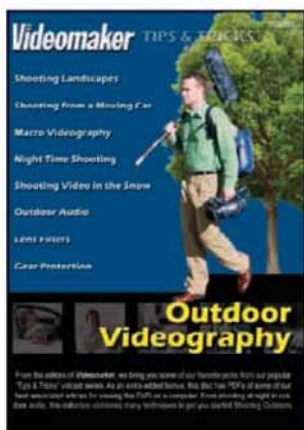
These instructional vidcast collections will help you get started making better video by demonstrating tips and tricks when shooting outside, gathering and isolating the best sound while in the field, lighting tricks used by the pros that go beyond the basics and some quick and simple ways of creating common special effects.

Also included on the DVD's are many related PDF's of our best articles and other bonus material.

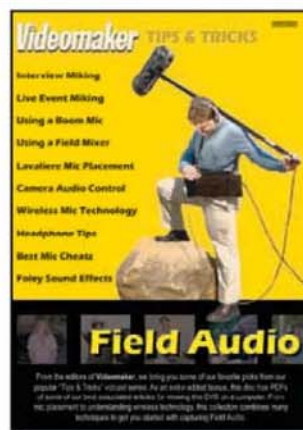
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by Charles Fulton



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www.sonymstyle.com
Suggested Retail Price:
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Sony



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Matrox RT.X2 LE gives you all the realtime editing power and additional productivity tools you need to get the most from Adobe Production Premium. Whether you work in DV, HDV, P2 MXF, XDCAM EX, or a combination, you'll find that RT.X2 LE goes far beyond the capabilities of software-only in all aspects of video production – capture, editing, content creation, and delivery. Matrox RT.X2 LE will save you time on every project, letting you concentrate on creating your best work and building your business. Here are just some advantages of this revolutionary hardware:

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- Extremely user-friendly
- Great picture quality
- 45 hours of shooting time

WEAKNESSES

- Manual controls difficult to control, due to toggle

Canon's new VIXIA HG21 is a high-definition hard-disk-drive powerhouse, with 120GB of hard-drive space and a ton of exclusive Canon-only features. Prosumers rejoice: the HG21 is the perfect fit for family events, weddings and entry-level professional videography. At \$1,300, the HG21 is a welcome addition to the HDD library.

How Does It Look?

Capturing 1920x1080 high definition, the HG21 provides a ton of space to play in with its 120GB hard drive. Not only that, it offers up to 45 hours and 15 minutes of recording time in LP mode! And it still looks good, capturing 1440x1080 resolution. Videographers are also able to record up to 11 hours and 5 minutes in MXP mode, which captures video at 1920x1080 resolution.

The 12x HD lens offers breathtaking video that we found looked great even when zooming in from far distances. We liked that Canon offered three different levels of zoom control, to ensure clean-looking movement. The digital zoom is very powerful at 200x. Remarkably, it stayed very sharp and

didn't get too shaky until close to the 200x mark. The SuperRange Optical Image Stabilization manages to handle the task very well, even under extremely harsh movement. The DIGIC DV II Image Processor adds advanced color reproduction in dark and light scenes, as well as skin tones.

Autofocus responds quickly to motion and didn't seem to lose much image detail, even under the shakier conditions. Canon calls the quick reaction time of the autofocus the Instant AF. This works by using an external sensor to find light more quickly, to reduce focus lag time. The HG21 also has a peaking option, which helps to focus images by using an outline defining what you should focus on. Manually, adjusting the focus and exposure took a little longer than we expected, and it seemed that the toggle made things more confusing. Toggling down took us through the options: up let us make our selection, and left and right were the adjustments. It didn't feel as intuitive as the rest of the camera.

The mic found its home just under the lens. We were pleasantly surprised

to find that, in test after test, our audio ended up sounding very clear and picked up very well. Even from fifteen feet away, we still heard our subjects talking almost as well as we did from four feet away. Plugging in the mic left us with even better-sounding clips.

Canon also provides the option of capturing video on an SDHC memory card. We thought this was a good prospect for viewing clips right away, since all we had to do was insert our memory card into a computer. Since you get only 35 minutes of captured video per 2GB-memory card, we recommend that you capture the majority of your clips on the hard drive. The HG21 offers impressive color saturation, due to the CMOS image sensor. Unique to Canon is the noise-reduction technology that maintains quality in low-light shooting conditions. We liked how our photos came out at the 3.1-megapixel size. Canon brings an element of the digital camera world into the HG21 with the display of a

\$1,300

histogram as you take each photo. This gives you the option to adjust exposure as you shoot, based on a graph that displays how much brightness you are exposing your subject to. The Grid Marker feature helps you compose your shot by lining up the image to the grid. We were also able to capture still frames during video playback – an exclusive to Canon.

Size It

It's small, comfortable and very pretty. The HG21 clocks in at a meek 1.1 pounds and fits like a glove. Unlike on most HDD camcorders, the power button resides just on top of the viewfinder. The battery pack attaches to the back, and the hot shoe sits on top. The toggle, which stands just right of the battery pack, controls all of our functions. The HDMI, A/V and component cable outputs all land on the right side of the camera, as does the mic input. The light makes its home next to the lens and sits

just under a flash. The USB output and SDHC card slot lie on the inside of the LCD. We liked the 211,000-pixel 2.7-inch widescreen LCD. This was where we found our menu, the gatekeeper for most of our functions, including the presets: portrait, sports, night, snow, beach, sunset, spotlight and fireworks. Here too are the standard Canon shutter options, including AE (Automatic Exposure), P (Programmed Automatic Exposure), TV

(Shutter Priority Automatic Exposure) and AV (Aperture Priority Automatic Exposure). We found the menu itself very easy to navigate, and it turned out to be very intuitive. The HG21 comes with a battery pack; power adaptor; wireless controller; component, USB and stereo video cables; Digital Video Solution and Pixela ImageMixer 3 SE editing software.

That's a Wrap

Canon's VIXIA HG21 fits in a jacket pocket, weighs 1.1 pounds and gives meaning to the term "good things come in small packages." The VIXIA HG21 is a very impressive camera that handles well and feels very nice. It's easy to work with and even easier to capture impressive HD video with. It's a great entry-level prosumer camera that meets the requirements of both high-quality capture and high-quality comfort. Very innovative and fun to play with, too! ■

SUMMARY

The VIXIA HG21 is ultimately a very easy-to-use, highly-advanced and very intelligent camera. It can fit the needs of almost any type of shooter and produces great HD-quality video.

Tom Skowronski is *Videomaker's* Associate Editor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use article #14299 in the subject line.



TECH SPECS

Format	AVCHD, 120GB HD, SDHC	Progressive Scan	No
Image Sensor	1/3.2" CMOS sensor, RGB primary color filter	Microphone In	Yes
Video Effective Pixels	Video: approx. 2.07 megapixels (1920x1080); still image: approx. 2.76 megapixels (1920x1440)	Headphone Jack	No
Interchangeable Lenses	No	Speaker	Yes
Optical Zoom	12x optical/200x digital	Wireless Remote	Yes
Focal Length	f4.8 - 57mm	Battery Charger	External charger provided
Zoom Speed	Variable/3 fixed zoom speeds	Battery Type	Lithium ion
Max f-Stop	f1.8 - 3mm	On-Board Video Light	Yes
Manual White Balance	Yes	Accessory Shoe	Mini advanced
LCD Monitor	2.7" multi-angle vivid widescreen LCD (approx. 211,000 pixels)	Dimensions	3.1"Wx3.0"Hx5.5"W (80x77x139mm)
Video In	No	White Balance	Daylight, shade, cloudy, tungsten, fluorescent, fluorescent H, auto, manual
Video Out	AV cord (S-video, composite, stereo RCA), USB port	Recording Media	Internal hard-disk drive (120GB) or SD/SDHC memory card
		Programmed AE	Auto, program, AV, TV, cinema, portrait, sports, night, snow, beach, sunset, spotlight, fireworks



TEST BENCH

Goin' Prime-Time

Redrock Micro M2 35mm Lens Adaptor



VM
TESTING LABS

One of the main tools of the cinematographer's art for controlling image properties is depth of field (DOF). Briefly stated, the depth of field is the area in the frame that is in acceptably sharp focus. Knowing how to manipulate this field helps the cinematographer call attention to certain aspects of the image. For example, if your subject is in front of a crowded parking lot, you may want to arrange the depth of field so that she is in sharp focus and the cars behind her are blurry, so the eye won't be distracted by the busy background and will naturally be drawn to the subject.

You control depth of field by the manipulation of a few factors: the size of the lens aperture (the larger the hole, the smaller the DOF); the length of the lens (the longer the lens, the smaller the DOF); and the size of the CCD/

CMOS chips themselves (the larger the sensor, the smaller the DOF).

This last point is where 35mm adaptors such as Redrock's M2 come into play. The image sensors in most camcorders are very small compared to the 35mm frames of film cameras. Because of this, the depth of field of video cameras is very large compared to that of film. This can be a good thing, by making focusing less critical. If you're a little off in the focus, you're still going to be in the acceptable range. But if you're trying to achieve a shallow DOF, for specific composition reasons, or you're trying for a shot-on-film look, this is a limitation that you need to overcome.

The imagers in your camcorder are a constant; you can't just slap a 35mm lens on the front. In order to create a larger image plane so that you get a shallower DOF with the same small imagers from your camcorder, you have to create a secondary image plane and use the camera to focus on that. That's what 35mm adaptors do: create a new image through a 35mm lens on a piece of ground glass that your camcorder focuses on.

by John Burkhart

Redrock Micro

PO Box 271395
Flower Mound, TX 75027
www.redrockmicro.com

STRENGTHS

- Great-looking shallow DOF
- Film-like images

WEAKNESSES

- Complicates shooting process

\$1,745

(as tested, lens and camcorder not included)

Redrock Micro M2

Redrock has long been a name associated with 35mm adaptors, and their M2 adaptor is a very popular model. The unit we tested came with the adaptor, rods, follow focus control, MicroX flip accessory, quick-release system and adaptor rings. I like that you can purchase these items in a bundle or as separate pieces, depending on how you want to customize your setup.

The first question you want to ask yourself is this: What kind of 35mm lens am I going to use? You can order the M2 with mounts for Nikon, Canon, Minolta, Olympus, Pentax and PL lenses. In this case, older lenses developed before the advent of all these new-fangled SLR autofocus and auto-exposure drives are better, because they offer the full manual controls that you will need to use the adaptor effectively. There's quite a thriving market now for older SLR lenses, so you should be able to easily find one that meets your needs.

TECH SPECS

Lens Mounts Supported Nikon, Canon, Olympus, Pentax, Minolta, PL

Image Plane Rotating ground glass

Power 9-volt battery

Weight 1lb, 15oz

One caveat about using 35mm lens adaptors is that, in most cases, due to the way the optics are arranged, the image coming to the camcorder is upside down. This is fairly easy to fix in post by just flipping the image, but it is very distracting during shooting, especially when you are trying to tilt and pan backwards. If you're lucky enough to have a camcorder that can flip the image in the viewfinder, then you'll be fine. If you don't, a common technique is to simply attach the camera to an external monitor, and turn the monitor upside down on set. Included in our package was Redrock's MicroX accessory that fixes this problem by attaching to the adaptor and flipping the image to the correct orientation before it gets to the camcorder.

The M2 contains Cinescreen II, a new ground-glass element that improves light transmission, sharpness and contrast over the previous model. One difference between the M2 and some other 35mm lens adaptors is that Redrock incorporates a rotating image element that minimizes dust particles and grain from the ground glass in your picture, unlike adaptors that have a static image element. This does mean, however, that you have to turn the adaptor to On, and it's powered by one 9-volt battery.

In Use

Setting up and using the M2 is a pretty simple process, once you've attached the adaptor to your lens and assembled the supporting rods. The unit with lens is far too heavy to use handheld, and it puts enormous strain on your camcorder's built-in lens if you don't support it. Redrock recommends that, once you have attached the M2, you point the rig at a bright light and open your camcorder's aperture wide open. Then reduce the aperture of your 35mm lens until you can easily see the screen. Zoom in so the image takes up the whole frame, then set the focus until the screen's grain comes in nice and sharp, and then lock the focus down on the camcorder. From now on, you will use the focus control on the 35mm lens

to control the focus of the scene. To get optimal sharpness, set the 35mm lens aperture between f4 and f5.6, and open and close the iris on your camcorder to set exposure. Only if it's too far out of range should you go to your 35mm lens and adjust the aperture there.

In the field, you simply turn the unit on and use the focus controller on the M2 to focus your image, rather than using your camcorder's controls. It sounds easy when you describe it like that, but there's a reason why there's a focus-puller position on feature films. You will definitely need to practice a little before using this adaptor on a shoot. Because the depth of field is much shallower than you're used to, getting exact focus is much more critical, and doubly so if you're shooting in HD.

Redrock has helpfully designed its focus control with a white area where you can make focus marks, allowing you to find different focus points visually. The most reliable method is still the lowest-tech method. Using a tape measure run from the adaptor to your subject, dial that length in on your 35mm lens. You will almost definitely need some kind of monitoring solution on set as well, since adjusting fine focus is extremely difficult using the small LCD panels and viewfinders on your camcorder.

If this sounds like a lot of hassle, it is. But the results do speak for themselves when you see the footage. The M2 allows the cinematographer much more creative freedom in composing the shot, and the shallower depth of field does make your video look a lot more like a feature film, adding quite a bit of production value to the finished piece. ■

SUMMARY

If you're going for the "Film Look," the first place to stop is the Redrock Micro M2.

John Burkhart is **Videomaker's** Editor in Chief.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14285** in the subject line.

THERE'S AN AZDEN SHOTGUN MIC DESIGNED TO IMPROVE YOUR AUDIO QUALITY



SGM-1000

A phantom powered shotgun mic with new high-performance microphone element that features: phantom 12-48V or 1.5V "AA" battery • wide frequency response • highly directional pick-up pattern • high sensitivity/low noise • shockmount holder with new taller integrated shoe mount • XLR output • switchable low-cut filter • On/Off power switch • standard foam windscreen • length - 310mm (12.5"). Battery and cable not included. MSRP \$360.



SGM-2X

Ideal for full-size cameras, it is 2 mics in one. Combined, they are a 15.75" low-noise, wide bandwidth, shotgun, with balanced low-impedance output. Includes same features of the SGM-1000 but no phantom power. The short barrel (8.125") is a general purpose omni mic. MSRP \$310



SGM-1X

SGM-1X. At 298mm (11.75") with XLR output it's ideal for smaller DV cams with XLR audio inputs. Comes supplied with the same unique integrated shockmount with shoe-mount as the SGM-1000. Cable not included. MSRP \$230



SGM-X

At 216mm (8.5") the mini **SGM-X** is a complete system, including windscreen, shoe-mount holder and mini cable. With mini output, the SGM-X is perfect for smaller DV cams with mini-jack mic inputs. MSRP \$155



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For full specifications, visit our website: www.azdencorp.com



3-for-1 Support

Manfrotto 585 Modosteady 3-in-1 Camera Stabilization System



"The size of camcorders has been shrinking since their inception," writes **Videomaker** Publisher/Editor, Matthew York, in this month's editor's column (see page 4), and along with that smaller size come big support issues.

Aside from missing many features the bigger camcorders offer, due to the lack of real estate, these tiny cameras have the big problem of getting a steady shot. Manfrotto, known for rock-steady tripods for cameras of all sizes and weights, saw the need to support these smaller video cameras and jumped into the stabilization market with the 3-in-1 Modosteady stabilization device. The Modosteady lends a helping hand, so to speak, by giving the user three support options: tabletop tripod, shoulder support and camera stabilization. Depending on which way you wish to use it, the arm on the device twists and turns and swivels and locks and can be more fun, or more frustrating, than plopping your camera onto an ordinary tripod.

Tabletop Tripod

Before we delve into the mechanics of this interesting-looking tool, let's break out the 3-in-1's functions. The red rubber grip handle opens like a butterfly into three small legs, allowing the user to set up the camera on a table fairly quickly. The ball socket just above the red handle swivels to help you get an accurate horizontal level. Once we figured out how to open the butterfly, we had no trouble setting up the mini-tripod. The fixed height is 5.1 inches, but this gets the camera off the ground, and the ball socket allows you to tilt it up or down, which is one of the downsides to putting the camera flat on any surface. Your shot is usually looking slightly downward without a small prop under the lens. This is also nice for setting the camera above you on a fence or car top, because you can tilt the lens down without worry that the camera will

by Jennifer O'Rourke

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Ramsey, NJ 07446
www.bogenimaging.us

STRENGTHS

- Easy to use
- Ergonomic grip design
- Good warranty
- Compact size

WEAKNESSES

- Quick release is awkward
- Knob screws don't inspire confidence
- Lacks bubble level

\$115

slip as it can when you're attempting the wallet-under-the-butt trick.

Shoulder Support

Handheld shots are difficult to hold for long, and holding a camcorder steady for a shot of 30 seconds or longer can give you the shakes, even if your camera weighs just a few pounds. By racking the handle joints of the Modosteady out, holding the rubber handle

As a shoulder support



in your right hand and balancing the soft rubber "foot" on your right shoulder, you have your flip-out viewfinder centered directly in front of you. We felt this gave us a certain level of support, but the inside of one's forearm can grow tired quickly. We did find it comforting when we used the shoulder support setup while propping an elbow on a table. We also found that any focus, zoom or other adjustment we needed to compose the shot caused us to tip the camera to the side a bit.

Stabilizer

We found the stabilizer function of the Modosteady to be the most interesting option, as well as the hardest to master, but that's normal for stabilizers. If you've ever used any type of stabilizing device, you know that the placement on the head of the device is just as important as the way you set up the counter-balance.

The quick-release attachment plate has several holes, allowing you to adjust the balance of cameras of various sizes and those that have more weight on the back or the front. Once you get the right plate placement, you lock it in with a pin on the left side, and then adjust a second pin on the right side to set your side-to-side horizontal level. (Not to cause confusion, but due to the Modosteady design, these two pins are actually on the opposite sides when you are using this device as a shoulder mount or tripod stand. You have to loosen the camera plate and twist the camera around for this option.) The 3-jointed arm becomes the counter-balance, and two locking knobs on the top and bottom joints adjust accordingly. You need to loosen the ball socket and let it swing free, while holding the plate in

your right hand. You then eyeball the horizon in your viewfinder, raise or lower the locking joints and rubber "foot" to set the balance, then lock them down. When you are using the hand grip with the shoulder mount or tripod, the ball joint on the grip is locked down, but as a stabilizer it stays loose, so you can move left, as the camera balances right.

The Mechanics

In theory, the Modosteady 585 stabilization device sounds like a nice fix for controlling those shaky handheld shots from tiny camcorders, but it's got a few oddities that need addressing. First, the quick release isn't quick. You have to first unscrew a tiny knob before you can lock the plate in, and it's somewhat awkward to reach if you need to pull the camera quickly. It also feels as if you might unscrew it too much and pull the pin out. The opposite concern goes for the other knobs: it feels as if you're going to tighten them too much and strip the threads.

The device doesn't have a level bubble, which would be very helpful. It's easy to concentrate your focus on the viewfinder only to discover you tilted the camera too far. The shoulder support is probably the least useful option; it would be nice if it could sit over your shoulder, rather than adding more weight under it.

The Modosteady runs around \$115, which is a real bargain for a stabilizer, but, if you use it more as a tabletop tripod, you can get one designed for that purpose for half that price. We tested this device with two types of cameras: one we typically call the Football grip (long horizontal barrel) and the other we call the Beer Can grip (tall vertical body). Both sit well on the device without problems. The Modosteady can carry a maximum load of just over one pound; by attaching a shotgun mic to one camera, we exceeded that requirement, so know your gear before you shop.

We liked the feel of the rubber ergonomic pistol grip in our hand; we don't think our hands would tire of holding it if we needed to shoot for any

As a stabilizer device (camcorder not included)



length of time. We also found that the Modosteady site, <http://modo.manfrotto.com>, takes you to a video tutorial that is much more helpful than the paper pictorial that comes in the box. As most Manfrotto products, this is sturdy and well-built and comes with Manfrotto's 2-year limited warranty plus an additional 3 years at no extra cost, if you register your products by mail or online. ■

SUMMARY

We applaud Manfrotto's attempt at designing a stabilizing device for the smaller camcorder market, but we'd like to see a few more tweaks to be a really good hand holding solution.

Jennifer O'Rourke is **Videomaker's** Managing Editor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14064** in the subject line.

TECH SPECS

Minimum Height	5.1"
Maximum Height	5.1"
Weight	1.1 lb
Maximum Load Capacity	1.7 lb
Packed Size	7.5"L x 3.5"W x 4"H



TEST BENCH

The Professional



by Charles Fulton

iBUYPOWER

11581 Federal Dr.
El Monte, CA 91731
www.ibuypower.com

STRENGTHS

- Great component choices
- 64-bit Windows Vista is very stable

WEAKNESSES

- Premiere Elements not pre-installed
- Driver oddities (easily solved, but still inconvenient)

\$1,799

The best way we've found to think of iBUYPOWER's Video Pro system is as a well-primed canvas that is ready to accept the paint of your video projects. It's the first 64-bit Windows Vista-based system (this one happens to run Home Premium) to cross our threshold, and it's definitely a quick machine.

The nicest touch? Proof that the system is hand-built of carefully-selected parts, as evidenced by a sheet of performance test results that are provided with each system and filled out with a blue ball-point pen by a technician. It's a really nice touch that says "we're serious about giving you a great system."

A Pre-Boot Look-See

Our unit shipped in a silver Gigabyte Poseidon case (apparently no longer available as of press time, as the system now appears to ship in an Ikonik case by default instead). It includes a door and utilizes a tool-less design, so you don't need a screwdriver to install

drives or cards. It also includes a grille on the left side panel that allows you to see a lot of the pretty blue LEDs that grace the inside of the case. The inside of the case is tidy, with all of the cables routed nicely. There are two 120mm case fans to keep air moving through

A WELL-PRIMED CANVAS THAT IS READY TO ACCEPT THE PAINT OF YOUR VIDEO.

the system quickly, but quietly. The front panel includes lights that make it easy to spot the FireWire and USB ports, as well as the mic and headphone jacks.

There are some great component selections, including an Asus P5N-D motherboard, Intel Core 2 Quad Q9550 processor running at 2.83GHz, 8GB of Corsair PC2-6400 RAM running as

dual-channel (four 2GB modules), an 800W power supply by NZXT, a card reader and an ATI Radeon HD4850 video card with 512MB of RAM.

Storage-wise, the system utilizes a stripe set composed of two Hitachi 500GB SATA hard drives (each with 16MB cache) connected to the onboard NVIDIA RAID controller. The computer also includes two optical drives: an Optiarc DVD burner and an LG Blu-ray Disc burner.

Rounding out the peripherals: a Logitech keyboard and mouse combo and a set of somewhat disappointing no-name speakers in a 2.1-channel configuration. If you're serious about your sound, get some nice monitors to go with your system. At the very least, upgrade to one of the Logitech audio systems offered by iBUYPOWER.

Test Drive

The system booted quickly as a result of the many little tweaks in use. We defragged again with the uber-useful

freebie JKDefrag to eke out the most performance possible from the disk array. The Windows Experience Index base score was 5.6. The stripe set turned in some strong scores: transfer rates were 90.2MB/sec minimum, 124.5MB/sec maximum, 113.6MB/sec average. Access time was 18.5ms, burst transfer rate was 119.0MB/sec and CPU utilization was a moderate 4.6%.

Strangely, the Optiarc DVD drive did not show up in Windows. We also couldn't find the NVIDIA control panel for seeing more information about the RAID settings. This led us to the con-

THE iBUYPOWER HARDWARE IS SOLID AND THE WARRANTY IS GENEROUS.

clusion that our chipset drivers needed to be updated. That immediately solved both of those issues: the drive appeared and the NVIDIA control panel made itself visible for the first time.

This machine also adheres to the conservative approach for driver updates, in that pretty much everything worked (well, except for the NVIDIA hardware referred to above), but the drivers weren't the current versions. The BIOS wasn't the bleeding-edge version, and the drivers in use for the

video card, NVIDIA chipset and audio controller were all a couple of versions behind. These are easy enough to update, though.

The out-of-the-box configuration is spartan. The only major thing we found preinstalled was a copy of World in Conflict, a game used as part of iBUYPOWER's benchmarking (as mentioned above). Even the copy of Adobe Premiere Elements 4 that ships with the system isn't preinstalled on the system. (There's also a boxed Dazzle DVD recorder in the box, so you're covered all the way around if you need an analog capture solution.)

We find this just a little strange – but we've gotten used to the convenience of having everything pre-installed. Installing it yourself isn't necessarily a bad thing, but, if you need to rip the box open and start right in editing, you will experience some delays before you can leap in. There's a lot of good stuff included on the OEM install CDs for the Blu-ray Disc burner and the motherboard – it just has to be installed.

What A Value!

You can have a Video Pro of your own for \$1,799. For everything included, we think that's quite a good deal, especially compared to some of the offerings that are out there (and also considering that it includes a Blu-ray Disc burner). The hardware is solid and the war-

Optical drives and card reader behind door



ranty is generous (3 years limited with lifetime support).

iBUYPOWER also offers two other models in its lineup of video PCs: the Video Bot (\$1,299) drops down to 4GB of RAM, downgrades to an NVIDIA 9800GT video card and does not offer the Blu-ray Disc drive. The Video Extreme (\$4,299) upgrades the Video Pro with an upgrade to an SSD (solid state disk, a.k.a. "very large Flash drive that is connected to a SATA port instead of by USB") boot drive and upgrades to Windows Vista Ultimate 64-bit. However, all of these machines are easily tweakable on the order screen. ■

TECH SPECS

OS	Microsoft Windows Vista Home Premium, 64-bit
RAM	8GB, DDR2-800
Processor	Intel Core 2 Quad Q9550 (2.83GHz)
Chipset	NVIDIA nForce 750i SLI
Number of Physical Processors	1
Hard Drives	Hitachi 1TB, 7200RPM, striped (formatted capacity: 931.5GB)
Video Editing Software Included	Adobe Premiere Elements 4.0
Analog Video Capture Card Included	Dazzle DVD recorder
Disc Burners	LG G6W-H20L Blu-ray Disc; Optiarc AD-7200A DVD
Disc Authoring Software Included	Adobe Premiere Elements 4.0
Multiple Monitor Connections	Yes

SUMMARY

A great performer, although the spartan out-of-the box software configuration may be a mixed blessing.

Charles Fulton is *Videomaker's* Technical Editor.



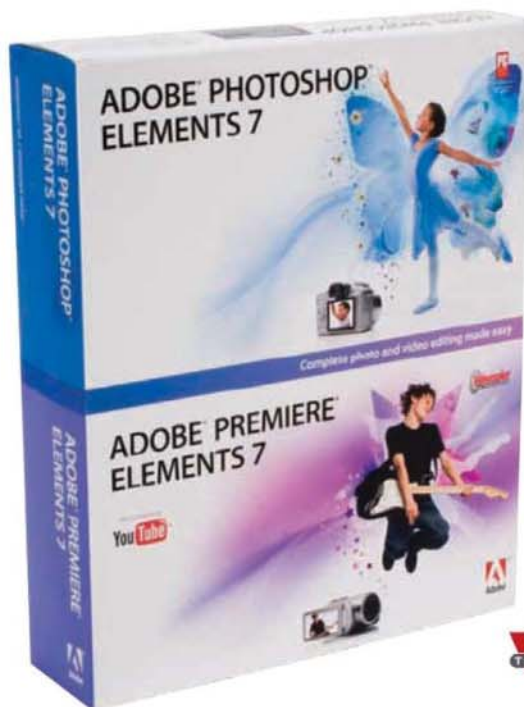
FEEDBACK

For comments on this article, email us at editor@videomaker.com, use article #14038 in the subject line.



TEST BENCH

Let's Test The Elements



by Tom Skowronski

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STRENGTHS

- Really fun transitions and effects
- Very easy to make DVDs and upload projects

WEAKNESSES

- Hard to edit in InstantMovie mode

\$140 alone, \$180 bundled
with Photoshop Elements 7

Adobe Premiere Elements 7 Video Editing Software

Most beginner editors want to jump right in and start cutting up some video as soon as they can. It's not always that easy. User-friendly operation can be hard to come by when we want to make a professional-looking product. Adobe has made the crossover a reality with a very easy-to-use advanced yet uncomplicated editing program known as Premiere Elements 7.

Start 'em Up

We installed the program on a standard Compaq Evo W4000 PC. The first thing that we noticed was that our main four tabs, which sit on top to the right side of the screen, made it very easy to navigate around the program. The Organize, Edit, Disc Menus and Share tabs are very easy to wrap your hands around and allow for a quick

turnaround time in opening up the program and beginning to understand how to use it. This is extremely important for novice users and beginning editors.

Organize allows you to create albums, add ratings and tag your clips. We saw this as beneficial to the user,

THE MAIN FOUR TABS MAKE IT VERY EASY TO NAVIGATE AROUND THE PROGRAM.

when working on a project, as it allows for the option of rating different takes, with a rating from one to five stars.

Editing could be a little difficult, but the main concern here was: how can I finish a project without having to read through the entire manual? Elements answered the question by providing the preview window with editing options, à la big brother Adobe

TECH SPECS

Processor	1.8GHz (3GHz required for HDV or Blu-ray Disc; dual-core required for AVCHD)
Operating System	Windows XP SP2, Windows Vista
RAM	Win XP: 512MB; Win Vista: 1GB; 2GB required for HDV, AVCHD or Blu-ray Disc
Hard Disk Space	4.5GB required for installation
Monitor	Minimum 1024x768 resolution, 16-bit color, DirectX 9- or 10-compatible video
Sound	DirectX 9- or 10-compatible
Optical Drive	DVD-ROM for installation; DVD or Blu-ray Disc burner required to burn respective formats
Interfaces	FireWire and/or USB 2.0 port required to capture video

Premiere Pro. We found this helped us to complete our projects more quickly, because it allowed us to essentially pre-edit our edit before dropping it into the timeline. Once we finished with our pre-edit, we were able to clean up our projects with relative ease, as most of the shortcuts that exist with Premiere Elements 4.0 remain the same.

The Disc Menus option allows for smooth DVD authoring that contains quite a few nice-looking preset menu designs. Changing the actual menu requires the standard click-and-drag operation; however, we found inserting full-motion video and a nice soundtrack very simple.

The Share tab provides a vast array of exporting options, including burning a DVD, uploading online, dropping it into your PC, recording onto DV or HDV tape and exporting files to play on mobile phones and MP3 players. Adobe also made the program easier to skim through, with Themes, Titles, Effects, Transitions and Projects tabs and a host of options to choose from.

Capture and Create

Capturing our media was, once again, very simple. After clicking our Get Media tab, we found ourselves with a host of options to pull our content from, including everything from webcams to mobile phones!

For the editor on the go, InstantMovie gave us the option to further simplify our edits. Once we gave our clips ratings, a theme and tags, InstantMovie did the work for us! By using the metadata provided by your clips, InstantMovie puts together a project by adding a sequence that contains transitions and music.

To further customize the sequence, each theme offers more options to add opening and closing titles, music adjustments such as raising and lowering soundtrack and narration mixes, changing the duration of the overall clip, the order of clips selected and the addition of transitions, sound effects and theme titles.



Imagine that – an editing program that edits for the user. Doesn't really get much more user-friendly than that, does it?

On the downside, after using InstantMovie, we found it difficult to make changes to the sequence. If you need to fine-tune, this can be a headache. Also, rendering a preview of InstantMovie takes a long time, which can take some steam out of the fast-paced engine that the feature is designed for.

Editing went rather quickly and felt very smooth. You can choose from the Sceneline and the Timeline, which we liked. We could trim our

PREMIERE ELEMENTS STILL STANDS HEAD AND SHOULDERS ABOVE OTHERS.

clips in the Timeline, by clicking and dragging our shots. In general, most shortcuts and options are very intuitive. We had two options for adding titles, one from the dropdown menu and one using a theme and various preset graphics. This made designing a project very easy.

Videomerge, the Premiere Elements version of greenscreen, was very easy to pick up. It made creating high-quality chromakey effects simple. We just dragged a clip onto another clip in the preview monitor and applied Videomerge. It acted as if the background clip were a greenscreen and eliminated all of the pixels of the background color. As our clip played, Videomerge continued to compensate for the

changes to the background and analyze the color.

Smartsound made applying a soundtrack quite fun! Not only could we pick from a vast array of themes, but we could also add the exact amount of time of our video into the options and – *voilà!* – our soundtrack was now the perfect length we needed for our video.

Basics to Advanced

There are quite a few newbies to the editing world out there. For them, the primary concern when choosing editing software should be the feel and learning curve. It will be something that sticks with that user for his entire editing life, and it will be the benchmark when heading into new software. It must feel easy, intuitive and smooth, and it must fit just right. Adobe Premiere Elements still stands head and shoulders above other introductory editing programs. With new additions, it makes even complicated procedures seem easy. Adobe Premiere Elements is very user-friendly, and it provides a great first experience into the post-production landscape. ■

SUMMARY

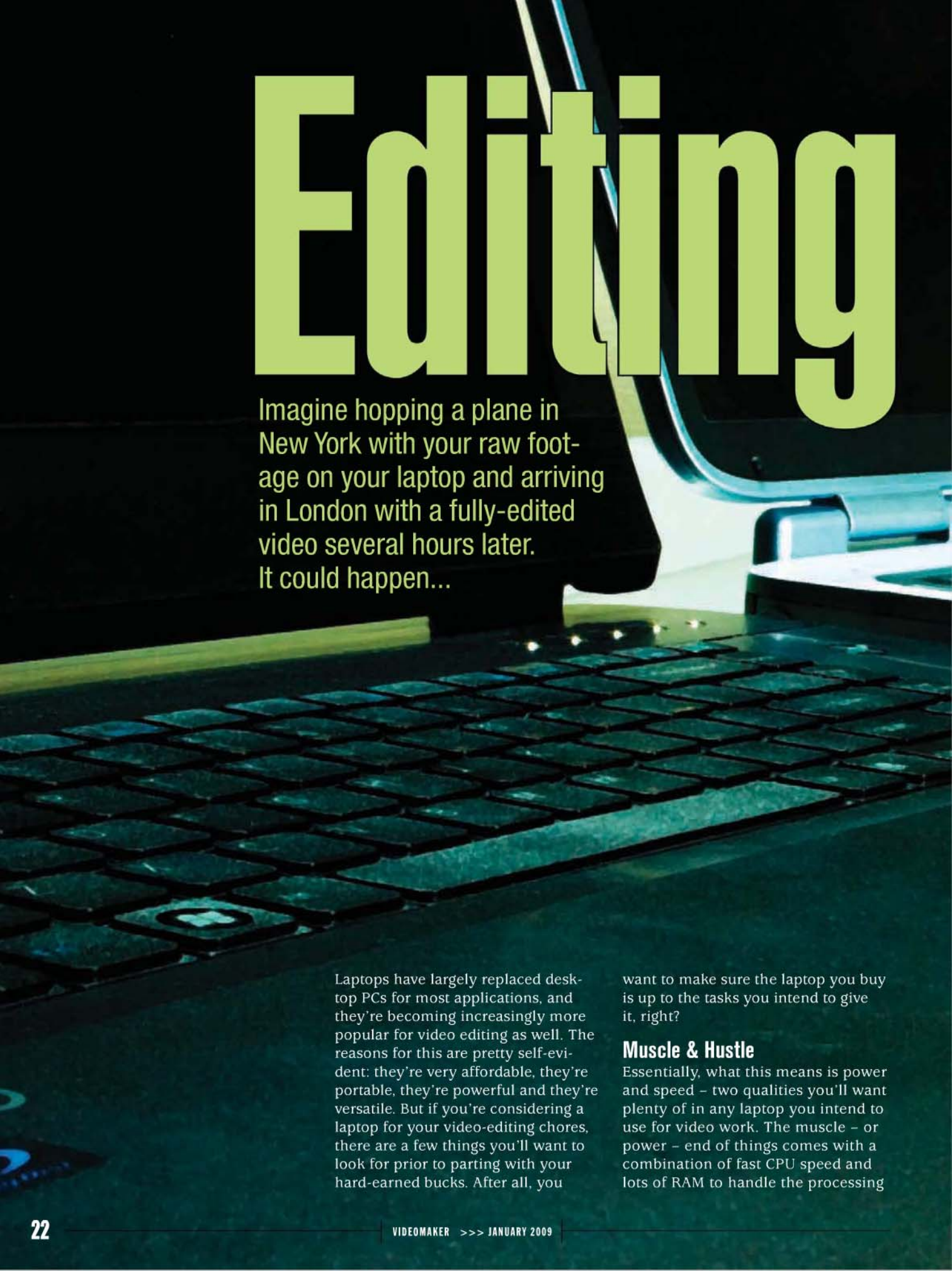
Great editing program for beginners who want to move further into the video production universe. From basic to advanced effects and options, Elements provides the way at a very affordable price.

Tom Skowronski is **Videomaker's** Associate Editor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14286** in the subject line.



Editing

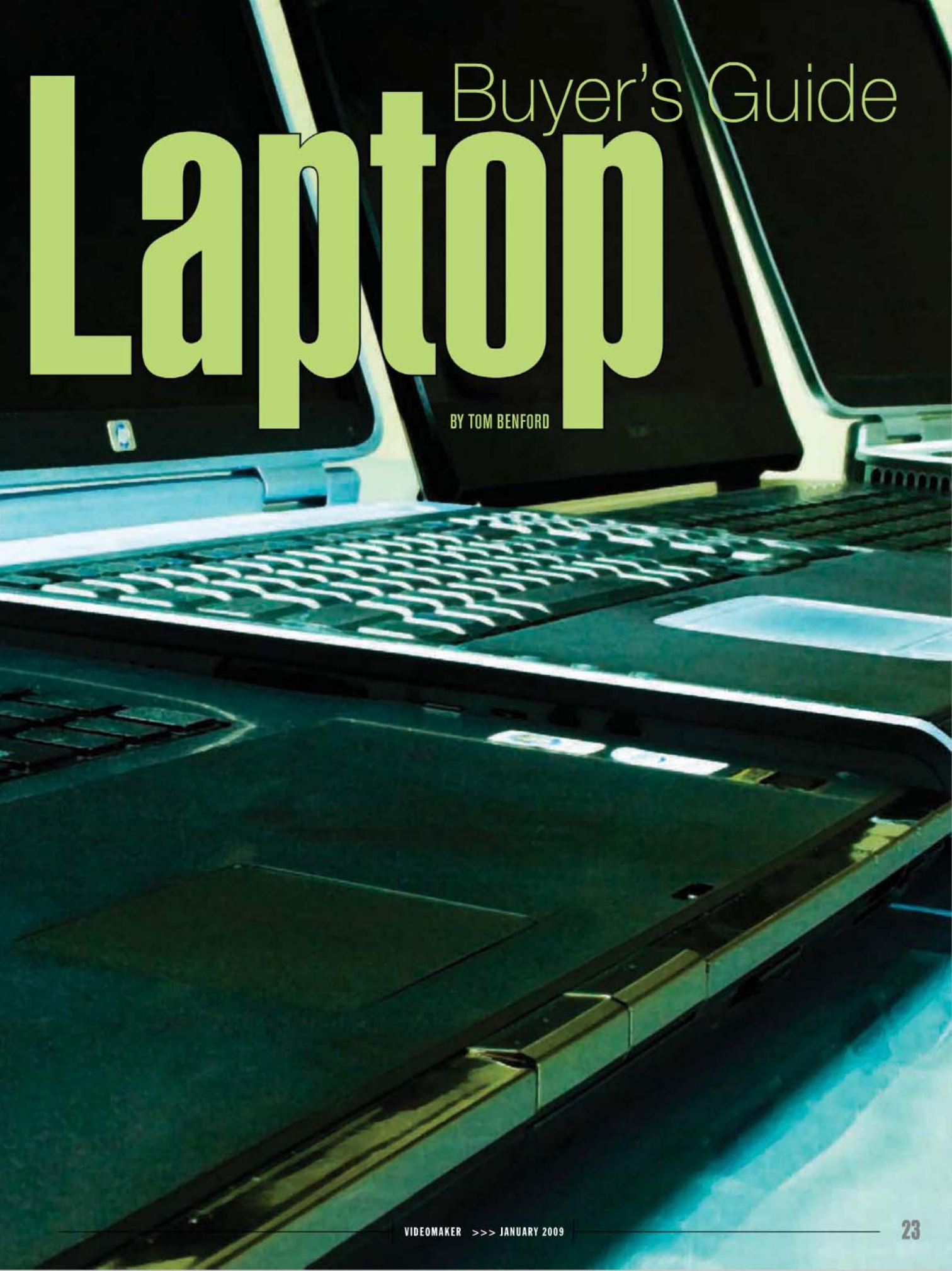
Imagine hopping a plane in New York with your raw footage on your laptop and arriving in London with a fully-edited video several hours later. It could happen...

Laptops have largely replaced desktop PCs for most applications, and they're becoming increasingly more popular for video editing as well. The reasons for this are pretty self-evident: they're very affordable, they're portable, they're powerful and they're versatile. But if you're considering a laptop for your video-editing chores, there are a few things you'll want to look for prior to parting with your hard-earned bucks. After all, you

want to make sure the laptop you buy is up to the tasks you intend to give it, right?

Muscle & Hustle

Essentially, what this means is power and speed – two qualities you'll want plenty of in any laptop you intend to use for video work. The muscle – or power – end of things comes with a combination of fast CPU speed and lots of RAM to handle the processing



Laptop

Buyer's Guide

BY TOM BENFORD

Editing Laptop

Buyer's Guide

**Dell
Precision M6300
\$2074**



chores; you can't have too much of either when it comes to video.

You'll want to get a laptop with a powerful processor, such as an Intel Core Duo, AMD Athlon 64 X2 or AMD Turion X2. The operating systems of choice are Windows XP (still a tried-and-true favorite of many), Windows Vista and Mac OS X (and remember, you can run Windows on a Mac, too).

The RAM complement should be at least 1GB, with 2GB (or more) being even better. If the laptop you're considering comes with only 1GB of RAM, factor in the cost of upgrading the

RAM as part of the total purchase price, and be sure to get the fastest RAM chips the machine can handle for the quickest processing response time.

For HD editing you're going to need the extra muscle of higher clock speed and as much memory as possible. And, of course, if you're working in HD or Blu-ray Disc, you'll need all the extra muscle and hustle you can get, since these extended formats will tax even the most robust of systems.

The Ins & Outs

You'll want (and need) an IEEE 1394 (FireWire) port on the machine, so you can connect your camcorder to the laptop for video downloading, as well as for export to tape or transmitting to other DV devices. You'll also want to have several (4 is good, 5 or 6 is better) USB ports for connecting peripherals, such as external hard drives, printers, card readers and such. And, of course, these ports should be USB 2.0-compliant for the fastest throughput. A port for connecting an external monitor is also advantageous (more on this a bit later), as is an SVGA output – this adds to the flexibility of video options you have, especially if you want to display your work on an SVGA output device, such as a TV monitor.

Video Resolution

While most of today's laptops support a maximum video resolution of 1280x800 pixels, some of the higher-end video software packages (e.g.,

Manufacturer Listing

1 Beyond
www.1beyond.com

Acer
www.acer.com

ASUS
<http://usa.asus.com>

Alienware
www.alienware.com

Apple
www.apple.com

Chem USA
www.chemusa.com

Dell
www.dell.com

Falcon Northwest
www.falcon-nw.com

Fujitsu
www.computers.us.fujitsu.com

HP
www.hp.com

Hypersonic
www.hypersonic-pc.com

iBuyPower
www.ibuypower.com

Jetta
www.jettaus.com

Lenovo
www.lenovo.com

MSI
www.msimobile.com

Polywell
www.polywell.com

Prostar
www.pro-star.com

Sager
www.sagernotebook.com

Sony
www.sonystyle.com

Velocity Micro
www.velocitymicro.com

Vigor
www.vigorgaming.com

XiComputer
www.xicomputer.com

ZT Systems
www.ztsystems.com

**Sony
AW
\$1695**



Editing Laptop

**Apple
MacBook Pro
\$1999**



Adobe Creative Suite 3 Production Premium) require 1280x1024 resolution with 32-bit video. If the laptop's built-in screen can't support this resolution, make sure that it can support it if you connect an external monitor; otherwise you won't be able to run the more robust video editing and production applications. As far as the built-in LCD screen goes, a 14" screen is the bare minimum, with 15.4" or even 17" screens being more attractive.

Storage Space & Speed

The hard drive is another area of concern for video editing. You'll want a drive spinning at a speed of 7200rpm or faster, with a minimum of 80GB of storage space. Once again, more is better, with hard drive capacities of 160GB or greater becoming more usual.

Sound Decisions

For optimal audio handling, mixing and editing, you'll want a Microsoft DirectX- or ASIO-compatible sound card. It should have multiplexing capabilities (ability to play back and record simultaneously), as well as MIDI processing capabilities, for the greatest flexibility and creative options in the audio department.

Burning for You

A DVD burner capable of handling double-layer discs is highly desirable, with a Blu-ray Disc



**Lenovo
ThinkPad W700
\$2978**

burner necessary for Blu-ray Disc creation. Another plus of the extra USB 2.0 ports mentioned earlier is the freedom they give you to add additional drives (such as Blu-ray Disc) if/when you need this capability, perhaps down the road a bit further.

Bargain Hunting

I regularly receive e-mail notifications from Comp USA, Staples and other vendors, alerting me to special deals they have on laptop systems, and often the price for surprisingly robust systems is under \$700 – a real bargain. (A few seriously tempted me at \$499, even though I don't need another laptop right now!)

You can also go to the various manufacturers' websites to see what they're offering – sometimes you can save a real bundle on a factory-refurbished or reconditioned system that carries a full manufacturer's warranty.

And don't forget eBay – you never know what you'll find on the "world-wide garage sale" – sometimes you can get a really great deal on a used-but-not-abused pre-owned laptop that may just fill the bill nicely for what you need. The main thing is to know what you need – being an educated consumer is always your best bet! ■

Tom Benford has been writing about video, photography, filmmaking and myriad other subjects for over 30 years, and he has authored more than a dozen books.



FEEDBACK

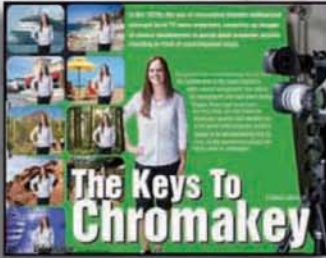
For comments on this article, email us at editor@videomaker.com, use **article #14063** in the subject line.



**Alienware
m17x
\$2,399**

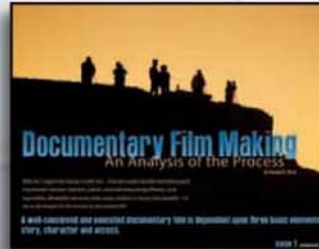
Videomaker Downloadables

Starting at \$2.49



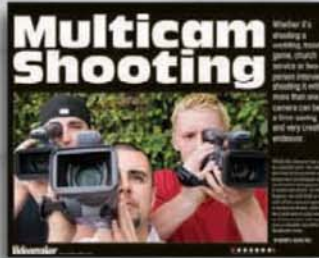
The Keys to Chromakey

Take a look at some of the elements involved in producing a successful key. Chromakey and related technologies, such as blue and green screen effects, have gotten so exact.



Documentary Film Making

This in-depth analysis combining special techniques is a no nonsense approach to documentary film making with many "real world" examples to illustrate and illuminate the process, written and conceived by a "real world" award winning documentary film maker.



Multicam Shooting

Whether it's shooting a wedding, baseball game, church service or two-person interview, shooting it with more than one camera can be a time-saving and very creative endeavor.



Making Money with Video

Learn how you can make money with your video creation!



DVD Authoring

There is no question - we're now officially smack dab in the middle of the era of the "home-made" DVD.



Video Hosting

Getting videos to play on the Internet used to be a major pain.



How Did They Do That?

Ever wonder how they do those special effects? Learn how!



Guide to Making Wedding Video

Learn the essentials to creating a memorable wedding video!



Handheld Shooting

There are a lot of different ways to support your camera while shooting, many of which don't need the death grip in order to achieve a steady shot...



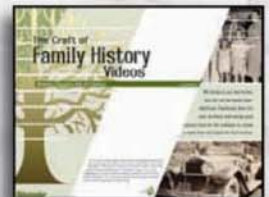
Vacation Videos

Oh, no! Not the vacation videos! It's time to teach your family and friends how to make an interesting, entertaining and watchable video journal of their summer vacation.



8 Guerrilla Production Tips

Now more than ever, it's possible for one person to venture into the world and capture great video. By following a few simple guidelines, you too can be an on-the-fly guerrilla filmmaker!



Family History Videos

We treasure our memories, but we can be easily over-whelmed. Fearlessly dive into your archives and uncup your camera lens for the holidays to create a video that will stand the test of time.



Wedding Videoland

A light-hearted look at wedding video. The Goal: Create a top-notch video keepsake that will be treasured for generations to come.



One Light Wonder

Learn how to be creative with single-source lighting, both indoor and outdoor.



Depth of Field

Manipulate your viewer into watching one portion of your movie, while other events continue in the scene!



Making Music Videos

Make your music video a success!

DOWNLOAD AT www.videomaker.com/pdfs

Bags, Boxes and Backpacks

A Buyer's Guide
for Your Gear

BY JENNIFER O'ROURKE



If you think all gear bags and cases are alike, think again! Bags and cases offer more choices of style, color, type, material, build, support and price than all your other gear combined. From hard cases to backpacks, there's a gear protection support case or bag for every camera and accessory we carry around.

Bags, Boxes and Backpacks

Bag and Case Manufacturer Listing

Anvil
www.anvilcase.com

Bogen
(Kata, Amabilia, Delsey, National Geographic)
www.bogenimaging.us

Canon
<http://consumer.usa.canon.com>

Case Logic
www.casellogic.com

Cinebags
www.cinebags.com

Crumpler
www.crumplerbags.com

Eclipse Solar Gear
www.eclipsesolargear.com

f.64
www.f64camerabags.com

Hakuba
www.hakubausa.com

Jeep
www.jeeppbags.com

JVC
www.jvc.com

Lenmar
www.lenmar.com

Lightware
www.lightwareinc.com

LowePro
www.lovepro.com

Mango Tango
www.mangotangollc.com

Mountainsmith
www.mountainsmith.com

M-Rock
www.m-rock.com

Naneu Pro
www.naneupro.com

Norazza (Ape Case)
www.norazza.com

Panasonic
www.panasonic.com

Pelican
www.pelican.com

Petrol
www.petrolbags.com

Porta Brace
www.portabrace.com

ProMaster
www.promaster.com

RCA
www.rca.com

Roadwired
www.roadwired.com

Sakar
www.sakar.com

Scosche (CamKase/CamSak)
www.scosche.com

Sealife (ReefMaster)
www.sealife-cameras.com

Sony
www.sonymstyle.com

Storm Case
www.stormcase.com

Sumdex
www.sumdex.com

Tamrac
www.tamrac.com

Targus
www.targus.com

Tiffen (Domke)
www.tiffen.com

ToCad (Zero Halliburton)
www.tocad.com

Vanguard
www.vanguardusa.com

VariZoom
www.varizoom.com

Vidpro (Tonino Lamborghini)
www.vidprousa.com

World Richman
www.worldrichman.com

Compiled by Tom Skowronski

Before you shop for a gear bag, ask yourself, "Where do I do most of my shooting?" Next question might be, "How much gear will I have to move at any one time?" Then, "Where do I store it when it's not in use?" Most video cameras come in nicely boxed... boxes. They have corrugated cardboard dividers and funny cardboard trays to hold the cables, manual and operation CDs. And they're usually well-packed. But, as soon as you pull that camera and accessory packet out, you've messed with the cardboard-box juju that won't allow you to repack that gear in any way near the original packing. The next time you put the camera away, it will sit in the box with the top open, because you can't for the life of you figure out how to close it. (We know – just look in the **Videomaker** camcorder closet, and you'll see many a box-top waving in the cool dark abyss.)

Transport and Type

There are two types of equipment bags or cases, soft or hard, and you transport them by handles, straps or wheels, depending on the size and weight of case and contents. This may seem obvious, but think about it: how will you transport your gear? We know some hard-working producers have daily trips on location and keep their gear in their cars. Because they rarely take this case out of the car, they might not care if it's big, boxy and bulky and the handles are too small for comfortable carrying. But the once-a-week

Kata
www.bogenimaging.us



shooters or those working in the wilds would be cussing up a storm if they were stuck handling that same case.

Hard cases are best for travel when someone else is transporting the gear. We've all heard the jokes about baggage handlers, delivery companies and gorillas beating your case to death. Hard cases typically come in two types: big boxy containers and hard plastic or metal portable cases. Again, consider the load and transport distance.

A GOOD HARD-SIDED CASE SHOULD HAVE HEAVY-DUTY INDUSTRIAL-STRENGTH WHEELS.

Most, but not all, hard cases come equipped with wheels, and you should check the material and structure of those wheeled bags. For a small roller bag that doesn't carry much weight, you might get by with plastic wheels. But a good hard-sided case, often called an anvil case, should have heavy-duty industrial-strength wheels that you can replace or repair if damaged. (Trust me on this: I dragged a lop-sided, one-wheeled bag all over NAB in Las Vegas last year when the baggage handlers broke one of the plastic wheels. Not a happy traveler, was I!)

Hard cases also have locking devices to protect your gear from prying hands. The more expensive cases have locks on all four sides; others might lock only on the top or handle side. Some have an air-release valve for airplane pressure, and others are so watertight you could use them as a small raft if you end up lost at sea.

Most hard cases have hard dividers that you can't change to suit your needs, so, before you buy, measure first, then plan what you'll pack and measure again.

Hybrid hard/soft cases are just as they sound: they have soft vinyl sides and padded interiors, but there are hard panels around the edges and casing for reinforcement. They don't fold or collapse, so they protect your gear, but they're usually smaller and carry a lesser load than a hard case. Depending on its size, you might be able

to take a hybrid hard/soft case aboard as an airline carry-on.

Soft cases are the most popular and offer the most size, style and carrying varieties. Some better brands might give you a choice of both shoulder straps and hand straps. Check out the makeup of the strap: will it tear easily if you overload the bag? Hard cases might list maximum weight recommendations; soft cases usually don't. You know it's too heavy when you can't lift the bag! Some smaller soft cases have permanent pockets – a large one for your camera and a few smaller side pockets for the batteries, tapes and cables. If you choose one of these, think about the size of your camera first. Once you place the camera inside, can you close the bag without putting pressure on the eyepiece, attached boom mic or viewfinder? Every time you have to push a bit to close, the bag works at lessening the life of that camera part.

Usually the bigger soft cases have Velcro dividers that you can resize to fit your bag. The bag might not be as strong as those with the preset pockets and might react badly to someone sitting on it, but you hope that won't be an issue. These soft cases are the most versatile, offering shoulder and hand straps, and they can easily accommodate more than just your camera. ►►

Lowepro
www.lowepro.com



Bags, Boxes and Backpacks

More than Just the Camera

You have your camera bag and gear accessory bags, but there's also that bag of other stuff you need to carry around.

- Extra batteries
- Cleaning solution made for cameras (in a well-sealed baggie)
- Lint-free swabs
- Lens-cleaning paper
- Extra UV filters
- Business cards
- Small flashlight
- Small multi-tool kit for repairs
- Large plastic garbage bag (in case it rains)
- Small lint-free towel or T-shirt
- Bandages
- Notepad and pen
- Clothes pins (about 5)

Find out more online about the stuff to pack in your accessory bag from this **Videomaker** story: www.videomaker.com/article/13325 or this *Tips & Tricks* vidcast segment: www.videomaker.com/article/14061.

Petrol

www.petrolbags.com



When you're considering a soft case, make sure meets airline carry-on requirements, as your gear can't handle being in the luggage compartment in a soft case.

Some soft cases or backpacks have hooks, loops and mesh bags on the exterior of the bag for accessories, but it may not be a good idea to load stuff outside the bag if you're flying. I took a trip to L.A. to cover the Oscars last year, and the security at my departure air terminal allowed me to keep my monopod attached to

BACKPACKS OFTEN CARRY THE CAMERA VERTICALLY, SO PACK WITH THE LENS POINTING UP TO PROTECT IT.

outside straps on the bag. But the return flight security insisted I put the monopod inside the bag; it was just a teeny-weeny bit too big to fit, so I had to check the monopod in, sans protection of any kind.

Backpacks made for video gear are nice, but they pack tight, so consider all the other gear you're toting along. Compare a backpack specially made for camera gear to the type kids carry to school, and you'll see how robust and protective the video bag is. It usually has detachable dividers that can give you more space for a larger camera or tuck in to tighten the load.

Remember, backpacks often carry the camera vertically, so pack with the lens pointing up to best protect it. You can wrap a soft T-shirt around the lens for added support. (This is a good tip any way you carry your camera, and the T-shirt can help wipe dust from the camera, too.)

Some backpacks are for day-tripping or short hikes; others carry a heavier load. Some bigger backpacks stand alone and have rugged rubber backing for protection when placed on the ground. If you're hiking only occasionally or short distances, a smaller backpack that holds just the camera might be best for you, along with a shoulder bag for your other gear.

Bags, Boxes and Backpacks

Specialty and Accessory Bags

Many videographers have small separate accessory bags for mics, batteries, cables and other things we tote about, then they pack them inside a larger gear bag or hard case. If each smaller accessory bag is padded nicely, you could use a lighter-weight larger bag to carry all the other gear to your car or location. We like the idea of separating similar gear to grab-and-run quickly.

Bags that are made especially for your support gear answer needs you might not consider. Any old large-enough bag might hold your tripod, but one made for it usually has a narrower reinforced base, to snugly fit the tripod feet and prevent the sharp points from tearing the bag. The zippered area is longer to let you slip the 'pod out quickly, and the shoulder straps are reinforced for strength. Hard tripod cases have wheels and are often big enough to carry not only your tripod, but light stands too. These are often strong enough to pass the baggage handlers' test.

Bags specially made for your portable audio mixer have clear plastic windows so you can see the meters, and they often have Velcro openings you can pull your cables through.

Consider also a special bag for your lights. **Videomaker** ships gear all over the country for conferences, and one of our biggest concerns is the light bulbs for our light kits. Most lights we ship live in hard cases made especially for the kit, but the bulbs still get an extra support in their own divided padded box. You can find these small boxes in sewing, craft or fishing stores. The plastic boxes are lunch-box size, have many slotted pockets of various sizes and are also good for the myriad small accessories like RCA-to-stereo mic adapters, multi-purpose ties, extra AAA batteries, etc.

Final Case Point

Remember, one size does not fit all. This buyer's guide should help you select some bullet points to think about. As always, weight, type and materials vary, and it's up to you to decide which bag, box or case best suits your needs. Remember, the most important thing about a gear bag: use it or lose it. Don't let your hard-earned video camera investment be lost due to negligence, because you didn't think a bag was as sexy as that super-duper electronic accessory you've been eyeballing. I recently sent my expensive \$3000 camcorder in for repairs due to a rather stupid case of negligence, and the invoice was a whopping \$500... but they did clean the lens nicely.

BTW, that cardboard box your camera came in? Close it tightly, with all the materials you don't need and store it neatly in the attic for that just-in-case time that you might have to return it to the manufacturer for repairs (hopefully for some reason other than because

WEIGHT, TYPE AND MATERIALS VARY; IT'S UP TO YOU TO DECIDE YOUR NEEDS.

you didn't carry the camera in a proper case). Keep it there at least until the warranty runs out. Many of your manufacturers' authorized repair shops won't take one without its original shipping crate. ■

Jennifer O'Rourke is **Videomaker's** Managing Editor and has been a part-time pack mule for many years.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14061** in the subject line.

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How to fix on-set goofs, change virtual sets or make your action heroes fly through the air amidst gunfire, snowflakes or magic dust.

BY PAUL DEL VECCHIO

Rotoscoping is one of my favorite things in Visual FX. I know that sounds crazy, but the results of rotoscoping can be so rewarding. Doing the actual work can be tedious, but, when it's all said and done, you can sit back and be proud of your accomplishments.

What is rotoscoping? Here's the simple version: rotoscoping is articulating a mask to either add something to or remove something from the frame. You do this process frame by frame, and that's why it's so tedious and time-consuming.

This article is not just a step-by-step guide. It's actually more about sparking ideas on how you can use rotoscoping and masking in order to make your films better by increasing your production value. There will be two examples provided. If you would like to see more, visit the video tutorial section at www.videomaker.com, where we aren't limited by word count and page space. We used Adobe's After Effects; your software tips may vary.

Remember, rotoscoping can cover a broad range of effects. We hope to show you some cool ones in this article. ►►

Rotoscoping

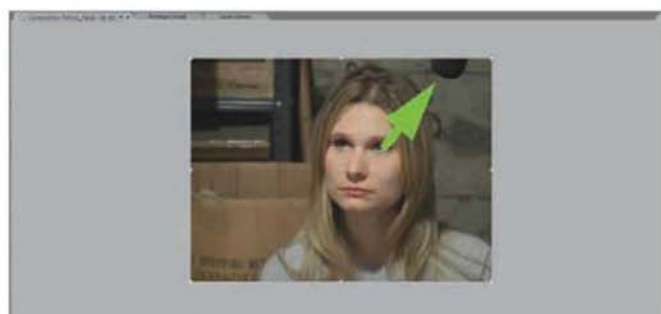
Object Removal

Sample 1: Object Removal

Have you ever had a shot ruined because the mic dipped into frame? What if you can't get the mic close enough to get good sound?

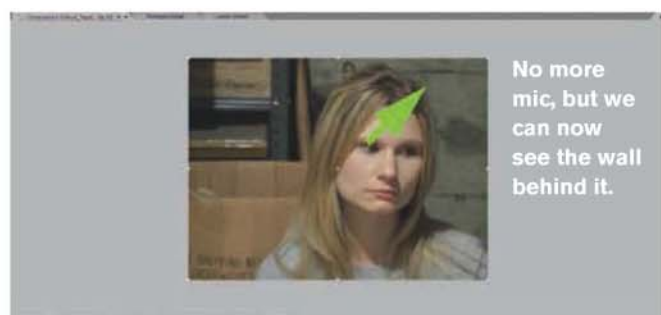
Well, think about this for a second. Maybe you can lock the shot off (no tilting, panning, zooming, dollying, etc.) and get the mic closer by actually sticking it in the frame. I don't recommend doing this for every shot, but for special circumstances, it can help.

Notice the mic in the frame of the photo below.



Step 1: Shoot your scene.

If you must shoot your scene with the mic in the frame, take care to not overlap the mic and the actor. You also want to make sure you don't move the camera or zoom at all. Keep the lighting the same as well. This is crucial to matching the cutout section with the rest of the footage.

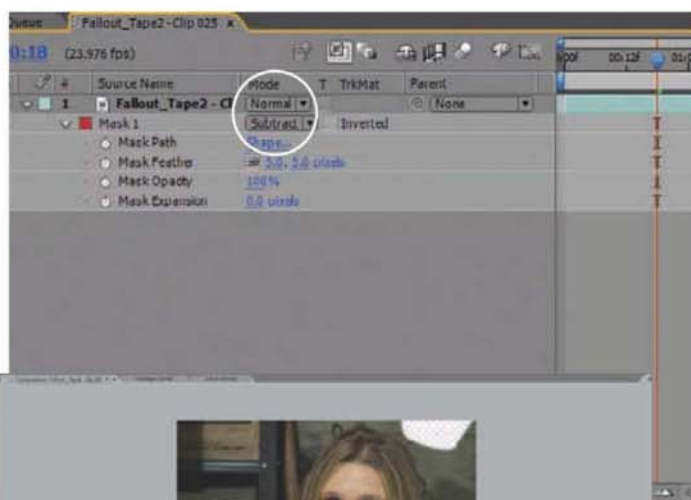


Step 2: Physically remove the mic from the shot, revealing the wall behind it.

Notice the mic is no longer in the shot, but nothing else has changed. The lighting, camera position, lens, etc., have all stayed the same. Removing the mic reveals the wall behind it. You'll use that section of footage to fill in the blank area that we will cut out. This type of footage is usually called the *clean plate*, and that's what we'll call this footage from here on. Although I didn't do it in this example, it is best to move the actor out of the frame too.

Step 3: Digitally cut out the mic.

Using the Pen Tool in After Effects, cut out the section of the frame where the mic can be seen. Depending on the movement of the mic, you may have to animate or change the position of the mask. (You animate the mask by pressing MM on the keyboard to bring up the mask properties. Set a key-frame for the Mask Path, then move to the next frame and change the position of the mask or mask points. This will automatically set another keyframe under the Mask Path.)



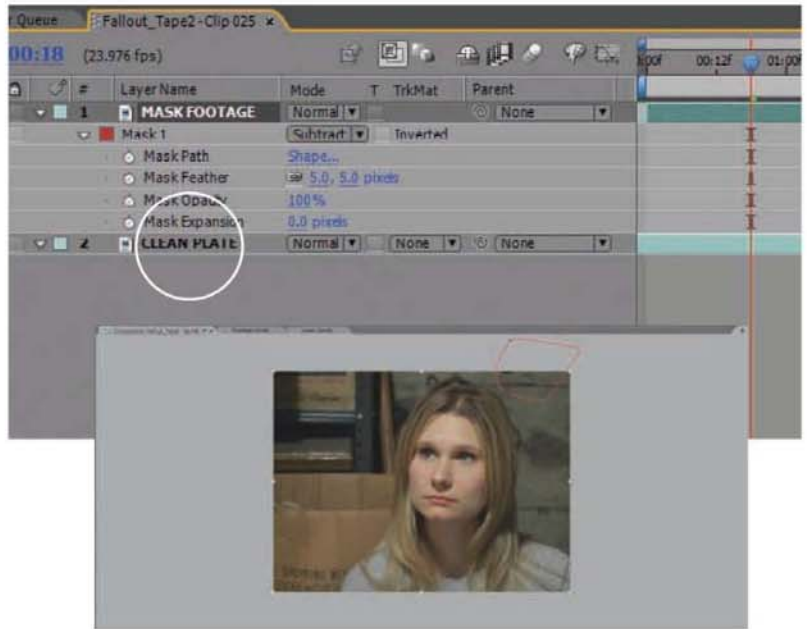
Depending on your shot, you may have to feather the mask a few pixels. Make sure your mask is also set to Subtract. This will subtract the portion of the image you just cut out. The default is Add, which means it keeps the portion you selected and removes the rest of the image – so make sure you select Subtract. Notice the section of the frame is now missing! Don't fret!

Object Removal Rotoscoping

Step 4: Fill in the blank.

In your timeline, drop the clean plate (footage without the mic physically in the shot) below the footage with the mask (the footage with that big gaping hole where the mic used to be).

Hey look! The mic is gone! Using this technique, you were able to get the mic close, thus maintaining good sound quality for the dialogue, without having to worry about keeping the mic out of the shot! Remember this while shooting, because the number-one thing that people notice in a film is bad sound. Bad picture can often-times be excused, but that's not the case with sound. Keep your production value high, and your movie will benefit! ►►



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Rotoscoping Explosions

Sample 2: Explosions

Yeah, you know you were waiting for this one... As we've mentioned before, you can go to www.detonationfilms.com for stock footage of explosions!



Step 1: Place in the explosion.

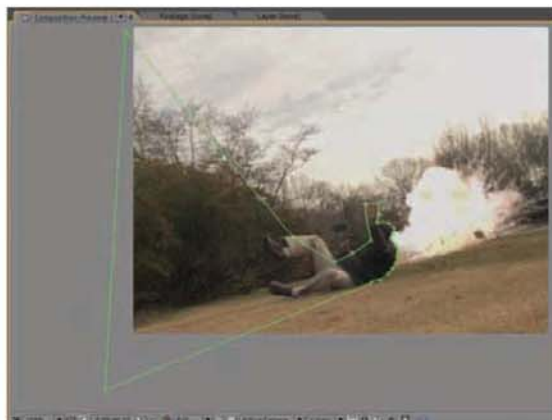
You'll notice that part of the explosion is covering our actor.

Step 2: Draw the mask.

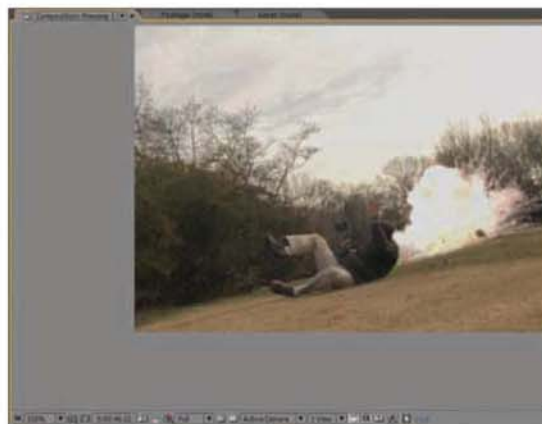
Here's where the roto work comes in. We place our explosion layer on top of our live action footage shot, so naturally, it's going to be above (or covering) everything in the shot. In this particular scene, we want the explosion to happen behind the actor, so we have to do some roto work.

Simply select the explosion layer, and cut a mask around the actor. You don't have to worry about the side that the explosion isn't reaching (the left side of the actor); you just want the actor's right side to cover the explosion. Select your Pen tool and draw a mask around the actor where the explosion needs to pass behind him. Make sure the mask is set to Subtract, so it subtracts the section you select.

Here's a shot of the mask I drew:



Here's a shot of the screen without the mask lines showing. You can see that the actor now covers that part of the explosion, creating the illusion that it's behind him. We added a 2-pixel feather to the mask in order to make the edges blend better. Edges are not sharp in real life, so play with the feathering to see what works best. You can find the Mask Feather options by pressing MM on the keyboard with the layer selected.



The only problem is that this mask is effective for only one frame. If you move to the next frame, the mask won't follow. You have to animate it to follow, or outline, the actor.

In this picture, I've moved 5 frames forward. You can see the results of not animating the mask. Part of the explosion is now covering our actor's head, and there is a gap between the actor and the explosion. Not good...



To see more FX that add bullets, muzzle shots and fairy dust, see our *Tips & Tricks* vidcasts number 127 to 130 at www.videomaker.com/vidcast and our previous Tutorials at www.videomaker.com/video/tutorials.

Step 3: Animate the mask.

So here's the same shot but with the mask animated to follow the actor. (When I say "animate the mask," I mean moving the points of the mask so that the mask continually outlines our actor. You'll have to keyframe the Mask Path in order for After Effects to remember the different positions of the mask. See the complementary video at www.videomaker.com/article/14057 for more information.)

Here, you'll notice that we have animated the mask to follow the outline of our actor. Notice the gap and the explosion covering his head are gone, and everything is as it should be.

Just animate the mask for the entire shot, and you will now have an explosion in the frame that stays behind the actor, giving the shot realism through correct depth.



It's Worth It!

I hope I didn't confuse you too much. This can be very involved and complicated material, but – trust me – it's well worth learning. Having these techniques in your arsenal will give you the ability to do so much more, both technically and creatively, with your videos! Watch our video to

see what I mean: <http://tripleeproductions.wordpress.com/2008/02/21/netflix-arrival-netflix-spec-commercial-now-online>.

As one of our favorite directors always says, "If you're both technical as well as creative, you're unstoppable!" How do you think we shot that video in one day for very little money? We got some great results for just the cost of the stock footage and food (we ended up buying a round of coffee and a large pizza).

Until next time! ■

Paul Del Vecchio is a "do-it-all" director and owns Triple E Productions, a movie/video production company.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14057** in the subject line.

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View the tutorial to learn more about Rotoscoping: www.videomaker.com/article/14057



Digits Over the Air

BY CHARLES FULTON

The End of Analog

The transition to digital over-the-air TV is nearly complete. So what does that mean for videographers?

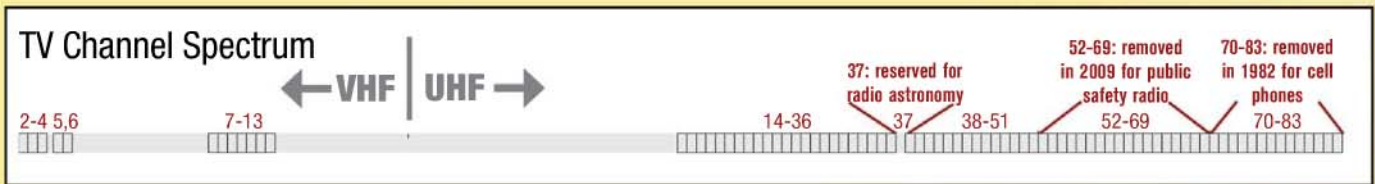
While most of our discussions of television are generally about either criticizing the medium as a whole or trying to get distribution for our own productions, the technical aspects of television distribution generally never enter into the equation. However, we are at an interesting technical crossroads as the digital television transition nears its conclusion (and as some stations have been on the air in digital longer than 10 years at this point). As such, the fork in the road for this discussion goes in two different directions: what it means for the TV viewer and what this means for videographers.

To the TV Viewer

While we've been noticing that the average digital TV channel has at least one subchannel (e.g., an auxiliary service

provided in addition to the main channel), the irony is that, after the transition is complete, there will actually be less spectrum available for television channels. The 1948 bandplan for TV eliminated channel 1 and reserved channel 37 for radio astronomy, leaving a total of 81 channels available. The first channels hacked off were 70-83, which went away in the 1980s to make way for cellular phones, leaving 67 channels available. Now, elimination of channels 52-69 for public safety radio leaves a scant 49 channels available. And, to compound the bandwidth impact, a group of consulting engineers calling themselves the Broadcast Maximization Committee proposes reallocating all AM stations to channels 5 and 6.

This is not to say that there will be no analog signals at all after February 17, 2009. Class A, low-power and translator stations



may remain analog after that magical date. It's only full-power stations that must be digital after that date. However, some Class A, low-power and translator stations have applied with the Federal Communications Commission (FCC) to "flash-cut," to go from transmitting their current analog signals to transmitting digital signals instead. This means that, for those particular stations, there won't be a transition period like full-power TV stations have had, with two channels transmitting. Instead, on a given day (which may not necessarily be 2/17/09), the station will flip a switch and go from analog to digital transmission.

To the typical viewer, this probably means nothing. (Certainly, the most-impacted group will be those who rely on an off-air antenna to receive their local TV signals, but you already have your converter boxes installed, right? Right?)

The idea behind the Radio Act of 1927 (and by extension, the Communications Act of 1934) was to minimize interference between broadcasters. The challenge is that, with fewer frequencies to accommodate signals, can a given signal exist without interfering with other signals?

To the Videographer

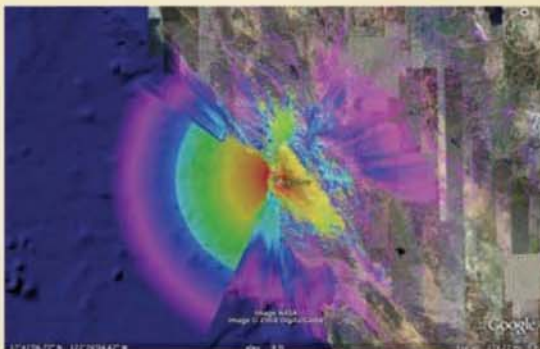
Because of both of the factors of the transition (the reduction of channels and the predominance of digital signals), the most-impacted videographers will be those who use wireless microphones. But this is only the tip of the iceberg, unfortunately. There are a number of additional considerations at play.

Wireless microphones operate on TV station frequencies and rely on the use of so-called "white areas." So you are basically using some bandwidth in the TV band that does not currently have a TV transmitter broadcasting at that frequency.

Technically, you need a license from the FCC to operate a wireless microphone system, but this is a widely-ignored requirement. However, if you plan to travel abroad with your video equipment, you should be aware that, although you can operate your equipment legally in some countries, you cannot legally operate that same equipment in other countries.

If you own a wireless microphone system, note the frequency it uses. Compare the frequency to the defined channel numbers that are codified in federal law (specifically, the Code of Federal Regulations, title 47, section 73.603, aka 47 CFR § 73.603). For example, your mic that operates at 640MHz is actually broadcasting on channel 42.

The consensus opinion of wireless microphone manufacturers, as well as a sizeable chunk of the radio frequency engineering community, is that you should avoid wireless mics operating on channel 52 (698MHz) or higher after the digital TV transition. The odds of causing interference with the public safety applications (or conversely, the odds of receiving massive amounts of interference) will be somewhat higher after the transition. The interference we're talking about could sound like static, or



A signal-strength map shows where a TV station should be receivable (but also where it would interfere with a wireless mic on the same channel).

Resources

- www.tvfool.com: A site that attempts to predict the TV channels you should be able to receive at a given location. Also available: color-coded signal-strength maps that are usable with Google Maps online or Google Earth.
- www.antennaweb.org: A site that can recommend antennas that will be able to receive the TV channels you want to receive.
- www.fcc.gov/oet/dtv/tvchfreq.html: A listing of TV channels and their frequencies.
- www.fcc.gov/mb/video/tvq.html: The Federal Communications Commission's TV database query.

Digits Over the Air

The End of Analog



If you're in the market for a wireless mic system, it is imperative that you visit manufacturer websites to see what frequencies the mics you're interested in are using and whether they will work successfully in your area.

it could be voices. It is generally subtle – it's possible interference might not show up on your meter (but still be audible on your headphones). Conversely, there are places where another transmitter could so overpower you that you wouldn't be able to hear anything else. This is the nature of wireless communication, and also why the FCC requires a boilerplate disclaimer on myriad electronic devices: "This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."

If you are in the market for a wireless microphone, we would strongly recommend researching frequencies of the models you are considering before you buy. You might find a fire-sale price on an otherwise great microphone, and the reason might be the frequency choices offered.

The good news, though, is that the wireless microphones that will work after the transition will work as well as the typical wireless microphones you've used previously. The bad news is that, with the potential for fewer available

frequencies, the odds that you'll have to compete for those frequencies is higher. If your source of interference is a TV station, just going indoors will probably help – generally speaking, digital TV signals do not penetrate walls very well. (The flip side to this is that, if you want to receive a digital signal, you usually need to invest in an outdoor antenna, especially if you're more than a few miles from the transmitter site.)

It's worth noting that there are some 2.4GHz wireless microphones on the market. While mics in this frequency will generally be usable anywhere on the planet without a license, the problem is that the 2.4GHz band is often well-used, so there is a real chance for interference with Wi-Fi networks, Bluetooth headsets, cordless phones, microwave ovens, baby monitors, etc.

If you're going more than 20 or so miles outside your local area, it would be wise to do a lookup on FCC's website (see sidebar, page 39) to verify that the channel you want to use for your mic happens to be vacant.

The Switch Is Happening...

The test of going all-digital in Wilmington, NC, in September 2008 showed us that, despite an effort to get the word out about the transition to digital TV, some people still weren't completely ready for it to happen. If you are a user of off-air signals, the word to the wise is to make sure you can successfully receive all of the digital signals now, before those analog signals get turned off. ■

Charles Fulton is **Videomaker's** Technical Editor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14059** in the subject line.



If you use wireless microphones, it's important to use headphones, to make sure you are not capturing interference that won't show up on your meters.



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- Includes Picture Motion Browser (Windows Based)



#CAHR10

Canon HR10 AVCHD DVD Camcorder

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- Built-in flash
- 24p cinema "film-look" mode
- Mini-SD/SDHC card slot



#PAPVGS320

Panasonic PV-GS320 3-CCD MiniDV Camcorder

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- Exmor Technology
- BIONZ image processor
- Face detection



120 GigaBytes

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NEW



HDTV

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- HD focus assist feature
- Cinema Tone Color



3 Megapixels

AVCHD

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- HDMI digital HD output & USB 2.0



6 Megapixels

HDTV

SOHDRHC9

SONY HDR-HC9
HDV Camcorder

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- Carl Zeiss Vario-Sonnar T* Lens
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- x.v. Color technology
- 24 frame "film-like" Cinema Mode
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- Memory Stick PRO Duo Media Slot
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- HDMI Terminal • LANC Terminal



#PAAGDVX100B

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3-CCD MiniDV Camcorder

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- RGB Gamma Processor
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- 10x Optical Zoom and Smooth Cam-Driven Manual Zoom Lens
- Optical Stabilization
- Selectable B/W & Color Viewfinder with 235k Pixels
- 3 Customizable User Presets



3 Megapixels

HDTV

#CAHV30

Canon HV30
HDV Camcorder

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- 10x Optical/200x Digital
- 2.7" Widescreen LCD w/ 211k pixels
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- Optical Image Stabilization
- External Microphone Input
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HDTV

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Canon XL2
3-CCD MiniDV Camcorder

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- L-Series Fluorite Optical Lens
- 16:9 and 4:3 Switchable
- 3x 1/3" 16.9 Progressive Scan Image Sensors
- 20x Optical Zoom Lens
- 2.0" LCD with 200k Pixels
- Color Viewfinder with 200k Pixels
- Dual XLR and One Mini Stereo Mic Input



HDV

#SOHVRHD1000U

SONY HVR-HD1000U Pro Shoulder-mount HDV Camcorder

- HDV 1080i and DV SP/LP recording and playback
- 1/2.9" 3.2 Megapixel CMOS Image Sensor
- Carl Zeiss Vario-Sonnar T* Lens
- Optical Image Stabilization
- Down-Conversion Mode (1080i to SD) • 2.7" LCD
- Memory Stick Duo Slot
- Smooth Slow Record Mode with Audio Recording



HDV

#CAXHA1

Canon XH-A1 3-CCD Pro HDV Camcorder

- True 1080 High-Definition Resolution Video at 60i, 30F, or 24F Frame Rates
- 3x 1/3" Native 16.9 CCD's with 1.67 Megapixels Each
- External AF Sensor for Fast and Accurate Focus in HD
- 20x HD Professional L Series Fluorite Lens
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- 2.8" Widescreen LCD
- Mic Input: Dual XLR



HDV

#JVGYHD110U

JVC GY-HD110U 3-CCD Pro HDV Camcorder

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- Dual XLR Microphone Inputs



HDV

#CAXLH1S

Canon XL-H1S 3-CCD Pro HDV Camcorder

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- Extended image control functions
- Enhanced audio performance with greater sensitivity
- DIGIC DV II HD color processor
- Interchangeable lens mount



Power
Optional

HDV

#JVGYHD200UB

JVC GY-HD200UB 3-CCD Pro HDV Camcorder

- Full-frame 720p/60 imaging and real 24p 720p HD recording
- 3x 1/3" enhanced 720p HD image sensors w/1280 x 720 resolution
- Enhanced cinema gamma
- Interchangeable lens mount (1/3")
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- Uncompressed 720p/60 live signal output and HD 1080i streaming
- Built-in image flip recording when using prime lenses



HDV

#SOHVRZ7U

SONY HVR-Z7U 3-CCD Pro HDV/CF Flash Camcorder

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- HDV/DVCAM/DV Tape Recording
- Native Progressive Recording and Solid-state (CF) Memory Recording
- Carl Zeiss Vario-Sonnar T* Lens
- 3 1/3" Progressive CMOS Sensor System with Exmor Technology
- Down-Converts HD to SD
- 3.2" (16:9) Wide LCD Monitor
- HDMI output and i.LINK Interface



Power
Optional

HDV

#SOHVRs270U

SONY HVR-S270U 3-CCD Pro HDV/CF Flash Camcorder

- Interchangeable 1/3" Bayonet Lens Mount System
- HDV/DVCAM/DV Tape Recording
- Native Progressive Recording and Solid-state (CF) Memory Recording
- Carl Zeiss Vario-Sonnar T* Lens
- 3 1/3" Progressive CMOS Sensor System with Exmor Technology
- Down-Converts HD to SD
- 3.2" (16:9) Wide LCD Monitor
- HDMI output and i.LINK Interface



DVCPRO HD

#PAAGHVX200A

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- DVCPRO 50 & 25 Recording
- 3.5" LCD Monitor
- MiniDV Transport SD Recording



HDV

#SOHVRV1U

SONY HVR-V1U 3-CMOS Pro HDV Camcorder

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- 20x HD Carl Zeiss Vario-Sonnar T* lens
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- Large 3.5" 16:9 LCD
- Dual XLR Mic Input



XDCAM EX

#SOPMWEX1

SONY PMW-EX1 XDCAM EX Solid State High-Definition Camcorder

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HDV

#SOHVRZ5U

SONY HVR-Z5U 3-CMOS PRO HDV Camcorder

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- Records HDV/DVCAM/MiniDV
- Dual XLR inputs, SMPTE timecode
- 3.2" XtraFine LCD with 921k pixels
- Cinema Tone Gamma and Color



XDCAM EX

#SOPMWEX3

SONY PMW-EX3 3-CMOS XDCAM EX Camcorder

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Cameras Need Lovin' Camera Maintenance & Cleaning Too



IT'S OK TO BE A BIT OBSESSIVE WHEN TAKING CARE OF YOUR VIDEO CAMERA AND EQUIPMENT.

BY BRANDON PINARD

As a videographer or photographer, you might have multiple lenses and filters that you lug around wherever you go and change whenever the shot requires their use. Over time and even with proper storage and care, your gear begins to wear out from use. It is always good to maintain your equipment well, by properly cleaning and storing it before and after you use it.

Body Care

The first part to address in caring for your camera is the largest part of your camera, the body. While the body collects the majority of dust and debris particles from the air, it is a fairly simple process to keep clean. One way is to use compressed air to blow debris from your camera's body. But be careful using this technique,

because you can blow debris deeper into areas you are trying to clean.

Another is to use a microfiber cloth or a natural-fiber cloth of some kind to wipe off the excess debris from your camera body. Being cautious, you can continue by very lightly dampening a cleaning cloth and swabbing your camera body surface, but be very careful around your camera's dials, buttons, lenses, viewfinder and controls. Next, immediately dry all surfaces of your camera with a clean and dry microfiber or natural cloth.

Lens Cap/Hood

Never leave your lens cap off for longer than required or your lens hood open after shooting – ever! This is extremely important, because the lens is the “precious” piece of equipment that also is the most difficult to properly maintain and care for in the long term. It can easily be the first thing to go. That is why the use of lens filters really safeguards your actual lens from the elements.

Filters

Keeping a filter or skylight over your lens is a great way to insure added protection and enhance your images. With a fixed-lens camera, however, cleaning your lens can make you nervous, especially if the lens has fingerprints on it, which can happen from time to time and potentially can damage your lens. The oily residue from fingers can spot the touched area to a degree that could lead to permanent fogging. If you never use interchangeable filters, we still recommend at least keeping a fixed clear filter on the lens, it's cheaper to replace than the lens itself.

If your camcorder doesn't have the threads to attach a standard filter to it, you might want to check out a new device we discovered: magnetic filter holders by Cokin. You have to first attach a lens frame to your camcorder, using a special adhesive that comes with the kit. This is permanent, and you never remove it. Then the magnetic adapter attaches to the frame, and you slide the filter up and down within the magnetic lens holder. Check the website for your camera's compatibility.

Be forewarned, though, with using any filter: some camcorders have detachable lens hoods, and you might not be able to reattach yours over the lens that is sporting a few filters.

Solvent-Based Cleaners

In the past, lens cleaners have contained various harsh and abrasive chemicals that can strip away the protective coating on lenses of all types. Such chemicals include alcohol, ammonia, acetone, silicone, glycerine and chlorine. These are coin-

cidentally bad for your health and are generally things you don't want to come in contact with, especially not on your lenses and camera gear. In our modern era of seemingly unlimited information, high technology and, more recently, sustainability, it seems fitting that, if you spend the money to purchase an HD camera, you should be able to preserve its ability to capture images clearly.

Applying Cleaning Solution

When applying a lens-cleaning solution to a lens surface, the first thing to do is to blow off excess dust and debris from the lens surface. A hand-pumped blower made specifically for cameras comes with a small brush attached and is a perfect device to add to your camera care kit. The bristles on this special brush are soft enough not to scratch your lens, and the hand-pump blows air softly to blow off most surface dust.

Like the camera body care we mentioned, you can use a compressed gas duster (a.k.a. canned air), but be very careful with it, as you can't control the direction you blow, and it's quite powerful. In the worst-case scenario, you can blow the debris off with your mouth, but don't get closer than about four inches, or you will get condensation on your lens, and don't blow so hard that you start spraying your lens. Just use short, gusty breaths like those you would use to gently help a fire get started without putting it out.

Cleaning Cloths

After you have blown off your lens surface, you want to proceed by wiping your lens clean with a cloth. A microfiber lens cloth is the best choice.

If you do not have access to a lens cloth, then the next best thing is a clean natural

A great accessory is a specialty cleaning pen made just for lenses. Besides having a lint-free brush, the pen uses a special carbon-based, non-liquid cleaning compound.



Cameras Need Lovin' Too



Unlike fixed foam casings, pluck foam can be custom fitted for your camera and extra gear. Cut a slot for your camera, battery, cables, etc., and there's a place for everything.

fiber like a lint-free strip of cotton fabric. Cotton swabs leave behind more lint than you're removing. Some engineering shops use a device similar to a swab that uses a microfiber-like substance and is lint-free.

Once you have your lens cloth in hand, proceed by gently wiping your lens surface in a circular motion. When your lens surface is clear of excess debris, you are ready to use a lens-cleaning solution.

We recently tested a product called Purosol Optical, which is a completely natural and non-abrasive lens-cleaning solution. We were impressed with its performance. Purosol did a great job of cleaning the lenses and is non-solvent-based, so there are no harsh chemicals that strip away protective lens coatings. Purosol works to neutralize the molecular charge of the lens surface. This acts as a repellent for dust and debris particles, for at least a little while. Purosol is one of the few products that are good for cleaning your LCD viewfinder and even plasma TVs.

When applying a lens-cleaning solution, don't apply the liquid directly to your lens. Apply it to your cleaning cloth, and then gently wipe the lens surface in a circular motion. Then use a dry area of your cloth to polish off the solution in the same fashion.

Stay away from solvents in general. Now that natural lens cleaners exist, there is really no reason to keep using solvent-based lens-

cleaning solutions. If you do not have access to a lens cleaner, then some warm and soapy water will do the job. Always make sure that you completely and immediately dry off all parts of your camera that encounter any liquid.

Guerilla Cleaning

No matter how much you prepare, plan and obsess about all of the different things that can happen when you are using your camera gear, at some time you will find yourself in a situation when you need to clean your gear off immediately and just don't have your cleaning supplies with you, such as in a rainstorm or dusty environment. Use your best common sense and whatever resources/tools you have available to you to gently resolve the situation. If you have to wipe a lens with some piece of clothing, use the cleanest, softest and/or most natural piece of material that you have available. Well-worn soft cotton T-shirts or "tightie whities" are the best non-lint cotton fabrics you can grab. Additionally, try to use a fabric that is dry, or you will likely do more damage than good.

Storage

After you go through the cleaning and maintenance part of caring for your camera, put it away safely. The best place is not your desk or closet, but a secure hard-shell camera case with a foam interior that can be custom-molded to your camera. When you store your camera, don't place cleaners or any potentially damaging materials or items in the case with your camera, as a single leak can be catastrophic to your precious equipment. Another option is a simple camera case. A bag with some ample padding will work as a camera case, but there are also numerous varieties of camera bags made specifically for different-sized cameras.

There is no substitute for proper care and maintenance of cameras and lenses. Taking the time to clean and properly store your equipment before and after each use will make activities like lens cleaning less arduous and will ultimately result in having your equipment last long enough to be outdated by a newer technology or format. ■

Brandon Pinard is an independent video producer.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #13798** in the subject line.



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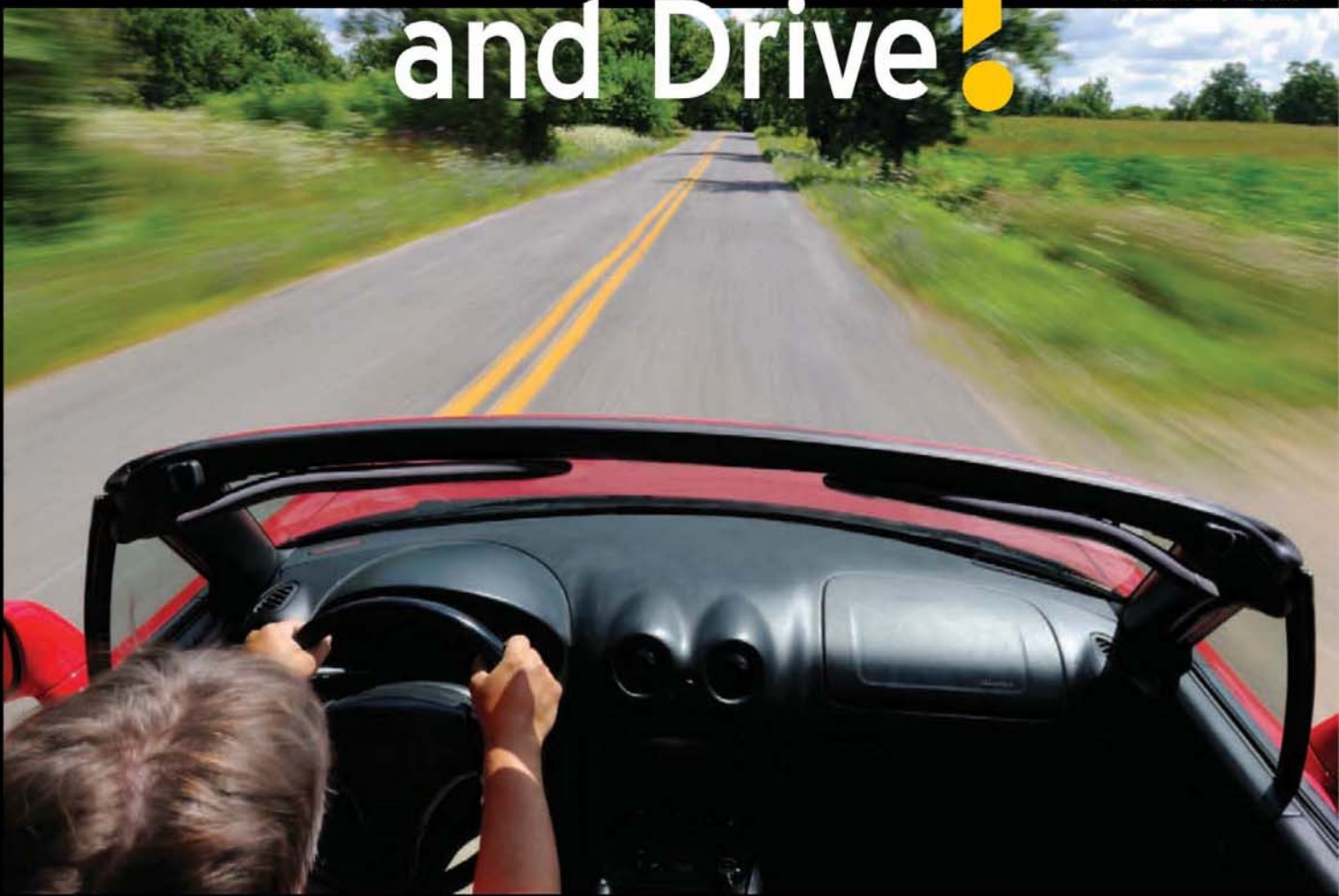
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Shut up and Drive!

BY JENNIFER O'ROURKE



There's nothing like seeing the blur of the asphalt a few inches away while cruising 60 miles-an-hour inside a convertible or a sidecar of a motorcycle. Imagine the odd feeling you get of brushing rooftops just a few hundred feet above the earth while gently swaying inside the basket of a hot air balloon.

From exotic transports like an open-cockpit World War I biplane or an Army Sikorsky helicopter to the ordinary plethora of trucks, cars, vans and boats, I rarely turned down the chance to show viewers what the experience felt like, and I learned a thing or two about shooting in moving vehicles along the way.

Telling a story using video captured from moving transports always embellishes the experience of being there, but shoot it wrong, and you can make your audience feel uncomfortable, confused or even nauseous. Depending on the vehicle at your disposal, and whether you are working solo or have a driver, there are different techniques to achieve the action shot you want.

Van? SUV? Compact? Sports Car?

Let's discuss the usual types of vehicle you might use first, and then we'll look at some techniques.

Avoid compact cars if you can, as they don't have great shock-absorbing qualities and are too cramped to successfully accommodate gear.

Sports cars are fun to drive, but unless they're the high-end luxury cars, they don't have great shock-absorbing qualities for the average road-trip video. However, most have a convertible top, so you have plenty of head room.

Family cars and sedans are a step above, as they usually do have a bigger dashboard and better shocks, but some might not allow the side windows to roll down all the way, and you're balancing your elbows or camcorder on the glass edge... ouch!

Luxury cars and SUVs are best for on-the-dash camera shots. They usually have very level and wide dashboards, great shock absorption and larger windshields, and, if you're capturing audio inside the car, these babies are the best at keeping outside sound outside.

Trucks can give you some wonderful footage. If you're shooting from the bed, the newer trucks will cushion your camera better. Below are a few tips to use that source effectively.

Family vans are my favorite vehicles to shoot from because they're so big and roomy and have that slick sliding door in the backseat for good wide shots. They have the advantages of trucks, but not the disadvantages, like being completely in the open. You have a cover over you and your gear, so you can shoot in the rain and with the side door or back gate open.

Solo or Sidekick

Whatever you shoot from, your technique might be different if you're shooting by yourself or with a driver, so let's address the differences in solo or sidekick shooting. Be aware that when we say shooting solo, we're not advocating driving along the road with a camera in one hand and the steering wheel in the other. We know some people do this, and they might even get decent enough video,



Shooting from a van is great for side-along shots. Setting your camera on a beanbag helps with shock absorption.



but it's highly dangerous, and the quality of the video is less than stellar. I mean, really, how can you watch the road and that tiny little sun-washed blown-out LCD screen, anyway? What you do need to process, though, if you are shooting solo, is how you are going to get the best shot possible.

Shooting Alone: Lock Down!

Solo shooting gives you fewer options than using a driver, but it can be done. Your first and foremost consideration should be driving safety, and your second should be your camera's safety... but, realistically, we all know our first real consideration is capturing the best shot possible. As a solo shooter, be prepared to waste a lot of tape. Don't try to turn the camera on and off at points along the road too often; you might forget when you're shooting and when you're not.

Beanbag: I always have my trusty beanbag with me when I go on road trips. It's good for so many purposes, and dashboard shooting is a great one. In a recent *Tips & Tricks* vidcast on driving and shooting (www.videomaker.com/vidcast/107), we set the camera on a sandbag that has an attached belt. We secured the camera to the belt, then dropped the sandbag on top of the camera for extra security. Solid as a rock... almost.

Tripod: Use the smallest tripod you can. Inexpensive 'pods made for still cams are great for in-car use. Their legs are usually shorter than the robust camcorder 'pods. When shooting in the car, out the side window or through the windshield, first set one leg of the tripod on the floorboard and the other two legs towards the rear of the seat. Then, stretch a bungee cord around the center spreader, if your tripod has one, or around the back two legs, then attach it under the seat. Before you attach the camera to the tripod, level your tripod head; it's easier than trying to level the legs.

You really want to tie the tripod down if you're shooting from the back of a truck or van, so a

Shut up and Drive!



Sandbags or homemade beanbags help secure your camera when you are placing it on a dashboard.



slight bump doesn't send it flying. Tie strips of belting or bungee cords from three different positions to secure it well. A sandbag wrapped around the legs helps with the security. You can never secure that tripod enough.

Shooting with a Driver: Options!

I prefer to shoot handheld rather than using a tripod if I have a driver. I can maneuver the shot better, avoid shooting the car frame edges and use my body as a cushioning agent. If you're shooting from the side, strap yourself in with the seatbelt, but set the camera in your lap. If you're shooting from the back of the van with the gate open, sit as far back as you comfortably can. A beanbag helps cushion the shot.

Techniques: Through the Window

Many people want that "through the windshield" look... complete with bugs, bird droppings and window cracks. Remember the sunspots from the opening shot of the old *Sanford and Son* TV show? These all say "road trip," but let's try to spruce the window up a bit.

Clean it: After you've washed the window, wipe it down again with alcohol and newspaper to

remove streaks. (Don't clean your camera's lens or viewfinder like this, though, as the alcohol will damage some sensitive pieces.)

Time of day: The best time to shoot and avoid reflections or sun-glare is late afternoon or early morning, as long as you're driving with the sun behind you. Keep this in mind when you have to string many shots together.

Filter it: A circular polarizer will allow you to shoot right through most windows, masking glare and reflections. An ND (neutral density) filter allows you to open the aperture a bit, softening the background focus.

Cover it: A small cover of tin foil over the top of the camera sitting in the windshield will shade the lens and help cut some glare.

Techniques: Side Angle

One of the most important shots for a driving scene is the side angle shot, rather than straight through the windshield for the driver's POV. Many people shoot their subject directly through an open side window at a 45-degree angle from the road, which can cause your subject or scenery to blast by too quickly. A trick to shooting a side-angle shot is to shoot it so your viewer can see the scene without getting carsick.

Position it: When shooting out a side window or from the backseat of the van, position the camera at the 2:00 position, rather than at the 3:00 position or a 45-degree angle from the direction the car is moving. You'll still have the feeling of driving, but the background won't be as nauseating. Of course, nothing says "road trip" better than that fast blur of the yellow lines on a road or cornfields whizzing by, but keep it short, for the effect only.

Support it: If you don't have access to a van and have to shoot from the passenger seat, drape your trusty beanbag over the window edge for support. If you have access to a car with a sun-roof and want to try shooting outside it, set the beanbag on the roof, then support your elbows on the bag and hold the camera in tight.

Go wide: The best footage is going to be with your camera at its widest angle possible. A zoomed-in shot reflects all the bumps in the road, is nearly impossible to focus and blurs the passing landscape too much.

Reverse it: What if you want to show a shot that appears to be straight ahead buzzing down the road, but you don't want to shoot through the windshield? If you have a truck, SUV or van, this trick works on a lonely road. Shoot out the back of the van or truck for some distance, then reverse the shot when editing. It looks like you're going forward, not backwards. Watch for telltale

Tie tripod legs tightly first, then mount the camera. Taller tripods don't work well in most cars, because the camera will hit the ceiling.



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Shut up and Drive!



Again, that trusty beanbag helps with shock when shooting from a sunroof. Wrap your arms around the camera and have your driver keep a steady, even speed.

giveaways like pedestrians, cars at a distance or even birds or planes flying in the background.

Eat my dust: A technique that you often see has the vehicle ahead with the camera approaching him from behind, pacing him for a while, then passing him up, allowing a natural transition to another angle.

Techniques: Shoot the Driver

There may come a time where you need to turn the camera on the driver. This can be trickier than you think. The space between driver and camera is short, and shooting inside a vehicle in daylight can cause either the background to be blurred or the driver to be dark. It's hard to balance both.

That ol' beanbag again: If you are shooting the driver, set the camera on the dashboard as we described earlier, but facing the driver. This puts the camera at his level, giving you less chance of shooting into the sun.

High noon: Avoid shooting from 11:00 a.m. to 3:00 p.m., when the sun is at its highest point, because the background outside will be impossibly bright or your driver inside too dark.

Light it or reflect it: If you can, try using a small bounce card to put some fill on your driver. Sample around with a small portable light that you can balance for outdoor exposure. Shooting at the Magic Hour, that half-hour before dark, can give you some beautiful color outside and balances well with a small low-beam light inside. I've also used a very tiny pen-light, just to fill in some dark spots.

Gel it: If you have the time, patience and money, an orange gel over the driver's window will balance your light inside, too.

Adapt it: A wide-angle adapter on the front of your lens will appear to give you more breathing room between driver and camera.

Techniques: General

Check out your location at different times of the day. If you travel north to south in the late afternoon, you may be shooting right into the sun.

Screen direction: The shadows on the scenery can flip around when you turn your car around, so always be aware of which side of the car the sun is on. If you change direction, your landscape's shadow direction will change, too.

Speed: Try to use a car with automatic drive, so you don't have the shifting jerk, and drive about 35 miles per hour. Anything else is too fast and will blur your background; anything slower can actually accentuate the bumps in the road.

Eye of the beholder: I once got seasick shooting on a child's merry-go-round because I was trying for a blurred shot and kept my eye glued to the lens. Bad idea. Once you've focused and framed your shot, try to keep your other eye open and on the horizon for your own stability. Or look away from the camera and just glance at it once in a while to assure proper framing.

Up, Up and Away!

These tricks work well whether shooting from a sidecar, balloon or other exotic conveyances. Always stay wide, so your viewer doesn't suffer from motion sickness, and keep your eye on the distant horizon so you don't get sick. Always shoot some portion of the transport you're traveling in. A floating-in-the-air shot without this reference can make people uncomfortable.

Shooting video from a moving vehicle is always going to be an experiment. More than half the video you shoot will be unusable, but the stuff that makes it to your movie will greatly engage the viewer and enhance the experience.

Try not to have too many back-to-back moving shots, allow your viewer's eyes to settle down on something solid and static and remember to frame some of the shots showing the window edges, windshield wipers, rearview mirror or door edges. *Bon voyage!* ■

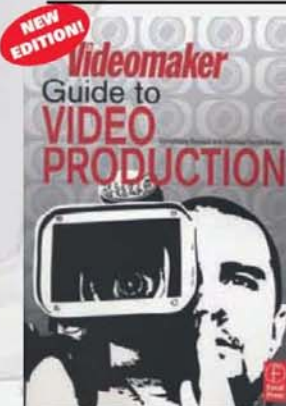
Jennifer O'Rourke is an Emmy award-winning videographer and editor and *Videomaker's* Managing Editor.



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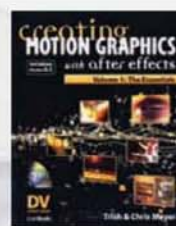
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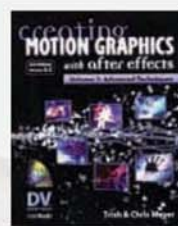
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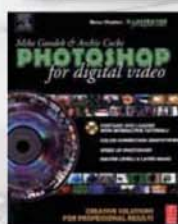
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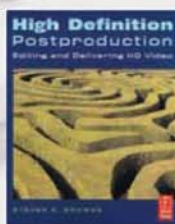
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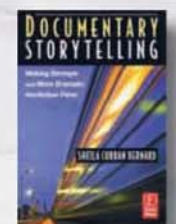
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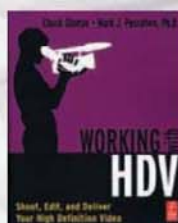
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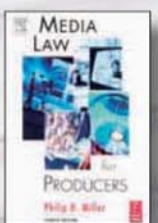
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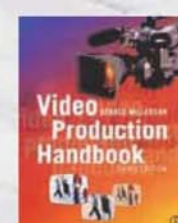
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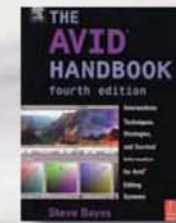
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About Face!

by Kyle Cassidy

Many video cameras now seem to include face detection capabilities. But what exactly is face detection? Our primer explains how it works and how it might stump you, too.

The story of face recognition technology begins back in 2005, when Nikon released the Coolpix 5900, a mid-range point-and-shoot still camera with what it called a Face Priority mode. The camera would use built-in algorithms to examine a scene and identify human faces. It would then adjust contrast, color balance and exposure to “properly” expose the faces. Other still camera manufacturers followed suit, and today even high-end DSLRs (digital single-lens reflex cameras) ship with the feature. Something this exciting wasn’t about to remain solely in the still photography world. By 2008 Sony, Panasonic and Sanyo had all incorporated face-detection features into their current batch of video cameras. But what is face detection? A gimmick or a useful tool? Let’s take a look.

Reasons for Face Detection

Our own eyes are automatically drawn to other human faces. When we’re walking down the street or glancing at images, our eyes leap to faces and our



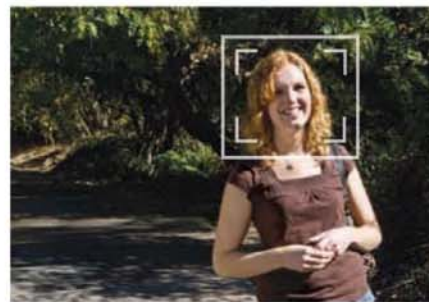
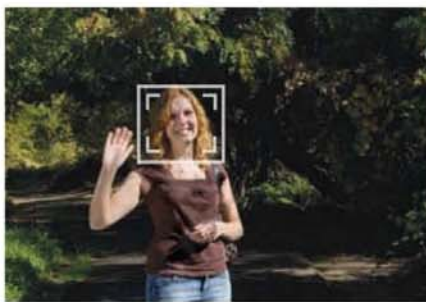
brains instantly attempt to determine not just whether or not we know this person, but also mood, attractiveness or whether this person may pose a threat. It all happens in fractions of a second, and most times we don’t even know that we’re doing it. It makes sense then that, when we look at video, we’ll also seek out faces, so, in recording video, we want to make those faces look their best.

Often in life, people and lighting are not as a director would place them – huge windows may backlight a bride and groom, bright sunlight may make dark eye sockets or overhead fluorescents may throw a green hue onto

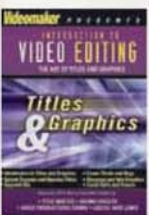
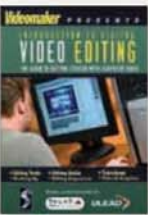
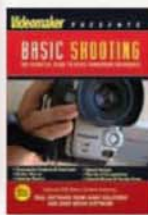
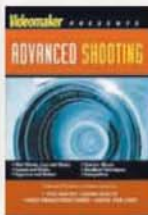
someone’s skin. Ever-changing lighting and distance conditions have made auto-focus and auto-exposure indispensable in modern camcorders. Face detection is no different. It will identify a face, track the face if it moves across a frame and then perform a series of tasks, such as selecting a focus point or brightness and contrast.

What Does It Do?

Most face detection algorithms recognize not just one, but multiple faces. Usually they consider the face closest to the center the most important or primary face; they notice others behind it or on the periphery, but focus



A typical face detection algorithm will track a face (or faces) through a shot, continuously keeping the face (or faces) in focus, while adjusting exposure, brightness and contrast.



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With face detection switched on, the camcorder will focus on the model on this shot (top). Turning off the feature will make the camcorder's autofocus focus on whatever is largest in the frame and closest to the lens (bottom).



and image adjustments will follow the primary face. If the primary face leaves the frame, the software will choose a new primary face. Many of the current crop of cameras will pick five or more faces (if they're available).

Does This Technology Know Who I Am?

Though sometimes used interchangeably, the terms facial recognition and facial detection are actually two different technologies. While your camcorder can pick a face out of a crowd (facial detection), it doesn't (yet) have the ability to search a database and identify the people in the frame (facial recognition); it knows only that there's a face in the frame – it's completely clueless as to whose face it is. Companies like Betaface (among others) have sophisticated methods of identifying specific people, based on techniques similar to this, but that take more accurate measurements of the distance between eyes and mouth, the width of the mouth when open and other things, such as hairstyle and whether the person is wearing glasses. It can then compare these measurements to a database and look for matches. The idea that your camcorder will someday be able to do something

like this on the fly is not farfetched. Already social networking sites such as Facebook allow viewers to manually tag photos with the names of people in them and then link them to a pool of other photos. This suggests that the desire for automatic recognition (and tagging, by extension) is there, and now it's merely a matter of the technology catching up.

How Does It Work?

Most face-detection implementations, whether done in hardware or software, look for two eyes, a nose and a mouth, though some companies now claim that their technology is able to detect faces in full or three-quarter profile. Once the software has identified a face, the software will highlight it in the viewfinder and track the face as it moves. Additionally, the software can adjust the image, focusing on the face, for example, and tracking while a person moves.

You may be thinking, what happens when there are non-human faces in a frame? From what we've seen of them, all of them are designed to pick up on human faces first and foremost; but of course, there are differences in all of the face detection algorithms currently available. Having said that, though, there are animal-specific face detection algorithms that are used in scientific contexts. These would only be truly useful if you're actually on a scientific mission, though. Unless you happen to make pet videos for a living... but that's your business.

Will It Work for Me?

So far, all of the camcorders we've seen that include face detection also let you turn the feature off. Why would you want to do that? An artsy shot with flowers in focus and the subject holding them in soft focus is a good example of when you might want to turn this feature off.

The only way to know if facial detection technology will help you in your production endeavors is to try it out. Never experiment on an important production – spend an afternoon in a test environment, similar to your “real” shooting, simulating your normal shooting conditions, and see if facial detection is helping your images and helping you do your job with less effort. ■

Contributing Editor Kyle Cassidy is a visual artist who writes extensively about technology.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14055** in the subject line.

HD Online Convergence

by Jeff Sengstack

HD online: We have the technology. We can build faster internet connections, with better delivery service than ever before. Better, stronger, faster.

The convergence of lower-cost HD prosumer camcorders, faster internet connections and improved content delivery networks (CDNs) is leading to a surge in HD video online. With that upswing come opportunities for videographers to bring their work to the masses and draw in more customers.

Want to share your HD videos and garner some feedback from other videographers? Upload your HD products to Vimeo.com. Do you have a programming idea and the gear to produce it on HD? Pitch that project to ON Networks. Want to offer streaming HD on your site? Turn to a CDN like Akamai.

All these possibilities now make perfect sense. Technological convergence is the reason. For example, I just installed new pipes in my home. Gone are the clunky 1Mbps (on good days) download speeds of DSL. Here today is 6Mbps cable. I now can enjoy full screen width, smooth playback, streaming 720p HD on my PC via the internet. I can even use a DVI-to-HDMI converter and watch online content on a home HDTV screen. The content selection is surprisingly vast, despite the infancy of the technologies needed to get to this point. And the offerings can only improve.

What's even more exciting is that just about anyone with HD video production equipment can take advantage of online HD. Unlike broadcast HD TV, which requires layers of expensive studio gear and transmission hardware, HD on the web is relatively simple and much less expensive.



HD Online Sharing Opportunities

As is typically the case with emerging technologies, it's frequently the nimble startups that lead the charge. Vimeo.com got its start four years ago as a sideline for one of the owners of Connected Ventures, the company behind *CollegeHumor.com*. There were no video-sharing sites then, so Jakob Lodwick created one to host his videos. Not much changed until media mogul Barry Diller's InterActiveCorp bought a controlling share of CV. IAC beefed up the staff, upgraded Vimeo's interface and functionality and launched HD support a year ago.

Since then Vimeo has added multiple features, including channels, groups and Facebook support. While the user base has grown

substantially, "the general atmosphere of respect and creativity remains," says dalas verdugo, Vimeo's community director. "We understand that people are pouring hours of their time into making videos that look amazing, and we want to honor that effort by showing them in the highest quality possible."

Of all the HD sites I visited, Vimeo's offered the best of all worlds. Upload-



Vimeo, like many other video-sharing sites, uses Adobe Flash to encode all of the video on the site. Vimeo supports both SD and HD video.



ON-networks.com gives qualified HD video producers opportunities to turn their ideas into cash by sharing ad revenue with producers who upload video to the site.

ing is easy. Vimeo accepts multiple HD formats, but they recommend that you compress your files using H.264 (MPEG-4 Part 10) for the video codec and AAC for audio. At the minimum, the data rate for HD uploads should be 5Mbps with a resolution of 1280x720. Users are allowed to upload up to 500MB per week with no limit on the cumulative total.

Vimeo compresses and converts all HD into Flash that streams from their site at 1.6Mbps, using the non-proprietary, industry-standard Adobe

AS WITH MOST EMERGING TECHNOLOGIES, IT'S FREQUENTLY THE NIMBLE STARTUPS THAT LEAD THE CHARGE.

Flash browser plug-in. I think that is a huge plus for Vimeo. Flash version 9.0.115, released in December 2007, supports H.264 and AAC audio at HD resolutions, and, at last word, it had an 82 percent worldwide penetration.

Most other HD sharing sites I visited require users to download and install proprietary players. That always makes me uncomfortable, and I usually give such sites a pass. I don't want to clog my

hard drive with unnecessary clutter nor take the risk of running downloaded executable files. If you find that you don't use the service, what will happen if you forget to remove the players? They will just eat your system's resources unnecessarily.

Additional Video-Sharing Sites

- **SmugMug.com** – Photo- and video-sharing site. For \$60-\$160 per year, you can upload any number of HD videos up to five minutes each in length.
- **YouTube.com** – Now offers “high-quality” videos for higher-resolution, standard-definition video. A “watch in high quality” link allows viewers to see it closer to its original quality. At last word, YouTube had no plans to add HD.
- **Motionbox.com** – Offers HD videos and free storage up to 1GB, (see story page 8).
- **Veoh.com** – Now offers HD videos.
- **Veetle.com** – Now offers an HD sharing service, using a proprietary player that you will need to download before using.

Monetize Your Original HD Content

Several sites are seeking HD video producers with ideas for episodic programming that will attract viewers and advertisers. ON Networks is a major player in this arena. Their content criteria are:

- Original, authentic and professionally-produced programming
- Tight, compelling content that is rich with story and character
- On-camera talent who are unique, credible and experts in their fields

When I last visited the ON Networks site, it had 400 episodes of 30 different shows. ON Networks lets content providers use a variety of file formats, but the company urges producers to use Panasonic DVCPRO HD at 720p or 1080p and wrap their videos in QuickTime MOV files.

File sizes can be prohibitive, so some producers ship their programming to ON Networks on portable hard drives. Others use ON Networks FTP servers that can take multiple upload streams. ON Networks uses a third-party firm to compress and convert the HD files into Flash, H.264, MPEG-2 and Windows Media Video 9. In that way, HD videos can play on multiple devices, including Xbox, iPod and mobile phones.

ON Networks monetizes content through advertiser/sponsorship deals and distribution agreements and splits the revenue 50-50 with the content creators.

Additional HD Video Sites Worth Checking Out

- www.thehdweb.com: Akamai's HD promotional site
- www.adobe.com/products/hdvideo/hdgallery: Flash HD videos
- www.apple.com/quicktime/guide/hd: H.264 HD videos
- www.nasa.gov/multimedia/hd/index.html: Cool HD stuff about space

Other HD Video Content Publishers

- **Vuze.com** (formerly known as Azureus and Zu-deo) – Streaming HD using a proprietary player
- **Move Networks (movenetworks.com)** – Streaming HD using a proprietary player
- **DoveTail.tv** – This was in beta when I visited. It offers video downloads via peer-to-peer sharing.

Highly-Distributed Computing

ON Networks and Vimeo don't have the financial resources to create the infrastructure needed to provide streaming HD video to thousands of site visitors. Instead they turn to CDNs – content delivery networks.

CDNs have been around for about a decade. A lot has changed in that time. In 1998, online video consisted of postage-stamp size (160x120), jerky 10fps clips playing at 40kbps. Now, CDNs stream 1080i (1920x1080) HD at 10Mbps or more.

CDNs accomplish this by creating massive private networks and server farms around the world to host content and deliver it from multiple servers simultaneously. Proximity is critical to download speeds, thus the need for so many server locations.

The largest content delivery network, Akamai Technologies (Akamai is Hawaiian for smart or intelligent) has 1,000 data centers and 25,000 servers in 650 cities and 70 countries. The highly-distributed architecture means Akamai is within one network hop of 90 percent of all internet users worldwide.

The numbers are even more staggering when you consider that the throughput needed to stream HD to one million viewers simultaneously (equivalent to one Nielsen rating point) amounts to 7 terabits (trillion bits) per second.

Akamai research predicts a booming HD future. Half of the content providers polled report they already offer HD online or will offer it by Spring 2009. An additional 30 percent say they'll offer it by Spring 2010.

Other CDNs

- **Limelight Networks (www.limelightnetworks.com)** – Used by ON Networks
- **CDNetworks (www.us.cdnetworks.com)** – Largest CDN in Asia. Founded in South Korea to serve the huge online gaming market there.
- **Bit Gravity (www.bitgravity.com)** – Used by Vimeo.com

Don't Let HD Pass You By

If you're an HD video producer, getting your foot in the door of the HDTV broadcasting business is



The HD Web, Akamai's promotional site, presents a full selection of HD content and file types.

a daunting challenge. Not only are there financial barriers to entry, but HDTV programming is not yet at the point where it is catching the mass market (but it's only a matter of time before that's the case). The Consumer Electronics Association reports that only about one-third of U.S. households have HDTVs, and most of them use their widescreen TVs for games and DVDs, not television programming.

On the other hand, narrowcasting content on the internet is easy and relatively inexpensive, and you can reach a potentially huge international audience. Nielsen Online reports more than 90 percent of active U.S. internet users connect via broadband. The Information Technology and Innovation Foundation states that average download speeds are climbing worldwide. Japan and South Korea top the charts with speeds of 64Mbps and 50Mbps respectively. The average for the top 30 countries is 10Mbps with the U.S. lagging behind at 5Mbps. But even 5Mbps is more than adequate to handle streaming 720p HD.

There are minimal barriers to entry and multiple opportunities for those who want to post their HD products online. ■

Jeff Sengstack is a video producer, junior college computer science instructor and author of video production how-to books. He was also a TV news reporter and anchor.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use article #14054 in the subject line.

Lighting Greenscreens

by Robert G. Nulph, Ph.D.

Many editing software programs now have easy-to-execute chromakey effects, but, to get your scene looking good, you need to plan first and light it right.

You have the greenscreen, you have the right editing software, you have a great idea... but how do you make your subject look real? It all comes down to lighting. Lighting for greenscreens takes a lot of planning, a good eye for detail and pure imagination. In this column, we will look at the techniques and setups you can use to create believable greenscreen scenes. So... let's venture into the studio or your living room, if that is where you wish to work – away from the drifting snow or frigid temperatures that may surround you this time of year.

Lighting the Greenscreen

There are two major areas of concern when lighting for greenscreen: the background and the subject. The best way to approach greenscreen lighting is to treat each as a separate lighting setup. Let's take a look at lighting the green background first.



Did you ever wonder why video uses greenscreens to create special effects? Chromakey green – as the true greenscreen color is officially called, is a color that hopefully you will never see anyone wearing. OK, yes, some of your golf outfits may have this color emblazoned throughout, but usually the color is not part of our everyday fashion. It is also a color that no living being has as an eye color, something that can be a problem with the bluescreens that are used in film. Chromakey green is also a color that you can easily remove electronically from

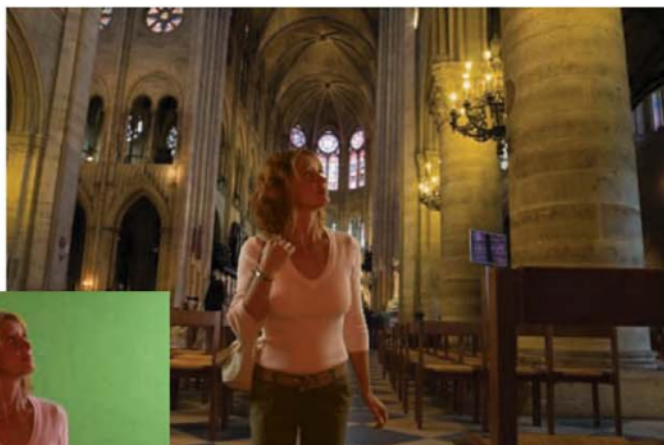
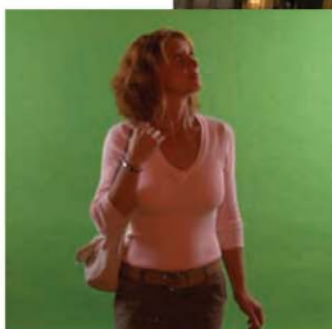
the image as a chromakey. Easy, yes, but to do so, you have to make sure the chromakey green background has no wrinkles or seams and is well lit.

Lighting the chromakey green background is actually quite easy. The first thing you do is determine the size of the background needed. This will help determine the area you need to light. If you are doing a simple one-person interview from the waist up, then your background doesn't need to be very big. There is no reason to light a 12-foot background if you are using only a five-foot space.

Left: A poorly-lit chromakey wall with shadows is difficult to pull a good key from and can spill green onto your talent. Right: A well-lit chromakey wall provides a cleaner key that makes masking and editing easier.



Lighting it right requires more than just an even wash. Dropping your talent into a naturally lit exotic scene requires you to light her to match her background.



tently-lit background that will reflect one color back to the camera. The more consistent the lighting and color, the easier it is to remove that color so that you can key your subject over a different background.

Lighting the Subject

Once you have lit your background, it is time to light the subject. This is where the planning and imagination really come into play.

Planning is essential for greenscreen lighting success. You have to determine a number of things before you even begin planning your lighting

setup. When shooting or collecting the background footage you are planning to use, carefully study the lighting. Where is the main light source? What kind of light is it? Is it hard or soft? Indoor or outdoor? Bright or dim? Moving or steady?

You also need to determine the movement required in the scene, if any, as well as the size of the chroma-key green background. It is essential that the background be large enough to fill the scene. You also have to have enough space in front of the greenscreen to reduce any reflected green falling on your talent and your talent's shadow falling on the greenscreen. You want to try to get your subjects as far away as possible to make it easier to light them, as well as to prevent green reflecting on their skin and hair.

Setup One – The Ski Slope

Let's say you want to see your subject standing in front of a beautiful mountainous ski slope. The sun is bright, the sky is blue and the air is crisp. You send your crew out to get the shot for the background, because you know you don't want your talent to stand freezing on the ski slopes trying to get their lines right for the scene. In the studio, you will also not have to worry about skiers running in front of the camera, wind noise on the microphone and the sun changing as you do multiple takes.

Look at the footage. Where is the sun? How long are the shadows? If you did your planning well, you would have placed the sun in the shot so that it would naturally be coming in from a lower angle at about 4 o'clock on your talent's face (early morning and late afternoon are great times to use low-angle lighting). This would provide a very pleasing key light. The reflection off the snow on the slopes would provide the backlight and fill. Now all you have to do is duplicate that situation.

The sun is a hard light – therefore you would use a small, intense reflector spot located at the same angle as that of the actual sun when

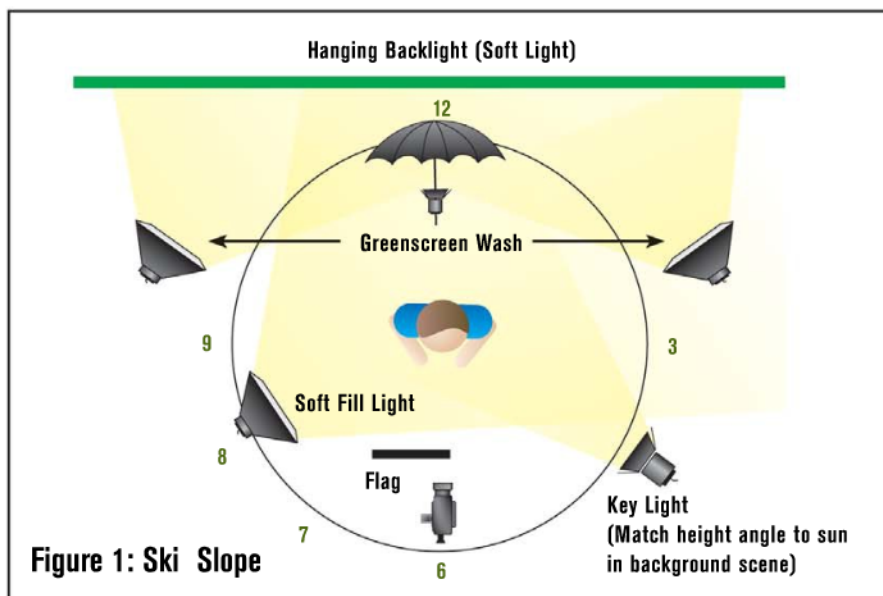


Figure 1: Ski Slope

the crew took the shot. The fill light and the back light can both be softer, because they are created in the real scene by light being reflected everywhere by the sun off the snow. Place your backlight as close to the center of the subject as you can at the 12 o'clock position, so that it not only provides a soft light along the shoulders and hair of your subject, but it also eliminates any green that may be reflecting from the chromakey green background. It is essential that you can see no green on the subject. Then focus your fill light from the side opposite the key – at around the 8 o'clock position. Gel all of your lights with color temperature blue gels to duplicate the light from outside, and white balance as if you were shooting outdoors. The outcome should be pretty realistic, and your audience will never know the talent is warm and dry in a cozy studio (see Figure 1).

If you have purchased background footage, use the shadows to determine the placement of the lighting. Then go through the same procedure, duplicating what nature has provided.

Setup Two – Exotic Interior

What if your location is an exotic interior? You were able to get the rights to footage shot in an elaborate and ancient cathedral, and you want to show your talent having a hushed conversation in the massive space. To be believable, good lighting is the key.

For this shot, you will need a larger chromakey green background. Light it as evenly as possible. Then begin your lighting setup for the talent.

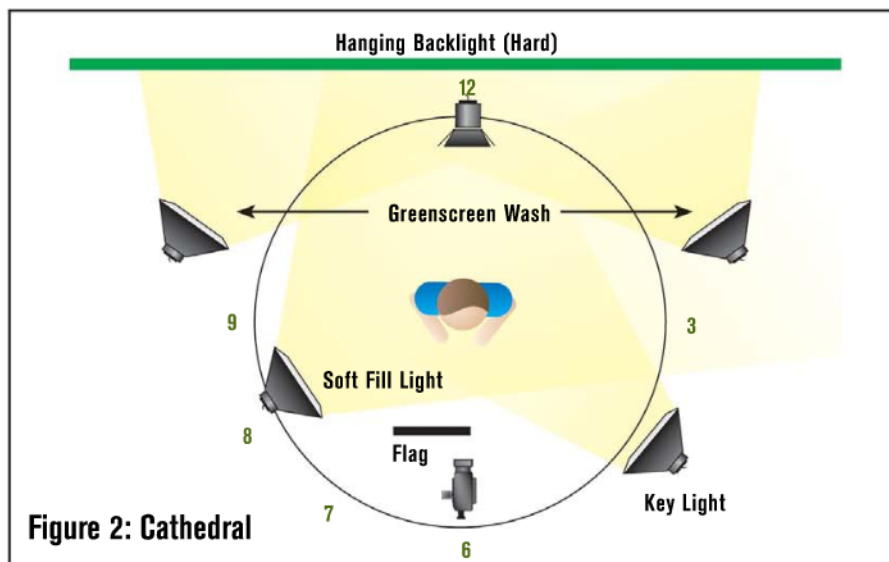


Figure 2: Cathedral

Carefully look at the footage you will use in the background. Where do the shadows fall? What kind of light is prevalent in the scene?

For the purposes of this setup, let's assume the lighting is diffused from a number of different sources, very warm and not really bright.

Set up a soft light as your key at the 4 o'clock position, so that it fills your talent's face. If you are working with two people having a conversation, decide which is the more important, and put that person on the side where more light will fall. The key light for one then becomes the fill for the other and vice versa. Set your fill so it is less intense than the key and doesn't give much direction. It should look like ambient spill light and match that in the cathedral. Finally, add a backlight at the 12 o'clock position, hanging above the actors if at

all possible. Make sure you flag the backlight from your camera lens to eliminate lens flare.

When you have all of the lights set, white balance against a pale blue cloth. This will tell your camera that light blue is white, and the result will be a very warm-toned image. The result should be very believable (see Figure 2).

The Keys to Chromakey

To make your chromakey experience successful, remember that you must light the background greenscreen as evenly as possible, and you should place the talent as far from the greenscreen as the scene will allow. You need to carefully study the background footage to determine the type of lighting needed and then work hard to duplicate its intensity and type. From outer space to the dark ages, the sky's the limit. With good planning and careful placement of lights and talent, your scene should be quite believable. ■

WHY GO GREEN?

With today's editing software, you have the ability to place any color behind your talent to use for a chromakey. All you have to do is make sure there is absolutely nothing close to that color in the clothing or eyes of your talent. The industry uses chromakey green because you so rarely see it in nature and fashion. You can buy chromakey paint or chromakey drops at your video supply store or big box retailer.

Contributing editor Robert G. Nulph, Ph.D., is an independent video/film producer/director and teaches video production courses at the college level.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14052** in the subject line.

Simple Compositing

by Morgan Paar

Everyone loves to be awed by movie magic, and you can dazzle your audience using our simple compositing tips that reveal the Secret of See Through Layers.

Compositing is omnipresent. It would be nearly impossible to watch a Hollywood film or an hour of television and not see some sort of compositing. Some films, such as Zack Snyder's 2006 Spartan epic *300*, are nearly all compositing. But what is this technique, and how do we who have less than a Hollywood budget use it?

Compositing is the combination of two or more images to form a single final image. The six o'clock news meteorologist standing in front of a weather map is a good example. The map is not really behind this person, nor is it projected. The composite is made in the "booth," where a video engineer combines the feed of the live meteorologist with the image of the map and the icons of clouds, the sun, names of counties or towns, etc.

Another great example of common composites is lower thirds. These can be static graphic or flashy motion visuals which usually identify a person and his profession. You find them often in news programs, documentaries and sporting events such as football and baseball games. Similarly, titles in films, commercials and music videos use this graphic type of compositing.

Now, I know what you are thinking: "Ah, I get it, computer-generated effects." But not all compositing is the product of microchips. George Melies, a stage magician working in France over one hundred years ago, often gets credit for being the first compositor for moving pictures. Melies admired the works of film pioneers, the Lumière brothers, in 1895 and was inspired to combine some



of his sleight-of-hand with film. His famous 16-minute black-and-white film, *A Trip to the Moon* (*Le voyage dans la Lune*, 1902) can still be found pleasing audiences over a century later.

The Basics

The basic idea behind compositing is transparency. A great analogy is t-shirt silk screening. You stretch fine-mesh cloth or screen over a wooden frame. You press ink through this screen onto a shirt. Next you adhere a "negative"

of the image you want onto the screen. It's a bit like a stencil: the negative image attached to the screen will not let ink through.

When we composite, our "frame" is the pixel dimension of our video, 720x480, 1280x720, 1440x1080, etc. The screen is usually what's called an alpha channel. Instead of using a negative, you place your still or moving image right on your "screen." The "screen," "frame" or alpha channel usually disappears completely, leaving your

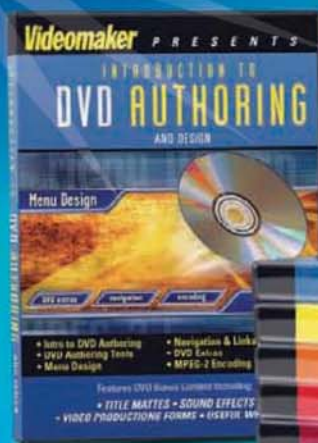


The checkerboard pattern seen here in the background represents the alpha channel.

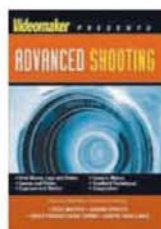
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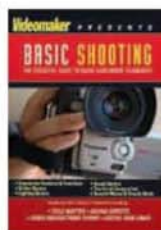


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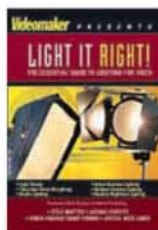


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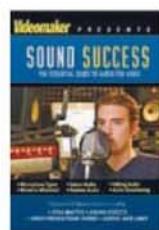
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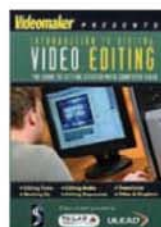
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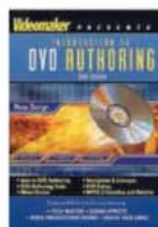
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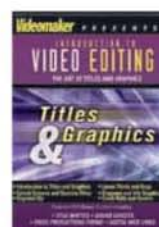
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image behind. That image can also be something more abstract, such as fog – a tint of color which will alter our image.

The alpha channel is important, because it keeps our visible image on the correct x- and y-axis. If we have a lower third which we want to use in a documentary about school teachers, we can make a template of our lower third and switch out the names and occupations of all the teachers, administrators and students in the video. The alpha channel makes sure that this “floating” lower third is always in the same position on the screen relative to height and width. Make sense? Without this layer locking in our graphic to its correct x- and y-axis, it could float around our “frame” and be inconsistent.

There are times we need to be very conscious of this alpha channel and make sure we keep it intact. For example, when we export an image from Photoshop and import it into our editing software, we need to make sure the alpha channel is not compromised. If we create graphics, lower thirds, watermarks or any other “layer” for a composite within our editing software, we may not even be conscious of this alpha layer.

To oversimplify what we are talking about, an alpha channel is 100% transparent. Your image can be fully opaque or partially transparent, have feathered or gradient transparencies and/or many other variations, adding to the complexity of your composite. Any of this making sense? Perhaps some examples will make it clearer.

Lower Thirds and Bugs

We call graphics living in the bottom area of the screen a *lower third*. It usually identifies an on-camera speaker. If you’re over forty, you may know them as *Chyrons*, *Vidifonts* or *superbars* (or *Astons* or *name straps*, if you speak with a British accent). Today’s lower thirds, at least in broadcast news and sporting events, are usually fancy, quickly-moving motion graphics, often accompanied by sound effects. Most editing programs have nice-looking lower-third templates or ways to make custom lower thirds built right in their titlers. Adobe’s Premiere Pro has a robust titler with many lower-third options. Some quite robust third-party titlers that make industry-quality lower thirds include Boris FX, Ulead COOL 3D and Apple’s Motion. Adobe’s Photoshop and After Effects are 2D and 3D still- and motion-graphic favorites.

A *bug* or *watermark* is usually a semi-transparent graphic icon or logo you use to tag a video. The broadcast networks, such as NBC and ABC, first used them, but now you find them on most cable channels as well. If you watch YouTube videos em-

bedded in a non-YouTube website or blog, you’ll see a YouTube bug in the lower right corner.

Green-/Bluescreen and Special Effects

Thanks to the behind-the-scenes, extra footage found on many blockbuster Hollywood DVDs, we know the wonders of green- and bluescreen work on movies such as *The Lord of the Rings* trilogy, *300*, *Sky Captain and the World of Tomorrow*, the *Star Wars* prequel trilogy, etc. Many of the scenes in these movies have layer upon layer of composites, such as painted backgrounds, live action footage and many layers of special effects – laser beams, explosions, robots, etc. But this is not only the domain of Hollywood studios with billion-dollar bank accounts. Robert Rodriguez is proud of the fact that he made many of the special effects in the *Spy Kids* series in his garage.

Wipes and Split Screen

You know that typical split-screen/wipe when a character on screen calls another person? Viewers see the footage of a person answering their phone slide into the footage of the caller, usually from the right. This is compositing. Most such wipes are. There are many pre-made wipe transitions in editing programs, but you can also make your own by using your knowledge of compositing.

Special Effects

Remember that holographic SOS message sent by Princess Leia via R2D2 in *Star Wars, Episode IV: A New Hope* (1977)? We can easily do that today with compositing. Want ghosts in your story? No problem. All of these types of special effects can be done easily with compositing. How about an image of yourself talking to yourself?

Compositing is fairly simple, but you can get as complex with it as your imagination allows. The main concept involves layers. You work with two



A sample of a bug generally (but not always) found in the lower right-hand corner of the screen. Most bugs have some transparency, but others use solid colors instead.

A studio light for an "eye," a camcorder case for a "body" and various other video accessories become our version of R2-D2's holographic feed of our fairy godmother watching over the Videomaker staff.



or more video layers on your timeline, add an image on video track #2 with some sort of transparency, and you will be able to see through to video layer #1. There are all sorts of ways to do this. We have already mentioned alpha channels. Put a bug of your station's name, "Video Wizard Television," in the lower right corner of your frame by

placing the logo with invisible alpha channel on video track #2, and this half-transparent gray logo will appear over any video you have on video track #1. Shoot an actor walking toward a camera against a greenscreen and "key out" or digitally erase the green background, drop the walking actor on video track #2 over footage of an

exploding building on video track #1, and you have a giant Hollywood effect. Cropping is also a useful tool, especially for the talking-on-the-phone example above. All the big editing programs allow you to crop a moving image.

See-Through Layers

This really is not as difficult as it seems. Figure out how your particular editing program handles alpha channels, key effects and cropping, and start making your own Hollywood effects or network television graphics. There you go. Compositing. Easy. ■

Contributing Editor Morgan Paar is a nomadic producer, shooter and editor, who currently teaches high school video production.



FEEDBACK

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Choosing a Microphone

by Hal Robertson

C'mon! Pick a mic.. any mic!
Right!? Wrong! From pickup patterns to wired or wireless, there's a confusing array of mics to choose from. Let's narrow your focus a bit.

We've all heard them – videos that sounded like the mic was under a box in the next room. Can I let you in on an industry secret? Whether you're shooting for the big screen or YouTube, the number-one way to add professionalism to your productions is with quality audio. People will forgive all sorts of video shenanigans in the name of "art," but if the audio stinks, the whole project is in trouble. This means choosing the right microphone for the job. But which one? There isn't a single answer to that question, but some simple guidelines should make the decision easier.

Old Faithful

A good video producer should build a microphone collection that offers flexibility in any situation. However, if you have the budget for only one mic, it should be a shotgun. With high sensitivity and a narrow pickup range, a solid shotgun microphone works in almost any situation. A shotgun mic can pick up sound from two or more people in an interview, double as a



handheld model, pick up sound effects and even record a voiceover. It's a great overall choice and one that is used every day in news, documentaries, television and feature films.

Shotgun microphones come in short and long varieties. Short sizes are usually less than one foot in length, and there are several excellent choices under \$300. Long shotguns can be very long; one very popular shotgun design measures over 18 inches! This isn't the type of thing you strap to most cameras; however, it's perfect for grabbing sound from a distance. There are two primary methods for mounting a

shotgun: on-camera or using a stand or boom pole. As you shop, you'll find several on-camera-only options. These are great for those shooters who need a small, ultra-portable setup with a minimum of headaches. The downside is a lack of flexibility; the mic is always on the camera. For more options, consider a standard model. Many offer camera mounts, and you gain the ability to go fully mobile – even wireless if necessary.

The Intimate Approach

While shotgun mics can be big and bulky, lapel microphones offer a stealthy alternative. These little guys virtually disappear on clothing or, if necessary, hide underneath. Rarely bigger than a pencil eraser, modern lapel microphones are a technological wonder. The biggest audio benefit is getting the mic near the talent's mouth. This maximizes signal quality while minimizing background noise. If you shoot news or interviews on a regular basis, you need a lapel microphone in your collection.

Back in the early days of television, announcers and other tal-

Mix Things Up a Bit

If you need more than one microphone on a shoot, adding a small mixer is a great option. Starting around \$100, there are dozens of mixers that offer this flexibility. A mixer lets you match volumes from different types of mics and a variety of on-screen talent. You can also mix in other audio sources, like MP3 players or sound systems. As a bonus, you gain easy headphone monitoring and level meters. Several mixers will even run on batteries for extreme remote shoots. It may take an adaptor or two to get the signal from the mixer to the camera, but this simple, inexpensive audio addition offers a lot of power and flexibility.

ent wore a microphone on a strap around the neck. These were called lavalier mics, and the name is often abbreviated to lav. Whether lav or lapel, there are many options today. Simple lapel mics cost less than \$50 and include a short cable terminated by an 1/8" plug. Professional models sport longer cables, rugged construction and XLR connectors, and they require phantom power (power from the camera, not a battery). Optional colors are another professional option. Many lapel mics are available in white, black or tan to better match the talent's skin or clothing. Wireless lapel mics are common today, since the transmitter packs are easy to hide, making a completely mobile subject. This increases the price, but it adds even more flexibility to the lapel microphone.



A shotgun microphone is versatile enough to be used in the field or in the studio. The most common mounting styles are on a boom (left) or on a standard microphone stand (right).

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Stick It

A third microphone option is the handheld mic, often called a stick mic. You'll see these mics most often in news-type interviews. They're also great for recording sound effects, Foley and voiceovers. Most handheld microphones look similar to one another. Modeled after the venerable Shure SM-58, the handheld mic has a steel mesh ball on the business end and a handle and connector on the bottom. Wireless handhelds include a thicker handle to house the transmitter electronics.

Choosing a handheld mic is more a matter of taste today – even the inexpensive mics sound pretty good. Sound quality, clarity and handling noise are the major differences, and you'll have to plug one in to find out. Cosmetic differences include color – ranging from gold plate to matte black – and texture. Several manufacturers offer softer, warmer grips on their microphones. These often minimize handling noise and make the mic easier for talent to hold in freezing temperatures. Almost all professional handheld mics terminate in an XLR connector, and very few require phantom power. Some offer an on/off switch, while pads and low-cut switches are available on other models. You can also convert a hardwired version to wireless with an add-on transmitter.

Outside the Box

Specialty microphones have their place too. While you won't use them in every situation, they can be a real shoot-saver. Imagine you're shooting a corporate board meeting with several people around a table. You don't have mics for everyone,



A typical modern wireless microphone transmitter pack is small enough to be easily concealed, generally somewhere on the wearer's waist.



and a shotgun won't cover all the participants. Why not try a boundary microphone? Available from all the major manufacturers, boundary mics (frequently referred to as PZM mics, even though that's a trademark of Crown) lie on a table or other flat surface and pick up everything equally in every direction. It won't have that in-your-face sound, but you'll capture all the voices at the table, minimize setup and eliminate a dozen wires running across the floor.

If budget allows, try to purchase new microphones based on the needs of your current project. The client helps fund your collection, and you get a new mic that fits the production. Don't forget, you can also rent microphones from production companies, music stores and other rental outlets. This is very common with wireless mics. The rental price buys you the chance to try different models, identifying features and options that suit your production style.

Spoiled for Choice

As you can see, there are lots of options when choosing a microphone. Multiply that by the dozens of models offered by each manufacturer, and the task might seem too daunting. Read the spec sheets and reviews, but trust your ears and your gut. The right microphone is waiting for you. ■

Contributing Editor Hal Robertson is a digital media producer and technology consultant.



FEEDBACK

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IN BOX

readers' letters

►► Continued from page 6

to be registered or lodged. Generally the only action which an individual like most of those reading your magazine need do is to mail a copy of the item to themselves by registered post and then store it unopened. That device is generally accepted by the Court as proof of the date of origination if the fact is ever challenged.

Philip Howells

You're right, Phillip, with the world getting more connected, many of our U.S. readers look outside the States for video and we have many readers worldwide. We will try to keep that in mind when we're stating legal facts that affect our country only. Thank you for pointing this out.

—The Editors

Muddy Happy Birthday Waters

I have a comment about the *Quick Focus* column story "Sing Happy Birthday...for a Fee" in the October 2008 issue. ABC News did a similar story in July 2008 regarding this issue: <http://abcnews.go.com/WN/story?id=5413561&page=1> The gentleman they mention has his article here: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1111624

It seems there are questions regarding the validity of the extensions and even the true author(s) of the lyrics. There are claims of failure to properly renew the copyright in the 1960s according to the news story. Various arrangements were renewed but not the standard (well-known) version.

Most prefer to pay the royalty fee instead of the legal costs to fight the court battle to challenge the copyright claim.

Regards,
Barbara B., Rural Minnesota ■



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use article #14067 in the subject line.

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WHAT'S LEGAL

producer's rights

by Mark Levy



When our country's Founding Fathers adopted the U.S. Constitution, they wanted to make sure that, unlike in England, no person could have a monopoly over property, whether real, personal or intellectual property. So Article I, Section 8 of the Constitution gave Congress the power to secure "for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

The "limited times" statement refers to a time period that has changed over the years, as Congress updated the Copyright Act. Between 1909 and 1978, the copyright term was 28 years, renewable once for an additional 28 years. But the 1976 Copyright Act, which went into effect on January 1, 1978, changed the term of copyright from a maximum of 56 years to the creator's entire life plus 50 years. More

recently, Congress acted again, allowing those with copyright rights (e.g., movie makers, songwriters, screenwriters, etc.) to prevent copying part or all of their creations for their entire life plus 70 years. That's a long time, of course, but still within what Congress defined as "limited times."

Looking backward, however, to works created before 1978, the pre-1976 Copyright Act applies. If someone made a movie, for example, in 1970 and applied for a 28-year copyright registration, it would have expired in 1998, unless the copyright holder decided to renew the registration for another 28 years. Then the expiration of the copyright rights wouldn't occur until 2065.

The Copyright Office provided a handy table, below, for calculating when the copyright rights of a particular work will expire, depending upon

The Public Domain

Understanding the confusion of when copyright claims dissolve.

when the work was initially registered and whether the registration had been renewed. This chart is an abridged timeline for works published within the U.S. Find the rest of the table at www.copyright.cornell.edu/public_domain.

You can access some of the Copyright Office database at www.copyright.gov/records. If you don't know when a work was registered, the Copyright Office can search its database for you for \$150 per hour.

Here's a rule of thumb that may come in handy: any work that was created before 1923 is now in the public domain, regardless of whether the registration was ever renewed. That's the magic year. All works created before 1923 can be used without permission by the creator of those works. That would include the music of Brahms, the poetry of Shelley, the plays of Shakespeare and the paintings of Rembrandt. Be careful, though, that you don't use a modern recording of a Brahms musical piece, since that particular recording is most likely still under copyright, even though the rights to the underlying musical work are in the public domain.

There are exceptions to the copyright law. For example, under the fair use clause of the Copyright Act, in certain situations you may copy protected works without permission (see 17 U.S.C. § 107). Also, works created by the federal government cannot be protected by copyright. You are allowed to copy part or all of government publications, photographs, videos, soundtracks, etc. That means that you can copy some or all of productions of the Department of Defense, NASA, Congress, the FBI and the like without obtaining permission. ■

Attorney Mark Levy specializes in intellectual property law. He has won many amateur moviemaking awards.



FEEDBACK

For comments on this article, email us at editor@videomaker.com, use **article #14049** in the subject line.

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