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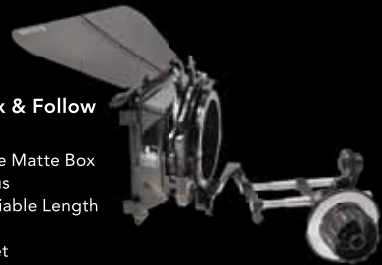
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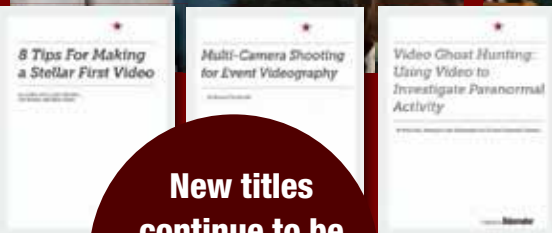
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by Teresa Echazabal

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With visions of script lines and greater production value dancing through your head, the video professional or aspiring indie-great in your life dreams daily of their next camera or video-gizmo acquisition. What better time of year than now to make a few of those dreams come true.
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by Matthew York

In-Camera Editing

During this time when affordable technology is tripped up by a suppressed economy, it's difficult for many video enthusiasts to acquire the equipment necessary to create a video masterpiece. What are video producers to do when they cannot afford to develop a full-blown editing environment, after they've spent a personal fortune on their video camera, DSLR, smartphone or tablet with built-in camera and have generated so much footage that needs serious editing?

Start planning your shots and hone your in-camera editing skills! We can't all afford the best in editing tools, but we can seriously improve our productions and make them worth sharing by framing, focusing and establishing our shots before we hit record.

In-camera editing isn't a lost art. It remains alive and well, and even video enthusiasts who are paid for their work use simple techniques that enhance their shots right out of the camera with no editing system in sight.

Many single-operator wedding videographers use in-camera editing, offering them a way to compete not only in price but in turnaround times, often delivering their product at the end of the event. This was more common during days of recording direct-to-tape but it still allows for delivery of quality productions with minimum or no editing in a matter of days.

With the many options for delivery on media from tape to DVD, USB flash drive to memory card, hard drives to downloadable files over the Internet; in-camera editing offers enterprising video enthusiasts the chance to provide all three levels of marketability: good, cheap and fast.

While many videographers have the option to edit in post, they develop a tendency to record more footage than needed to visually tell the story, cherry-picking the best shots in post to edit a slick production, but this isn't the only way to get the job done.



By learning to read the action, follow the flow of the event, deciding what to shoot and what to avoid, determining what should be in the frame and what should be cropped before the shoot begins, we can all hone skills that help create good production value that looks for all the world like professional edits. In-camera editing can also reduce the amount of time spent in post for those who do have access to other editing options. Cleaner and leaner shooting via in-camera editing reduces the amount of time spent on clean-up editing in post.

While weddings and audio continuity may present challenges to the single-camera producer, many events such as birthday parties and occasions without a planned or linear program are ideal for practicing some in-camera editing techniques. Such experiences will soon prove to us we don't have to record everything to tell the story.

In-camera editing is an often overlooked option when it comes to video production. Practice planning your shots at your next event and cut down on the time you have to spend in post. *Mr. York*

Matthew York is Videomaker's Publisher/Editor.

For comments, email: editor@videomaker.com, use article #15385 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15385

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\$599⁰⁰

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Designed to work with DSLRs, the SMX-20 offers directional high quality stereo sound. Includes windscreen, LR-44 battery & mount \$139⁰⁰

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Samsung HMX-QF20BN Switch Grip Camcorder



Finally, Lefties
Have Rights Too

by Mark Holder



Samsung's HMX-QF20BN camcorder is a very small, palm-sized camcorder, capable of producing big results. Despite its tiny form it comes packed with a number of interesting features, not the least of which is its ability to shoot upright video – while upside down – making it capable of both right and left-handed shooting.

Slight of Form

Noticeably devoid of external buttons, the QF20 has a sleek appearance. A switch on the right side of the lens housing manually opens the lens cover. If you turn the camera on, with

the cover in the closed position, a flashing warning on the display invites you to check the lens cover.

The lens is a Schneider Kreuznach with an aperture range of f1.8 - f3.9, excellent for gathering loads of light at any zoom setting. It records in 1080/60i HD using H.264 recording and MP4 video file formats. A label atop the lens housing heralds its 40x digital zoom capabilities, however, the much more desirable optical zoom for this camera, is 20x. Very nice indeed! The only other features located on top of the camera are the stereo microphone and another label noting that the optical image stabilization system is of the Duo + variety.

As there is no power button, switching the device on or off is accomplished by simply opening or closing the 2.7-inch flippable touch screen display. On its outer edge is the charging status LED. Several touch buttons and status indicators appear on screen with a single physical button to the side of the screen for accessing the various menu options. Behind the display, a sliding port cover on the main body hides the AV, HDMI and USB 2.0 ports.

At the rear is a control pad with the record button in the center of a four-

way rocker panel. Pressing the panel to the left or right controls the zoom functions while pressing up or down activates the My Clip function, used for tagging favorite scenes for extraction at a later time. Above the control pad is the DC-in port and cover.

The adjustable hand strap dominates an entire side of the camera, while the bottom houses the tripod receptacle and both the battery and memory card slots. The QF20 has no internal storage, which keeps the price down, but instead uses SD type media cards in a variety of capacities: 1-2GB SD; 4-32GB SDHC or as much as 64GB SDXC.

Navigating the various menus and settings options is fairly intuitive and straightforward, although the touch screen isn't always as responsive as one would like. The upper left corner of the screen indicates the current shooting mode. Below this are four touch-sensitive areas for switching between video and still recording, adjusting zoom and the playback functions. The physical "Home" button at the left of the display pulls up the various menu options. The available functions depend on whether video or photo mode is selected. In video mode, Smart Auto sets everything to

TECH SPECS

Sensor: 1/4" - 5.1MP CMOS
Zoom: 20x Optical; 40x Digital
F Value: 1.8 (W) ~ 3.9 (T)
Display: 2.7" wide touchscreen LCD; 230k pixels
Adjustable Brightness: Yes
Rotation Angle: 90+180 degrees
Stabilization: OIS Duo

Exposure/Focus: Auto/Manual
Shutter: Auto
White Balance: Auto, Daylight, Cloudy, Fluorescent, Tungsten, Custom
Effects: B/W, Sepia, Negative, Art, Ghost, Noir, Western, Dazzle
Low Light Sensitivity: Auto: 5lux (1/30 second); C.Nite: 3lux (1/15 second)
Recording Format: H.264 HP

Video File Format: MP4
Resolution: Full HD (1920x1080/60i); Vertical HD (1920x1080/30p); HD (1280x720/60p); SD D1 (720X480/60P)
Still Format/Resolution: JPEG/5.3MP
Audio Format: AAC
Memory: SD/SDHC/SDXC
I/O Ports: Composite, HDMI, IEEE 1394/Firewire, USB 2.0

automatic while Manual allows you to tweak the exposure value, backlight compensation, focus, white balance – using several presets or a custom setting, and Super C.Nite, which adjusts the shutter speed for low light shooting. In photo mode, you can manually adjust white balance, exposure and backlight compensation – plus, you have a self-timer and continuous shot mode to take as many as eight photos in one second.

Another menu option includes Art Film, which enables shooting with Black & White, Sepia, Negative, Art, Noir, Western and Dazzle presets. Several Art Time Lapse options are available, photo album access and Vertical HD recording. This allows you to hold the camera on its side with the LCD pointing straight up or down to record video in a portrait orientation.

A second page of menu options lets you access the Wi-Fi settings to wirelessly upload your images to sites such as Facebook, Picasa and YouTube, automatically backup images to your PC and view your work on a TV Link-enabled television. Finally, you have a Settings menu for fine tuning the shooting, playback, display, connectivity and general settings.

Big on Function

At a mere \$350, no camcorder can be expected to measure up to the standards of its pricier brethren, however, the QF20 does manage to perform surprisingly well nonetheless. At 5.1MP, still images don't have quite the punch and crispness as the many double digit megapixel offerings out there today, but that's to be expected. Video performance is quite respectable with accurate color reproduction,

good contrast and, while not spectacular, at least adequate low light performance, with acceptable noise levels for this price range.

And of course, there's the Switch Grip 2.0 technology, which allows you to switch hands without

missing the shot. We lefties can now feel right at home by rolling the camera over, bottom side up, with the LCD on the right side of the camera. The display image rights itself and on playback you can see that the image starts to roll to the vertical but quickly corrects and continues to record in normal fashion.

As controls are at the rear of the camcorder and on the LCD screen, they are just as accessible now with the right hand, as they are with the left. Right-handers can always practice external camera operations if the left hand is steady. When it comes to camera features as a whole, more control generally equals more professionalism, being able to use your left and right hand is simply great practicality. ▮

SUMMARY

If you're looking for a budget priced, ultra-compact consumer camcorder, with good performance and either-handed shooting capability, then look no further than the Samsung HMX-QF20 with Switch Grip 2.0 technology.

Contributing Editor Mark Holder is a video producer and trainer.

For comments, email: editor@videomaker.com, use article #15897 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15897

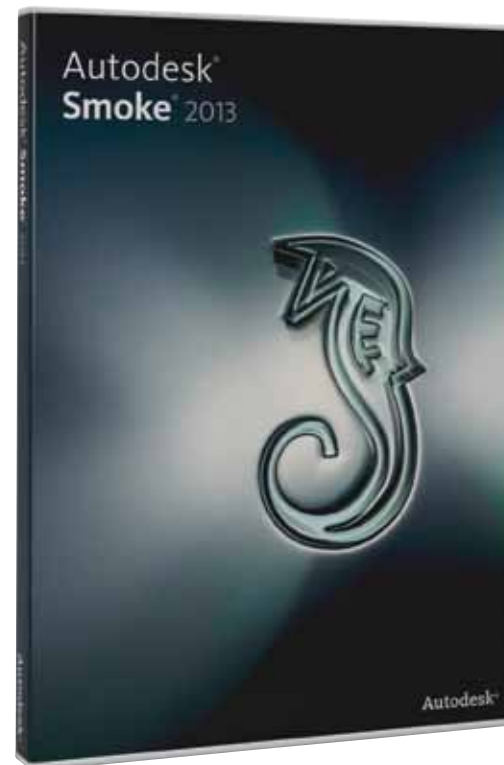


\$350

Autodesk Smoke 2013 Visual Effects Software

Price Cutter

by Russel Fairley



Introduced at NAB 2012, Autodesk's Smoke 2013 was a surprise darling of the show, dazzling us with not only a fresh new interface, but also a new price that is reduced by more than 75 percent compared to last year's version of the software.

To those who have yet to formally meet Smoke, it is an all-in-one tool for editing and finishing (effects and color correction, primarily), and it's always been a good one.

Since it has been so good, Smoke has generally been reserved for the biggest studios and artists, due to a professionals-only price tag of \$15,000 per license.

Well, all that's changed.

Price? Down. Features? Up.

Aimed at current Avid Media Composer, Final Cut Pro and Adobe Premiere

Autodesk

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STRENGTHS

- Familiar editing interface
- Powerful, deep toolset
- Much lower price

WEAKNESSES

- Learning curve is still there

\$3,495

Pro and After Effects users, Smoke 2013 makes a compelling case to be added to your set of programs by providing powerful tools, established keyboard shortcuts and a familiar editing interface, thanks to its new timeline editing interface.

Where this tool is interesting is that it has depth at many portions of the production pipeline that few other tools can match. For example, it's possible to edit footage à la Premiere, add a multi-layer scene with layers spread out in 3D space with 3D lights, keyed out elements and complex particles like After Effects, and then color correct the project as in DaVinci Resolve.

Have they hit the mark with this ambitious new version of the software? Let's put it through the paces and see.

The Product

Still in pre-release, Autodesk is working out a few small bugs in Smoke, but this isn't your normal beta phase. Anybody interested in trying the software can download the current pre-release (version four, as of this story's publication date) and use it without limitation until the full version is released.

We testers are also encouraged to submit suggestions and report bugs and crashes as we find them.

So it costs less, you can test drive

it for months, and you get to help Autodesk decide what the full release will be.

Throughout our testing with pre-release version two, the biggest issue we came across was one that Autodesk's Marc-André Ferguson warned would happen – projects created with the first pre-release version aren't compatible with the second. As of pre-release version three, however, this is no longer an issue, so feel free trying out Smoke 2013 on a current project.

Impressions

After spending some time in Montreal with Ferguson, I got to see Smoke do some things that I might not have stumbled upon during my own testing. After a dazzling demo, I was anxious to try Smoke 2013 for myself.

What I really appreciate about the program is that Smoke 2013 can stand alone as a good all-in-one tool, or can fit into nearly any portion of your production workflow. For example, I found myself using it for a lot of compositing, as its masking and keying tools are sensational.

Getting Started

The installation of Smoke 2013 was a straightforward download-double-click and follow instructions to install, but it should be noted that when



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Autodesk Smoke 2013

TECH SPECS

Version Reviewed: Pre-release Trial v.2**Platform:** Apple Mac**Operating System:** 10.6.6, 10.6.7, 10.7.2 or later, 10.8.x**Processor:** 64-bit Intel multicore processor**RAM:** 4GB, 8GB or more strongly recommended**Minimum Display:** 1440x900, 1920x1200 or higher recommended**Keyboard:** US keyboard required to map hotkeys**Demo Version:** Until full-version release

prompted to choose a location for a media folder, be sure to choose a drive other than your boot disk. This is similar to scratch discs in Final Cut Pro or Adobe Premiere Pro, and it's critical to the performance of the program that this be an appropriate second drive.

Once installed and configured, you'll create a new user and project. One thing to note when creating a new project is having a choice of format for intermediate renders. Where Smokes of old only worked with huge, uncompressed DPX files for rendering, it now offers up a variety of ProRes formats to choose from.

Next you'll click your way through to the new interface. The interface will be somewhat familiar to Final Cut Pro



or Adobe Premiere Pro users. It has some very standard elements. On the left is the Media Library, at the bottom is the timeline, and top center and right are the standard monitors. Each is unmoveable, but they can be resized to your liking.

What you do with Smoke 2013 from this point is up to you. Importing media to do your work within Smoke 2013 entirely, or finishing off a project cut in another application are both options.

I should mention that while testing earlier pre-releases, I had a bit of trouble importing an exported Adobe Premiere Pro XML file, though this seems to work much more smoothly in the third pre-release version. Again, this isn't a final version and I'm sure Autodesk will iron out many wrinkles well before show-time. The folks at Autodesk followed up with our report and said that "this has been updated for pre-release three and there are numerous tutorials and notes online to address this."

Working With Smoke

Using editing and creating effects with Smoke 2013 is an interesting combination of working with familiar tasks and wrapping my head around the powerful node-based effects system. As a longtime user of stacked effects, learning Smoke's extremely deep effects system – including the wildly powerful and deep Connect FX system for combining effects – was daunting and could quickly overwhelm one

who doesn't stay organized in his or her approach. It felt like I could go as far down a creative rabbit hole as I wanted with effects, but I had to remember where I was or I could get lost. Of course, enough depth to get in over my head is welcome.

I compare the Smoke 2013 learning curve to that of

Adobe After Effects – with a familiar interface and toolset it won't take editors and motion graphic designers long to get comfortable and relatively efficient with the software, but to truly master Smoke is going to be a long journey.

Luckily, even with such a deep level of potential complexity, the wealth of online resources to help get users up to speed is impressive. For a piece of software that does more than pretty much any other single application in this space, this is good news.

Conclusion

While still considerably more expensive and less intuitive than Final Cut Pro or Adobe Premiere Pro CS6, Smoke 2013 offers something unique – an all-in-one editing and finishing program. You'll be looking to add additional tools such as After Effects, a 3D app and some plug-ins for your various tasks, but Smoke 2013 includes all the tools you will require in one program. If you start to look at the cost of building out a comparable system with competing software and plug-ins, the price doesn't seem too outrageous.

As for the intuitive part, this is a big, strong piece of professional software, and it can do many things extremely well. A learning curve is to be expected.

Add all of this up, along with the ability to slide happily into an existing workflow or take it over entirely makes it a real contender in the post-production editing arena. With its lower price it finally gets to contend with a much larger marketplace. **||**

SUMMARY

Smoke 2013 is a very powerful tool and a great step forward. Plan to put some time into learning everything about this deep program.

Russel Fairley owns a turnkey video production company presenting 200+ videos a year, featuring web videos, television commercials, and live event coverage and is a Smoke editor.



For comments, email: editor@videomaker.com, use article #15512 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15512

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CyberLink Media Suite 10 Editing Suite



All-In-One Fun Factory

by Mark Holder

CyberLink brings user-friendly to a completely new level with Media Suite 10. The opening dashboard places virtually everything you'll need for your media projects right at your fingertips. Want to play a movie, edit a video or create a slideshow? Click the appropriate button on the menu and specific tasks appear. Select a task and exactly the right tool opens up, ready to go to work.

Plethora of Programs

Of course, Media Suite 10 is not a single program, but rather a collection of 11 digital media oriented applications and utilities. Keeping 11 different software programs straight may seem a daunting task, but CyberLink has

made it easy with their intelligently laid out opening screen, referred to as the PowerStarter navigation menu.

The menu is organized by tabs surrounding a particular project emphasis, such as Movie, Video, Photo, Music, Data & Backup and Utilities. Selecting the Movie tab reveals options for playing a movie disc, or folder, using PowerDVD 12, or viewing online movie information through the MoovieLive website. The Video tab lets you play video files, do advanced video editing with PowerDirector 10, organize your videos, perform simple video edits and upload to popular social networks with MediaShow 6. Movie discs are created and edited with PowerProducer 5.5.

The Photo tab directs you again to MediaShow for photo related tasks such as importing, organizing, editing and enhancing your favorite photos. This is also for creating and playing slideshows, creating slideshow discs, uploading, printing and with the ultra version - viewing your 2D photos in 3D mode. Power2Go 8 is the program of choice for creating photo discs. The Music tab lets you create and play playlists from your music library with PowerDVD, rip audio CDs, convert audio files and burn music discs with Power2Go. You can then both record, and edit audio, with WaveEditor 2.

With Data & Backup you can create data discs, copy discs and burn .iso

files with Power2Go, backup files and restore them with PowerBackup 2.6 and even duplicate movie discs with PowerDVD Copy 1.5. Available utilities include erasing discs, extracting files from a disc image, mounting a virtual drive with Power2Go, and transferring media to mobile devices with MediaEspresso 6. There is capability to burn DVD folders with PowerProducer and printing disc labels with LabelPrint 2.6.

As you can see, Media Suite 10 lets you accomplish a ton of tasks using a plethora of programs with the greatest of ease. To make it even easier, the PowerStarter navigation menu lets you favorite your most used programs and find them all with a single click.

One Suite Editor

Of course, ease of use is one thing, but power and performance is something else entirely. For the price, PowerDirector 10 is a surprisingly powerful editing program. Capture, edit, produce and create disc buttons at the upper left of the interface make video creation as simple as one, two, three and four. Below these are the project library, with the preview window to its right and the timeline down below. Capture and import files into your media library from a wide variety of sources. Select the desired media files and drag them down into the timeline for editing (as many as 100 audio and video tracks).

TECH SPECS

Operating System: Microsoft Windows 7, Vista, XP

Screen Resolution: 1024x768, 16-bit color or above

Memory: 512MB required (1GB or above recommended); 2GB DDR2 or above for editing HD

CPU: DVD Quality (MPEG-2): Pentium 4, 2.2GHz or AMD Athlon XP 2200+; High Quality MPEG-4 and streaming WMV, QuickTime: Pentium 4, 2.4GHz or AMD Athlon XP 2400+; AVCHD and MPEG-2

HD (for BD burning): Pentium Core 2 Duo E6400 or Athlon 64 X2 5000+

VGA: Higher than Intel 945 GM; 64MB-VRAM or above.

HDD Space: 5GB required; 10GB (20GB recommended) for DVD production; 60GB (100GB recommended) for Blu-ray disc production

DV: OHCI IEEE 1394 compliant device

Additional: see website for Blu-ray 3D and TrueTheater 3D playback hardware requirements

In addition to Split, editing options include Modify, which allows you to use masks, paths and chroma key effects. While the chroma key here isn't nearly as sophisticated as you'll find within the likes of Adobe After Effects or even Adobe Premiere Pro, it does perform reasonably well for the price. Trim and Multi-Trim let you set and adjust in and out points while fix/enhance gives you some control over lighting adjustments, stabilization, audio and video de-noising, video enhancement, color adjustment and white balance. A set of Power Tools can reverse, rotate, crop, time-remap and in the Ultra version, automatically convert 2D video to 3D video. Keyframing and audio editing options round out the editor, and while suitable for the consumer, will certainly fall short of professional expectations.

For even more control, icons at the left side of the library lead to different rooms for various tasks such as effects, picture-in-picture objects, particle generation, title creation, transitions, audio mixing, voice-over recording, assigning chapters and creating subtitles.

PowerDirector boasts having the world's fastest consumer video editing software and we certainly witnessed some impressive results. Fast effect renders were evident. Multiple stacked effects and transitions played through without stuttering and our encodes were noticeably faster than

comparable software.

Once your edit is complete, click the Produce tab to encode with any number of 2D, 3D, mobile device and online formats, then click Create Disc. This lets you create menus either from scratch or template. Finally, burn everything in either 2D or 3D!

There is much more to the suite, to be sure. Several of the programs have received numerous upgrades and enhancements over their previous versions. The package comes in two suite levels: Pro and Ultra, with the major difference between the two being Ultra's emphasis on all things 3D. Whether importing, exporting, playing or burning to DVD, AVCHD or Blu-ray disc, Ultra seems to have 3D covered.

Whether your interest lies in the 2D realm or otherwise, for the non-professional, CyberLink Media Suite 10 is well worth the asking price. **VB**

SUMMARY

Suitable for both the complete novice and the more experienced digital media enthusiast, CyberLink Media Suite 10 has everything you need to get the job done right.

Contributing Editor Mark Holder is a video producer and trainer.



For comments, email: editor@videomaker.com, use article #15516 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15516

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Litepanels Sola ENG Flight Kit Lights

Petite, Portable, Powerful

by Mark Holder



What could possibly be better than a Litepanels Sola ENG LED Fresnel light? Why, three of them of course! And that's exactly what Litepanels has packed into their new flight kit – along with a few other very nice necessities.

Flying High

Designed for the video professional on the go, the flight kit includes everything you need in a Pelican 1510 case, suitably sized for stowing away in the

overhead bin on your next commercial flight. Add wheels, a retractable handle and you have 30 pounds as a very useful traveling companion indeed.

Weighing less than a pound and measuring just four inches across, each Sola ENG light is well suited for travel. A two-leaf barn door is included with each light as well. Simply snap its wire frame into the groove around the front of the lens to install it. A set of three gels also comes with each light, consisting of one diffusion gel, one 1/4 correction color-temperature orange (CTO) gel and one full correction CTO gel.

Lights mount directly on the camera or on the included light stands. Each light comes with its own ball head shoe mount, which can be used for on-camera mounting. A locking lever releases the ball, then locks the light securely in place at the desired angle. Opposite the lever, a slot in the mount allows the light to point straight up, or down, for a great number of positioning options. Three six-foot Manfrotto Nano light stands are included in the kit. Each

is topped with a 3/8-inch thread and a 3/8-inch to 1/4-inch adapter with protective plastic cap. Three TV to Motion Picture (TVMP) adapters are also included. They slip over the top of the light stand and lock into place to provide an accessory shoe-like mounting surface for quick setup and take down of the lights.

Each light is powered by a detachable two-pin D-tap DC power cable plugged directly into your camera's 10-20VDC output terminal, or into any number of portable power sources

TECH SPECS

Sola ENG Fixtures

Size: 4"x4"x5" (102mmx102mmx127mm)

Weight: 10oz. (.28kg)

Fresnel lens: 3" (10.2cm)

Power: 30W equivalent to 100W HMI

Power requirements: 10-20VDC (traditional ENG batteries) via included 2-pin D-Tap power cable or included AC power adapter

Flight Kit Includes:

- (3) Sola ENG Fixtures
- (3) Sola ENG Gel Kits (Set of 3)
- (3) Ball Head Shoe Mounts
- (3) Ball Head Shoe Mount Conversion Kits
- (3) TVMP Adapters
- (3) Sola ENG Barndoors
- (3) Sola ENG AC/DC Desktop Power Supplies & 6' Cords
- (3) 2-pin D-Tap Cables
- (3) Manfrotto Nano Stands
- (1) Pelican 1510 Case with Custom Foam
- (1) Soft Box and Diffusion

dial, a large, rotary dial with rubberized grips. Rotate the dial to the right to turn the light on. You'll hear a click and the faint sound of the cooling fan starting up. A green LED will appear, indicating that the power is on. Slowly rotate the dial to the right and the light intensity will gradually increase from zero to 100 percent with no noticeable color shift.

Ahead of the dimmer dial is the focus dial. Rotate the focus dial to the right to narrow the beam to as little as 15 degrees and rotate it to the left to broaden the beam to as much as 50 degrees. According to Litepanels' photometrics data, the Sola ENG illuminates 161.2 foot-candles (1735 lux) at six feet and 40.3 foot-candles (434 lux) at 12 feet in a 10-degree spot.

EACH SOLA ENG IS DAY-LIGHT BALANCED, AS WELL AS BOTH DIMMABLE AND FOCUSABLE.

Broadening the beam to 50 degrees (flood) reduces output to 34.2 foot-candles (368 lux) at six feet and 8.6 foot-candles (92 lux) at 12 feet.

Outcomes

The compact nature of this kit might lull one into thinking that its output may be lacking, but nothing could be further from the truth. In different lighting situations, we consistently found that the output was more than sufficient. Three independently dimmable and focusable lights, each with output equivalent to that of a 100W HMI, equate to a great deal of lighting versatility. Add barn doors, a soft box, diffusion and correction gels, as well as swivel mount positioning and your creative options are near endless. Being daylight balanced, these lights are great for outdoor use as well, with

such as those by Anton Bauer. If neither option is available, you can use the included AC power adapters.

One final item of interest is the collapsible soft box and diffusion panel. When opened, the soft box slips over any one of the lights (with the barn doors off) and rests in the groove behind the lens. As these lights produce a negligible amount of heat, setting fire to the soft box is not an issue. The diffusion panel simply attaches at the front with the built-in hook-and-loop fastening strips.

Power Up

Each Sola ENG is daylight balanced, as well as both dimmable and focusable. At the rear of the body is the dimmer



enough power to provide some nice fill lighting, even in the sunshine.

For the traveler, the low-heat awesomeness of LED lighting will be greatly appreciated. After several hours of continuous use, the lights were cool to the touch, able to be packed up and carried away immediately, without the usual cooling off time necessary with conventional lights.

Controlling light with the Litepanels Sola ENG kit is exceptional, and accounts for virtually all that you'd look for on a shoot. The scale of the lights in this case is what makes the kit outstanding, with multiple mounting options, stands, barndoors and diffusers and you'll still have space for another carry-on. 📺

SUMMARY

From the single, on-camera lighting scenario to full on, three-point interview lighting, mobile video professionals will find everything they need in the Litepanels Sola ENG Flight Kit.

Contributing Editor Mark Holder is a video producer and trainer.

For comments, email: editor@videomaker.com, use article #15650 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15650



Litepanels, Inc.
www.litepanels.com

STRENGTHS

- Complete studio lighting in a compact case
- High output
- Low power consumption, low heat
- Dimmable
- Focusable

WEAKNESSES

- Fan noise may be picked up by a microphone in close proximity
- Lightweight stands – be very careful to weight properly

\$2,995

HTC One X Smartphone

One Small Step for HTC, One Giant Leap for Video

by Beata Dumaplin



In an orange desert wasteland, a lone adventurer stands, looking at the scenic view before him. He has explored this strange new world, seeking out new life and new civilization, boldly going where no man has gone before. He takes a deep breath, his mission a success, and pulls out his portable pocket communicator. “Beam me up, Scotty!” he orders clearly into the mic, and with a dazzle of glittery gold, he disappears.

That scene could be found on one of the 1966 *Star Trek* segments. Now,

nearly half a century later, we find ourselves almost living in a dream. Although we cannot teleport ourselves (yet!), we can call our rides from our palm-sized mobile phones. The video and sound equipment employed at the time of shooting the *Star Trek* series was gargantuan compared to the tiny cameras that we find on our portable devices today. Since the birth of the mobile phone, companies all over the world have started a little “space race” of their own. Who can build the fastest, the most compatible, the most versatile mobile phone?

Navigation

With all the competition, advances in mobile phone technology continues to be an ever-moving field. One of these mobile phones is the HTC One X, from AT&T. The HTC One X has a sleek, white design. It is very slim and has a matte finish that feels good in your hand. Although it is a little bigger than the average iPhone or Android phone, it makes up for it in screen size. The HTC One X has a large touch screen, which makes it easier to navigate and ideal for video shooting and viewing.

The first thing that really hits you about the HTC One X is the screen size. As soon as you select the cam-

era option, you can immediately see the quality. The HTC One X has the ability to shoot in several different quality modes, but most impressively, it can shoot video in High Definition. The extra screen space allows you to see what you are capturing in better detail. Although the video and camera options are visible on the sides of the screen while you are shooting, they are small and quasi-opaque, so it's easy to ignore them.

Options

One of the exciting video features on the HTC One is the menu of filter options. There is a pull down menu that allows you to play with a variety of filters. The more outlandish filters, such as Distortion, Vignette, Depth of field, Vintage, Dots, etc., were easy to use and well designed; though we were disappointed to find that some filters were segregated between the still camera and the video camera. Though you can use the more extravagant filters on still shots, the filters available for video were much more basic. Grayscale, Sepia, and Polarized, are some of the limited filters you are allowed to record in.

That is only the filters option, however. The HTC One X has two other

TECH SPECS

Cameras: 8MP rear-facing camera with LED flash; 1.3MP front-facing camera

Audio Playback: AAC, AMR, OGG, M4A, MID, MP3, WAV, WMA

Audio Recording: AMR

OS: Android 4.0 with HTC Sense 4

Video Playback: 3GP, 3G2, MP4, WMV, AVI (MP4 ASP and MP3)

Video Recording: MP4

Keyboard: QWERTY

Touch Screen Display: 4.7" (1280x720) super LCD display with Corning Gorilla Glass protection

Processor: 1.5 GHz dual-core

RAM: 1GB

Battery: 1800 mAh

Talk Time: up to 8.5hrs

Standby Time: up to 12.5 days

Frequencies: HSPA/WCDMA: 850/900/1900/2100 MHz GSM/GPRS/EDGE: 850/900/1800/1900 MHz

Charging Port: Micro USB

Internal Memory: 16GB

Dimensions: 5.3"x2.8"x.4"

Weight: 4.5oz.

pull down menus with other options for shooting. In the Tools menu you will find plenty of ways to tweak your video, and for a smartphone, it's a pretty serious little menu. Along with the standard self-timer, the HTC One X gives you nothing but choices in this toolbox. You have the ability to choose the quality of your camera and video, and can manually manage the ISO, white balance, contrast, exposure, saturation and sharpness. You can set the camera to continuous shooting or limit it to 20 frames per second. You even have the option to record with or without audio, or record with stereo or mono sound.

Fun Facts

Aside from that, you have a “Camera Scenes” option, which has many still picture options, such as panorama, white board and low light. Another little surprise that HTC One X had up its invisible sleeve is the “slow motion” option for video shooting. It takes real-time video and plays it in slow-motion on playback. It is an interesting effect, but the video is not shot in HD, so you lose some of the detail and quality.

The HTC One X boasts its ability to capture a still shot while shooting video, without interrupting the video capturing. It works well and is fairly seamless, but the most surprising aspect of this feature is that you can capture a still shot during play back, so if you missed the perfect picture of your child's face while blowing out his or her birthday candles, but took the video, you can now find the perfect shot in your playback menu.

This phone is ideal for social network users or video bloggers that like to take video and upload it straight to the Internet. The HTC One X comes pre-programmed with the ability to sign you in and upload your video to many of the popular social networking sites, such as Facebook, Twitter and YouTube.

The Downside

There aren't many cons to this smartphone's camera capabilities, but they are worth mentioning. First, and most frustrating, is that the focus pops in and out a lot. It's pretty consistent when the subject you are shooting is less than three feet away from you. Also, though the HTC One

X has convenient shooting and sharing technology, it only has a basic “trimmer” that can cut a video from the beginning and from the end, but not slice or edit in any other way. Though there are a few, rare download available apps for editing, none come pre-installed.

Shooting for the Stars

The HTC One X is a smartphone with plenty of video options, pushing it's way into technological history with its unique steps forward for portable video. Only fifty years ago, Gene Roddenberry's well-known television series *Star Trek* showed remarkable technology that the general public thought that they would never see. *Star Trek's* fantastical technology was appealing to the imaginations of people everywhere. In a world where the computer mouse had barely made its debut, the idea of communications devices that you could carry, wirelessly, in your pocket, was unbelievable. The concept of portable computers? Impossible.

Now we find ourselves pushing the envelope in portable video technology and applying cameras to almost everything from computers to phones. The portable video technology race has hit the ground running and we can only hope to gain from the competition, as companies try to outdo each other. It moves progress and it will continue to move us to the future and beyond. ■■

SUMMARY

The HTC One X is a great phone, with an easy to use camera for video and still shots; overall an enjoyable video capturing device.

Beata Dumaplin is a freelance writer and independent photographer.

For comments, email: editor@videomaker.com, use article #15915 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15915

LG Lucid VS840 Smartphone with Video Producer Editing Software

Creativity on the Go

by Mark Holder



With a svelte, attractive exterior, bright and crisp touch screen display, dual CPU power and 4G speed, the LG Lucid VS840 is an extremely capable mobile phone. The still image and video recording quality is impressive, with accurate color reproduction and good audio pickup. With the Lucid VS840, you can record and edit 1080p HD videos right on the phone. The latter ability is the focus of this review.

Be the Producer

Tucked away inside the Apps folder is a pre-loaded bit of software called

Video Producer. A simple enough editor to be sure, Video Producer is useful enough to satiate many users' thirst for mobile creativity. The interface consists of a preview window for playing back your edits, above which is a horizontal scrolling list of your selected assets. Re-order assets by pressing on the one you wish to move, and hold, until it separates from the rest, then drag and drop it to the new location. A plus (+) button in the upper left corner lets you add media by selecting from

both still images and videos. Directly beneath, a delete (x) button, removes either selected, or all, media. At the bottom left is a Style selector controlled by up and down arrows. Select from Showreel, Showcase, Sentimental, Scrapbook, Pump It Up and Dice to apply a themed look and transitions to your videos. In the upper right corner is the save button which allows you to select from and save to HD (1280x720), TV (720x480) and QVGA (320x240) resolutions. Below this are the edit

button and add music button, which let you choose among music files saved to your device and add them to your project.

Be the Editor

Pressing the edit button takes you to another screen with additional editing tools. The asset type determines the availability of certain tools. Select an asset in the scrolling asset preview at the top of the display and press the Overlay Text button (T) to add titles or names. The virtual keyboard appears for text entry; accept the text by pressing the checkmark button. Below this, press the Overlay Image button and a menu of images appears. Choose from multicolored splashes of paint, gold filigree, gold ribbon, heart with angel wings,

flower or butterfly to embellish your creation.

Drag the image to the desired location and use the resizing handle – an arrow icon, to get it just the right

size. Combined with the text tool it makes some nice lower thirds – on a mobile phone, no less. If at any time you don't like a particular effect, hit the delete button and start over. With a video clip selected, press the Trim Video button. The clip plays above a timeline with left and right trim handles and a play/pause

button. Slide the handles to the desired locations to set the in and out points. The power of the processor is quite evident here as it scrolls through and processes full HD video effortlessly.

VIDEO PRODUCER IS USEFUL TO SATIATE USERS' THIRST FOR MOBILE CREATIVITY.

SUMMARY

With all the goodness of a quality, affordable mobile phone, the snappy quickness of dual CPU processing and an easy-to-use, effective video editor, the LG Lucid is definitely worth a close look.

Contributing Editor Mark Holder is a video producer and trainer.

For comments, email: editor@videomaker.com, use article #15914 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15914

LG Electronics U.S.A., Inc.
www.lg.com

STRENGTHS

- In-phone editing
- Quality HD recording
- Rear-facing camera option
- 4G compatible

WEAKNESSES

- Requires upgrade for the latest version of the OS

\$450 - \$100 with Two-Year Verizon Contract

TECH SPECS

Cameras: 5MP rear-facing autofocus camera and camcorder with LED flash; VGA front-facing camera

Music Player: MP3, AAC, AAC+, WMA and WAV formats

OS: Android 2.3

Keyboard: Virtual QWERTY with Swype

Touch Screen Display: 4" WVGA (800x480) NOVA IPS-LCD display with Corning Gorilla Glass protection

Processor: Snapdragon processor with 1.2Ghz dual CPUs

Battery: 1,700mAh

Talk Time: up to 8hrs.

Standby Time: up to 350hrs.

Frequencies: 1.9GHz CDMA PCS, 800MHz CDMA, 700MHz LTE

Charging Port: Micro USB

Internal Memory: 8GB

External Memory Support: expandable up to 32GB

Dimensions: 4.7"x2.5"x.5"

Weight: 5oz.

GLIDECAM

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FEATURES

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BUYING THE BEST CAMCORDER

BY JULIE BARCOCK



With so many camcorder options available, it can be difficult to pinpoint which one rules supreme. Truth be told, **the best camcorder out there is the one that's best for you.**

For some, the act of shopping is a thrilling experience. For others, the mere thought of the activity is enough to cause an outpouring of groans and a gnashing of teeth. Regardless of which category you fit in, shopping is inevitable. As a beginner, or even a seasoned videographer, shopping becomes a necessary function since it provides an opportunity to acquire the gear you need to make a video.

Perhaps one of the most nerve-racking aspects of buying a new camcorder is spending a load of money without knowing if you will be ultimately satisfied; a fear of being disappointed or let

down by your new pricey purchase. In order to help negate any ill feeling towards buying a new camcorder, preparation and research is key. *Videomaker's* 27th annual *All Camcorders Buyer's Guide* can assist you in making an informed decision, which will help make your camcorder shopping experience exciting ... as it should be.

Preparation: Knowing Your Budget

If you've attempted to do any online shopping for a video camera you might already know that a simple Google search for "camcorders" will turn up countless retailers, brands, models and price points. The abundant search results can leave some feeling overwhelmed. One way to narrow the results is to figure out your budget ahead of time.

When budgeting for a new camcorder there are several things you may want to take into consideration – for example, the cost of extra batteries, additional memory (i.e. SD or CF cards), and a camcorder bag to keep your new camera protected. Also consider whether your budget is only for a new camcorder, or if other gear you purchase will need to be covered by the same budget (a tripod, mics, etc.) – this factor alone will make the available funds for a camcorder shrink significantly.

If budget is your number one determining factor, the process of elimination should start here. Take a look at the accompanying buyer's guide grid and cross out the camcorders that exceed your budget. This will reduce the time it takes to research camcorders that will satisfy your needs while fitting within your budget. Additionally, including a price in a Google search (e.g. camcorders under \$500) can help narrow the search results.

Knowing Your Needs

Asking someone which camcorder you should buy can be helpful, but it can also be mislead-



ing. Not everyone uses a camcorder in the same way or for the same type of work. For example, someone who makes commercial, corporate or wedding videos may suggest a higher-end camera due to the fact that these cameras come equipped with a plethora of external manual controls, which can lend to increased flexibility in a wide range of shooting environments. ▶▶

Manufacturer	Model	Price	Recording Media	Data Format	HD Resolution		Number of Sensors	Sensor Type	Sensor Size (inches)	LCD Monitor (inches)	LCD Aspect Ratio	Optical Zoom Power	F-Stop	Image Stabilization	Gain Control/Iris/ALC	Zebra Stripes	Internal ND Filter	Standard Mic Input	Headphone Jack	Audio Level Controls	Speaker	USB I/O	HDMI Out	FireWire I/O	SDI Out	HD-SDI Out	Accessory Shoe(s)	Wireless Remote	Form Factor
Canon Consumer www.usa.canon.com	VIXIA HF G10	\$1,300	SD/SDHC/SDXC/Internal	MPEG-4 AVC/H.264	1920x1080		1	CMOS	1/3	3.5	16:9	10x	1.8	o	y	y	n	y	y	y	y	y	n	n	n	n	y	y	st
	VIXIA HF S30	\$1,000	SD/SDHC/SDXC/Internal	MPEG-4 AVC/H.264	1920x1080		1	CMOS	1/3	3.5	16:9	10x	1.8	o	y	y	n	y	y	y	y	y	n	n	n	n	y	y	st
	VIXIA HF M52	\$700	SD/SDHC/SDXC/Internal	AVCHD MP4	1920x1080		1	CMOS	1/3	3	16:9	10x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	y	n	st
	VIXIA HF M50	\$600	SD/SDHC/SDXC/Internal	AVCHD MP4	1920x1080		1	CMOS	1/3	3	16:9	10x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	y	n	st
	VIXIA HF M500	\$500	SD/SDHC/SDXC	AVCHD MP4	1920x1080		1	CMOS	1/3	3	16:9	10x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	y	n	st
	VIXIA HR R32	\$500	SD/SDHC/SDXC/Internal	AVCHD MP4	1920x1080		1	CMOS	1/4	3	16:9	32x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	n	n	st
	VIXIA HF R30	\$400	SD/SDHC/SDXC/Internal	AVCHD MP4	1920x1080		1	CMOS	1/4	3	16:9	32x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	n	n	st
	VIXIA HF R300	\$300	SD/SDHC/SDXC	AVCHD MP4	1920x1080		1	CMOS	1/4	3	16:9	32x	1.8	o	y	n	n	y	y	y	y	y	n	n	n	n	n	n	st
Canon Professional www.usa.canon.com	XF305	\$8,000	Dual CF	MPEG 2 Long GOP/PCM	1920x1080		3	CMOS	1/3	4	16:9	18x	1.6	o	y	y	y	y	y	y	n	y	y	n	y	y	y	y	st
	C100	\$8,000	Dual SD/SDHC/SDXC/Internal	MPEG-4 AVC/H.264	1920x1080		1	CMOS	Super 35mm	3.5	16:9	N/A	N/A	np	y	y	y	y	y	y	n	y	y	n	n	n	y	n	st
	XH G1S	\$7,000	SD/SDHC/MMC/HDV/DV	MPEG 1/PCM	1440x1080		3	CMOS	1/3	2.8	16:9	20X	1.6	o	y	n	n	y	y	y	n	n	y	n	y	y	y	y	st
	XF300	\$6,800	Dual CF	MPEG 2 Long GOP/PCM	1920x1080		3	CMOS	1/3	4	16:9	18x	1.6	o	y	y	y	y	y	y	n	y	y	n	n	n	n	y	st
	XF105	\$4,300	Dual CF	MPEG 2 Long GOP/PCM	1920x1080		1	CMOS	1/3	3.5	16:9	10x	1.8	o	y	y	y	y	y	y	n	y	y	n	n	y	n	y	st
	XH A1S	\$4,000	SD/SDHC/MMC/HDV/DV	MPEG 1/PCM	1440x1080		3	CCD	1/3	2.8	16:9	20X	1.6	o	y	n	n	y	y	y	n	n	n	n	n	n	n	y	st
	XF100	\$3,300	Dual CF	MPEG 2 Long GOP/PCM	1920x1080		1	CMOS	1/3	3.5	16:9	10x	1.8	o	y	y	y	y	y	y	n	y	y	n	n	n	n	y	st
	XA10	\$2,000	Dual SD/SDHC/SDXC/Internal	MPEG-4 AVC/H.264	1920x1080		1	CMOS	1/3	3.5	16:9	10x	1.8	o	y	y	n	y	y	y	n	y	y	n	n	n	y	y	st
Cobra Digital www.cobradigital.com	HDCV2100	np	SD	AVI	np		np	np	np	2.4	16:9	0	np	np	n	n	n	n	y	n	n	y	n	n	n	n	n	n	st
	HDVC5590	np	SD	np	np		np	np	np	3	16:9	0	np	np	n	n	n	n	n	n	n	n	n	n	n	n	n	n	st
	HDVC6000	np	SD	AVI	np		np	np	np	3	16:9	0	np	np	n	n	n	n	n	n	n	n	n	n	n	n	n	n	st
DXG USA www.dxgusa.com	DXG-5K1V	\$330	SD/Internal	H.264/AVI	1920x1080		1	CMOS	1/4	3	16:9	20X	np	o	n	n	y	y	n	n	n	y	y	n	n	n	n	n	st
	DXG-5F9V	\$300	SD/Internal	H.264/AVI	1920x1080		2	CMOS	1/3	3.2	16:9	0	np	np	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	DXG-A80V	\$300	SD/Internal	H.264/MOV	1920x1080		1	CMOS	1/2	3	16:9	0	np	np	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	DXG-5F0VK	\$180	SD/Internal	H.264/AVI	1920x1080		1	CMOS	1/3	3	16:9	5X	np	np	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	Chelsea HD Camcorder, Red Houndstooth	\$150	SD/SDHC/Internal	H.264/AVI	1920x1080		1	CMOS	1/2	3	16:9	0	np	np	n	n	n	n	n	n	n	y	y	n	n	n	n	n	n

Indeed, these are great camcorders, but they're not for everyone.

For many beginner videographers and hobbyists, consumer cameras are completely acceptable to use. They are generally compact, easy to use and have settings that will allow you to shoot in several types of environments.

KNOWING WHAT YOU'RE LOOKING FOR IN VIDEO EQUIPMENT IS HALF THE BATTLE.

If you're brand new to making videos, consumer cameras are a great way to learn what you like and what you need in a camcorder without having to invest a lot of money right away.

An important step in finding a camcorder

that will suit your needs is to ask yourself, "What is the main purpose of this purchase?" Determining what type of videos you plan to make will help you decide what type of camcorder you will need. If you're looking for a recommendation from someone, ask people who are making the same type of videos you would like to make, whether it's professional or just a fun video to commemorate your favorite pastime.

Research: Knowing Your Camcorders

Knowing what you're looking for in video equipment is half the battle. Decide what features you absolutely need and which features you'd like, but aren't completely necessary. Make a list. As you look at the accompanying buyer's guide grid you can easily see which cameras have the features you desire. If you come across a camera function you aren't familiar with, research it. Take this opportunity to educate yourself on the gear

TERMS DEFINED

FORMAT

Recording Media: The physical media type(s) that video can be recorded to.

Data Format: The data type that the camcorder uses to encode the recorded video.

Maximum Resolution: The greatest resolution the camera is capable of recording.

IMAGE SENSOR

Sensor Type: CMOS = Complimentary Metal Oxide Semiconductor; CCD = Charged Coupled Device.

Sensor Size (inches): The size of the camcorder's image sensor(s).

LENS

F-Stop: The f-stop number for the lens. A smaller number in this field represents a lens that can let in more light. If there's no number, it's got interchangeable lenses.

Optical Zoom Power: The non-digital magnification of the camcorder's lens.

Image Stabilization: e = electronic; o = optical

Internal ND Filter: Whether the camcorder includes a built-in neutral density filter.

VIDEO FEATURES

Gain Control/Iris: Whether the camcorder provides explicit control of the gain or iris.

Zebra Stripes: Whether the camcorder can indicate "zebra stripes" on overexposure.

LCD Monitor (diagonal inches): The size of the camcorder's LCD monitor.

LCD Aspect Ratio: 16:9 = wide screen; 4:3 = standard definition

AUDIO FEATURES

Standard Mic Input: Whether an external microphone can be plugged into the camcorder.

Headphone Jack: Whether a pair of headphones can be plugged into the camcorder.

Audio Level Controls: Whether the audio level of the attached audio source can be adjusted.

VIDEO I/O

HDMI Out: Whether the camcorder includes an HDMI port that is capable of transferring video.

FireWire I/O: Whether the camcorder includes a FireWire (aka IEEE 1394 or i.LINK) connection for transferring video.

SDI Out and HD-SDI Out: Whether the camcorder includes other digital video connections.

MISCELLANEOUS

Accessory Shoe: Whether the camcorder includes a shoe for attaching accessories.

Wireless Remote: Whether the camcorder includes a wireless remote control.

Form Factor: st = standard (hold like a telescope); sh = rests on shoulder

*np = information was not provided by manufacturer (also, y = yes, n = no)

Manufacturer	Model	Price	Recording Media	Data Format	HD Resolution		Number of Sensors	Sensor Type	Sensor Size (inches)	LCD Monitor (inches)	LCD Aspect Ratio	Optical Zoom Power	F-Stop	Image Stabilization	Gain Control/Iris/ALC	Zebra Stripes	Internal ND Filter	Standard Mic Input	Headphone Jack	Audio Level Controls	Speaker	USB I/O	HDMI Out	FireWire I/O	SDI Out	HD-SDI Out	Accessory Shoe(s)	Wireless Remote	Form Factor	
JVC www.jvc.com	GS-TD1B	\$1,500	SD/SDHC/SDXC	AVCHD (2D and 3D)/MP4 MVC (3D only)	1920x1080		2	np	1/4	3.5	16:9	10x (2D), 5x (3D)	1.2	E	n	n	n	n	n	n	n	n	y	n	n	n	n	y	st	
	GZ-HM860B	\$950	SDXC/Internal	AVCHD	1920x1080		1	CMOS	1/2	3.5	16:9	10x	1.2	E	n	n	n	n	n	n	n	n	y	n	n	n	n	y	st	
	GZ-GX1	\$900	SDXC/SDHC/SD	AVCHD	1920x1080		1	CMOS	1/2	3.5	16:9	10x	1.2	o	n	n	n	y	y	n	n	n	y	n	n	n	y	y	st	
	GZ-HM960B	\$850	SDXC/Internal	AVCHD	1920x1080		1	CMOS	1/2	3.5	16:9	10x	1.2	E	n	n	n	n	n	n	n	n	y	n	n	n	n	y	st	
	GZ-HM550BUS	\$800	SD/SDHC/Internal	np	1920x1080		1	CMOS	1/2	np	np	10x	np	E	n	n	n	n	n	n	n	n	y	y	n	n	n	y	st	
	GZ-HM690B	\$650	SDXC/Internal	AVCHD/AVCHD SD	1920x1080		1	CMOS	1/4	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HD520B	\$550	microSDHC/Internal HDD	AVCHD	1920x1080		1	CMOS	1/5	2.7	np	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-V500	\$450	SDXC/SDHC/SD	np	1920x1080		1	CMOS	1/4	3	16:9	10x	1.2	o	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-VX700	\$500	SDXC/SDHC/SD	np	1920x1080		1	CMOS	1/4	3	16:9	10x	1.2	o	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HM670B	\$450	SDXC/Internal	AVCHD/AVCHD SD	1920x1080		1	CMOS	1/4	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HM320BUS	\$450	SD/SDHC/Internal	np	1920x1080		1	CMOS	1/5	np	np	20X	np	E	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st	
	GZ-HM450US	\$300	SDXC/Internal	AVCHD/AVCHD SD	1920x1080		1	CMOS	1/5	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HM440US	\$270	SDXC	AVCHD/AVCHD SD	1920x1080		1	CMOS	1/5	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HM650B	\$350	SDXC/Internal	AVCHD/AVCHD SD	1920x1080		1	CMOS	1/4	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-E10	\$230	SDXC/SDHC/SD	np	1920x1080		1	CMOS	1/5	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-E200	\$280	SDXC/SDHC/SD	np	1920x1080		1	CMOS	1/5	3	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-EX210	\$330	SDXC/SDHC/SD	np	1920x1080		1	CMOS	1/5	3	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-EX250	\$400	SDXC/SDHC/SD/Internal	np	1920x1080		1	CMOS	1/5	3	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
	GZ-HM50US	\$230	SDXC/Internal	AVCHD Lite/AVCHD SD	1280x720		1	CMOS	1/5	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st	
GZ-HM30US	\$200	SDXC	AVCHD Lite/AVCHD SD	1280x720		1	CMOS	1/5	2.7	16:9	40x	1.8	E	n	n	n	n	n	n	n	n	y	n	n	n	n	n	st		
JVC Professional http://pro.jvc.com	GY-HM790U	\$10,000	SDHC/SxS	MOV/MP4/AVI	1920x1080		3	CCD	1/3	4.3	16:9	14x	1.6	n	y	y	y	y	y	y	y	y	y	y	y	y	y	n	sh	
	GY-HM750U	\$7,700	SDHC/SxS	MOV/MP4/AVI	1920x1080		3	CCD	1/3	4.3	16:9	14x	1.6	n	y	y	y	y	y	y	y	y	y	y	y	y	y	y	n	sh
	GY-HM710U	\$5,600	SDHC	MOV/MP4/AVI	1920x1080		3	CCD	1/3	4.3	16:9	14x	1.6	n	y	y	y	y	y	y	y	y	y	y	y	y	y	y	n	sh
	GY-HM650U	\$6,000	SDHC/SDXC	MPEG 2/AVCHD/H.264	1920x1080		3	CMOS	1/3	3.5	16:9	23x	1.6	o	y	y	y	y	y	y	n	y	y	n	y	y	y	n	st	
	GY-HMQ10U	\$5,550	SDHC/SDXC	MPEG4 AVC/H.264/AVCHD	1920x1080+ (up to 3840x2160)		1	CMOS	1/2	3.5	16:9	10x	2.8	o	y	y	n	y	y	y	y	y	y	n	n	n	y	n	st	
	GY-HM600U	\$4,695	SDHC/SDXC	MPEG2 Long GOP/AVCHD/H.264	1920x1080		3	CMOS	1/3	3.5	16:9	23x	1.6	o	y	y	y	y	y	y	n	y	y	n	y	y	y	n	st	
	GY-HM150U	\$2,995	SDHC/SDXC	MPEG2 Long GOP/MP4/AVI	1920x1080		3	CCD	1/4	2.7	16:9	10x	1.8	o	y	y	y	y	y	y	y	y	y	n	n	n	y	y	st	

you will be buying and using.

Reading camcorder reviews can also be helpful since they provide valuable insight to the functionality and real world usability of the video camera you are looking to purchase. **Video-maker** has some great reviews on camcorders of all types – from consumer to professional.

What features will your budget allow?

Once you have prepared a budget and list of needs, shopping for a camcorder should be a much smoother and time-efficient activity. At this point, you should already know what you're looking for. Now you just need to find it. Let's take a look at some of the camcorders that are available.

The Low Budget Range (Less than \$500)

If you have said things like, "I want to find out if I like making videos before I spend a lot of money" or "I don't have a lot of money to spend, but I have a desire to make videos for a hobby" then this is probably the price range you will want to look at initially.

Samsung HMX-H300BN – \$350

If you're looking for a camcorder to chronicle your travels with, or to record your children scoring at their big game, the Samsung H300 may be a good option. Weighing in at only a half pound, this petite camcorder is considerably lightweight and small enough to take anywhere. Additionally, its 30x optical zoom will allow you to get close to

WHEN ACTION MEETS THE CAM

While many camcorders provide plenty of features, sometimes you need one that can go with you anywhere – from the surf to the snow, without concerning yourself with its possible damage and destruction. POV (point of view) cameras let you capture the action as you create the action, by strapping it to your bike, kite, or body. The **GoPro** HDHERO2 – \$300 provides a more stylized, POV video. It is easily mountable to many surfaces, the optional waterproof casing protects it from the environment, and it stores your adventures on an SDHC memory card (up to 32GB). It has a 1/2.3-inch

CMOS sensor and can record HD video at multiple frame rates. The fixed focus lens allows you to capture a wide 170-degree FOV (field of view), a medium 127-degree FOV, and a narrow 90-degree FOV.

There are tons of wearable and POV cameras, more than we can include here, but another company we've explored has a great little professional unit. The Contour+2 by **Contour Inc.** has a water resistant cylinder-shaped body, shoots HD video on a 2GB microSD card, connects wirelessly to a smart device for monitoring and has a wide angle lens shooting a 170-degree field of view and loads GPS tracking for \$400.

Manufacturer	Model	Price	Recording Media	Data Format	HD Resolution		Number of Sensors	Sensor Type	Sensor Size (inches)	LCD Monitor (inches)	LCD Aspect Ratio	Optical Zoom	F-Stop	Image Stabilization	Gain Control/Iris/ALC	Zeura Stripes	Internal ND Filter	Standard Mic Input	Headphone Jack	Audio Level Controls	Speaker	USB I/O	HDMI Out	FireWire I/O	SDI Out	HD-SDI Out	Accessory Shoe(s)	Wireless Remote	Form Factor	
Panasonic Corporation www.panasonic.com	HS900K	\$1,400	SD/SDHC/SDXC/HDD	MPEG4 AVC/H.264	1920x1080		3	CMOS	1/4	3.5	16:9	12x	1.5	o	y	n	n	n	n	n	n	y	y	n	n	n	y	y	st	
	HC-X900M	\$1,200	SD/SDHC/SDXC/Internal	MPEG4/H.264	1920x1080		3	CMOS	1/4	3.5	16:9	12x	1.5	o	y	n	n	y	y	n	n	y	y	n	n	n	y	y	st	
	HC-X900	\$1,100	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		3	CMOS	1/4	np	16:9	np	1.5	o	y	n	n	y	y	n	n	y	y	n	n	n	y	y	st	
	HC-V700M	\$600	SD/SDHC/SDXC/Internal	MPEG4 AVC/MPEG 4 MVC (3D) H.264	1920x1080		1	CMOS	1/2	3	16:9	21x	2.4	o	y	n	n	y	n	n	n	n	y	y	n	n	n	y	n	st
	HC-V700	\$550	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/2	3	16:9	21x	2.4	o	y	n	n	y	n	n	n	n	y	y	n	n	n	y	n	st
	HC-V500M	\$500	SD/SDHC/SDXC/Internal	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/5	3	16:9	38x	1.8	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	HC-V500	\$450	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/5	3	16:9	38x	1.8	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	HC-V100M	\$350	SD/SDHC/SDXC/Internal	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/5	2.7	16:9	34x	1.8	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	HC-V100	\$300	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/5	2.7	16:9	34x	1.8	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	HC-V10	\$250	SD/SDHC/SDXC/Internal	MP4	1920x1080		1	CMOS	1/5	2.7	16:9	63x	1.9	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st
	TM40K	np	SD/SDHC/SDXC/Internal	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/5	2.7	16:9	16.8x	1.8	o	y	n	n	n	n	n	n	y	y	y	n	n	n	n	n	st
	TM900K	np	SD/SDHC/SDXC/Internal	MPEG4 AVC/H.264	1920x1080		3	CMOS	1/4	3.5	16:9	12x	1.5	o	y	n	n	n	n	n	n	n	y	y	n	n	n	y	y	st
SD800K	np	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		3	CMOS	1/4	3	16:9	12x	1.5	o	y	n	n	n	n	n	n	n	y	y	n	n	n	n	y	st	
Panasonic Professional www.panasonic.com	AG-HPX370	\$10,000	P2 Memory Card	AVC/MPEG-4/H.264	1920x1080		3	CMOS	1/3	3.2	16x9	17x	1.6	np	y	y	y	y	y	y	y	y	n	y	y	y	y	n	sh	
	AG-HPX255	\$7,000	P2 Memory Card	AVC/DVCPRO HD/DVCPRO 50/DVCPRO/DV	1920x1080		3	CMOS	1/3	3.5	16x9	22x	1.6	o	y	y	y	y	y	y	y	y	y	y	y	y	y	y	st	
	AG-HPX250PJ	\$6,355	P2 Memory Card	AVC-Intra 100/AVC-Intra 50/DVCPRO HD/DVCPRO50/DVCPRO/DV	1920x1080		3	MOS	1/3	3.5	16x9	22x	1.6	o	y	y	y	y	y	y	y	y	y	y	y	y	y	y	st	
	AG-AC160A	\$5,090	SD/SDHC/SDXC	MPEG-4 AVC/H.264	1920x1080		3	MOS	1/3	3.5	16x9	22x	1.6	o	y	n	y	y	y	n	y	y	y	y	y	y	y	y	st	
	AG-AF100	\$4,995	SD/SDHC/SDXC	MPEG-4 AVC/H.264	1920x1080		1	MOS	4/3	3.5	16x9	np	np	np	y	n	y	y	y	n	y	y	y	n	y	y	y	y	st	
	AG-AC130A	\$4,130	SD/SDHC/SDXC	MPEG-4 AVC/H.264	1920x1080		3	MOS	1/3	3.5	16x9	22x	1.6	o	y	n	y	y	y	n	y	y	y	n	n	n	y	y	st	
	AG-DVX100B	\$3,995	Mini DV	np	np		3	CCD	1/3	3.5	np	10x	1.6	o	y	y	y	y	y	n	y	n	n	y	n	n	y	y	y	
	AG-HPX170PJ	\$3,795	P2/SD/SDHC	DVCPRO HD/DVCPRO50/DVCPRO/DV	1920x1080		3	CCD	1/3	3.5	np	13x	1.6	o	y	y	y	y	y	y	y	y	n	y	y	y	y	y	st	
	AG-HMC150PJ	\$3,495	SD/SDHC	MPEG-4 AVC/H.264	1920x1080		3	CCD	1/3	3.5	np	13x	1.6	o	y	y	y	y	y	y	y	y	y	n	n	n	y	y	st	
	AG-HMC80PJ	\$2,550	SD/SDHC	MPEG-4 AVC/H.264	1920x1080		3	MOS	1/4	2.7	16x9	12x	1.8	o	y	y	y	y	y	y	y	y	y	y	n	n	n	y	st	
AG-HMC40PJ	\$2,095	SD/SDHC	MPEG-4 AVC/H.264	1920x1080		3	MOS	1/4	2.7	16x9	12x	1.8	o	y	y	y	y	y	n	y	y	y	n	n	n	y	y	st		
AG-AC7	\$1,380	SD/SDHC/SDXC	MPEG4-AVC/H.264	1920x1080		1	MOS	1/4	2.7	16x9	16.8	1.8	o	y	y	n	n	y	n	n	y	y	n	n	n	n	n	sh		
RCA www.rcaaudiovideo.com	EZ5100R	\$180	SD/Internal	H.264/MOV	1440x1080		np	np	np	2.4	np	np	np	np	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st	

your subject while shooting at a distance. It records 1920x1080/60i video with an option for 60p at 1280x720 resolution. Features can be accessed with the 3.0-inch LCD touch screen along with white balance, shutter and focus. However, the H300 must record to an SD/SDHC card. To skip the card, 16GB internal memory is available with the next model up, the Samsung H304, for about \$100 more. This camera has no input for external mics.

The Mid Budget Range (\$500 - \$1,500)

If you have said things like, "I need a camcorder

that will give me better image control, while being moderately priced," this could be a good range to shop in. At this price range, you'll start to find larger image sensors than in the lower-priced camcorders. Additionally, camcorders in this range will tend to have more features allowing for more flexibility.

Canon VIXIA HF M52 - \$700

One of the newer camcorders in the Canon VIXIA lineup, the HF M52 comes equipped with 32GB of internal memory and an additional SD/SDHC/SDXC memory card slot.

The 1/3-inch CMOS image sensor will help you maintain image quality in a lower light setting than smaller sensors. The HF M52 records 1920x1080/60i video with options to shoot in 30p and 24p, which are great settings for Web video or a more cinematic feel, respectively. And since one of the first steps to a more professional video is professional sound, a plus on this camcorder is the 1/8-inch input with manual audio controls, and a headphone jack to monitor the incoming signal. Manual control of exposure, as well as a wide range of white balance adjustment

is also available.

Panasonic HC-X900M - \$1,200

Unlike many similar looking camcorders, the Panasonic X900M contains three 1/4-inch MOS sensors (3MOS). 3MOS allows for better color reproduction at lower light levels, which improves the overall image quality. This camcorder comes equipped with 32GB of internal memory and the option to use SD/SDHC/SDXC memory cards for additional recording time. Video can be recorded at 1920x1080/60p/60i. Manual controls like

ARTICLE CONTINUED ON PAGE 28 ►►

Manufacturer	Model	Price	Recording Media	Data Format	HD Resolution		Number of Sensors	Sensor Type	Sensor Size (inches)	LCD Monitor (inches)	LCD Aspect Ratio	Optical Zoom	Power	F-Stop	Image Stabilization	Gain Control/Iris/ALC	Zebra Stripes	Internal ND Filter	Standard Mic Input	Headphone Jack	Audio Level Controls	Speaker	USB I/O	HDMI Out	FireWire I/O	SDI Out	HD-SDI Out	Accessory Shoe(s)	Wireless Remote	Form Factor	
Samsung www.samsung.com	HMX-H300BN	\$350	SD/SDHC	H.264	1920x1080		1	CMOS	1/4	3.0	16:9	30x	np	o	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st		
	HMX-QF20BN	\$350	SD/SDHC/SDXC/Internal	H.264	1920x1080		1	CMOS	1/4	2.7	16:9	20X	1.8	o	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
	HMX-Q20BN	\$260	SD/SDHC/SDXC	H.264	1920x1080		1	CMOS	1/4	2.7	16:9	20X	1.8	o	n	n	n	n	n	n	n	n	y	y	y	n	n	n	st		
	HMX-F80BN	\$200	SD/SDHC/SDXC	H.264	1920x1080		1	CMOS	1/3	2.7	16:9	52x	1.8	E	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
Sony www.sony.com	HDR-AX2000	\$3,500	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		3	CMOS	1/3	3.2	16:9	20X	1.6	o	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
	HDR-FX1000	\$3,200	Mini DV	MPEG2/AVI	1440x1080		3	CMOS	1/3	3.2	16:9	20X	1.6	o	n	n	n	n	n	n	n	n	n	y	y	n	n	n	st		
	HDR-FX7	\$2,000	Mini DV	MPEG2/AVI	1440x1080		3	CMOS	1/4	3.5	16:9	20X	1.6	np	n	n	n	n	n	n	n	n	y	y	y	n	n	n	st		
	NEX-VG20	\$1,600	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		1	CMOS	np	3	4:3	np	3.5	np	n	y	n	y	y	n	n	n	y	y	n	n	n	y	st		
	HDR-PJ580V	\$900	SD/SDHC/SDXC	MPEG4 AVC/H.268	1920x1080		1	CMOS	1/3	3	4:3	12x	1.8	o	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
	HDR-XR260V	\$700	SD/SDHC/SDXC	MPEG4 AVC/H.264	1920x1080		1	CMOS	1/3	3	16:9	30x	1.8	o	n	n	n	n	y	y	n	n	y	y	n	n	n	n	st		
	HDR-CX260V/B	\$550	SD/SDHC/SDXC	MPEG4 AVC/H.265	1920x1080		1	CMOS	1/3	3	16:9	30x	1.8	o	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
	HDR-CX190/B	\$270	SD/SDHC/SDXC	MPEG4 AVC/H.266	1920x1080		1	CMOS	1/5	2.7	16:9	25x	1.8	o	n	n	n	n	n	n	n	n	y	y	n	n	n	n	st		
Sony Professional http://pro.sony.com	NEXFS700	\$9,200	flash memory unit/Memory Stick PRO Duo(Mark2)/Memory Stick PRO-HG Duo/SD/SDHC/SDXC	MPEG4 AVC/H.264, MPEG2	1920x1080		1	CMOS	Super 35mm	3.5	16:9	np	np	np	y	n	y	y	y	n	n	y	y	n	n	y	n	y	st		
	NEXFS100	\$5,850	Memory Stick PRO Duo(Mark2)/Memory Stick PRO-HG Duo/Memory Stick PRO-HG Duo HX/SD/SDHC/SDXC	MPEG4 AVC/H.264/MPEG2	1920x1080		1	CMOS	Super 35mm	3.5	16:9	np	1.4	o	n	y	n	y	y	n	n	n	y	y	n	n	n	Y	y	st	
	PMW-100	\$3,980	SxS	MPEG HD422	1920x1080		1	CMOS	1/2	3.5	16:9	10x	1.8	np	y	n	n	y	y	n	n	n	y	y	y	y	n	n	y	st	
	HXR-NX70U	\$2,800	SD/SDHC/SDXC/Internal	MPEG4 AVCHD	1920x1080		1	CMOS	1/2	3	16:9	10x	1.8	o	y	n	n	y	y	n	n	n	y	y	n	n	n	n	n	st	
	HXR-NX30U	\$2,300	SD/SDHC/SDXC/Internal	MPEG4 AVCHD	1920x1080		1	CMOS	1/2	3	16:9	10x	1.8	o	y	n	n	y	y	n	n	n	y	y	n	n	n	n	n	st	
Sakar www.vivitar.com	DVR 840XHD	\$200	SD/Internal	AVI	1920x1080		1	CMOS	np	3	4:3	5X	3.5	np	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st		
	DVR 790HD	\$75	SD/Internal	AVI	1280x720		1	CMOS	np	2.7	4:3	0	3.0	np	n	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st	
	DVR 910HD	\$70	SD	AVI	1920x1080		1	CMOS	np	2.7	4:3	0	np	np	n	n	n	n	n	n	n	n	y	n	n	n	n	n	n	st	
	DVR 1020HD	\$60	SDHC	AVI	1920x1080		1	CMOS	np	2.7	4:3	0	np	np	n	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st	
	DVR 508HD	\$34	SD	AVI	1280x720		np	np	np	1.8	4:3	0	3.0	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	
	XVN-2	np	microSD/SD/SDHC	np	1920x1080		np	np	np	3	4:3	0	np	np	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	st	
	DVR 990HD	np	SD/SDHC/SDXC/Internal	np	1920x1080		1	CMOS	np	3	16:9	23x	3.5	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	
	XVN-5	np	microSD/SD/SDHC	MOV	1920x1080		1	CMOS	1/3	3	4:3	5X	3.5	np	n	n	n	y	n	n	n	n	y	y	n	n	n	n	n	st	
	DVR 949HD	np	SD	AVI	1920x1080		1	CMOS	np	2.7	4:3	0	np	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	
	DVR 945HD	np	SD	np	np		np	np	np	2.7	4:3	0	np	np	n	n	n	n	n	n	n	n	n	y	n	n	n	n	n	n	st
	DVR 830XHD	np	SD/MMC/Internal	AVI	1280x720		np	np	np	2.7	4:3	3x	3.2	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	
	DVR 980HD	np	SD/SDHC	AVI	1920x1080		1	CMOS	np	3	4:3	10x	2.0	np	n	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st	
	DVR 810HD	np	SD/Internal	AVI	1280x720		1	CMOS	np	2.7	4:3	0	2.8	np	n	n	n	n	n	n	n	n	y	y	y	n	n	n	n	st	
	DVR 870HD	np	np	AVI	1280x720		np	np	np	2.4	4:3	0	np	np	n	n	n	y	n	n	n	n	n	y	y	n	n	n	n	st	
	DVR 940XHD	np	SD	AVI	1280x720		1	CMOS	np	2.7	4:3	5X	np	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	
	DVR 920HD	np	SD	AVI	1280x720		1	CMOS	np	2.4	4:3	0	3.0	np	n	n	n	n	n	n	n	n	y	y	n	n	n	n	n	st	



▶▶ CONTINUED FROM PAGE 25

focus, zoom and exposure settings can be set using a manual ring, much like the higher-end camcorders. The camera features a built-in 5.1ch mic that allows audio to be recorded in surround, zoom and focus. When an external mic is desired, the X900M also provides a stereo 1/8-inch audio input and a headphone port for monitoring.

The More Budget Range (\$1,500 - \$5,000)

If you have said, "I would like to upgrade my existing camcorder, so I can take my videos to the next level" then this is probably the price range you are looking at. Camcorders in this range tend to have features that lean more towards professional equipment. These camcorders will give you more control over the audio and visual aspects of making videos, as well as features like multiple image sensors, XLR inputs and dual memory card slots.

Sony HXR-NX30U - \$2,300

Sony's HXR-NX30U is compact, yet offers many desirable features. The camera touts 96GB of internal memory with room to expand with an SD card slot, a large 1/2.88-inch CMOS image sensor, two detachable XLR inputs

ONCE YOU SET A BUDGET AND REALIZE YOUR NEEDS, FINDING A VIDEO CAMERA THAT WILL HELP YOU ACCOMPLISH YOUR GOALS SHOULD BE A SNAP.

with manual audio controls, and it records 1920x1080/60p video with additional frame rate options including 60p, 60i, 30p and 24p. While the large 3.5-inch LCD monitor is nice, the icing on this cake is the built-in projector that will allow you to shoot-then-show your video by projecting it onto any flat surface for an image size as big as 100-inches diagonal.

JVC GY-HM600 - \$4,695

One of JVC's new ProHD cameras featured at NAB 2012 was the GY-HM600. This camcorder is great for independent productions as it is still relatively affordable and will give you the control you need to produce professional-looking and sounding video. The HM600 features three 1/3-inch CMOS sensors, three built-in ND filters for added control of exposure, two XLR inputs with phantom power

supply along with one input for a wireless receiver and two SDHC/SDXC slots for a dual-backup or continuous recording. It can record in a vast amount of resolutions including 1920x1080/60i/30p/24p, 1440x1080/60i, and 1280x720/60p/30p/24p. It also has several options for media format compatibility including MOV (FCP), MP4 (XDCAM EX) and AVCHD, as well as multiple encoding formats (HD MPEG-2, AVCHD, SD H.264). Video can be output via HD/SD-SDI or HDMI.

The "What Budget?" Range (\$5,000+)

If you have said, "I would like to make videos while keeping up with the professional video standards in my field," or "I need a camcorder that blows the rest of them away, regardless of cost and required expertise," then this is the range you should be looking in.

Canon XF305 - \$8,000

While professional camcorders get much pricier, the Canon XF305 provides an exceptional amount of great features that just aren't found at the lower price points. In addition to three CMOS image sensors, XLR ports, a 4-inch rotating LCD monitor, multiple recording resolutions and frame rates; features like hot-swappable CF memory cards, 4:2:2 color sampling, file-based MPEG-2 compression with an MXF file wrapper, HD-SDI output, genlock input and SMPTE timecode input and output terminals make this camcorder ideal for an array of professional platforms from event videography to independent filmmaking.

A Match Made in Heaven

Most of us don't want to upgrade too often, and your camcorder purchase is a big decision. Once you set a budget and realize your needs, finding a video camera that will help you accomplish your goals should be a snap. Doing the research is the hardest part, but use at the accompanying buyer's guide grid - we've already done half of your homework for you. Find, compare, check out review sites and get ready to upgrade your rig. Good luck and happy shopping!

Julie Babcock has worked in all areas of video production.

For comments, email: editor@videomaker.com, use article #15348 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15348

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HD Helmet Camcorder

- Solid State HD Sports Camcorder
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- Wide-angle (170°) fixed-focus lens
- Rotating Lens with laser-aided leveling
- Record 1080p to 720P HD video resolutions @30/25fps
- One switch turn-on & record
- One-click video uploading
- Record onto microSD media (up to 32GB)

#C02HDHC



5 Mega Pixels
HD

GoPro

HD HERO2 / 3D Kit

- Records 1080p, 960p, 720p HD Video
- SD/SDHC up to 32GB
- 1/2.3", 11Mp CMOS sensor
- 2X sharper pro glass lens
- f/2.8 Fixed Focus
- 170° wide, 127° medium FOV (including 1080p)
- 90° narrow FOV • Microphone input

GoPro 3D kit - 3D waterproof housing for (2) 1080p HD HERO cameras, with 3D editing software #G0H0H2 / G03DH



11 Mega Pixels
AVCHD

SONY MHS-TS55/S

Bloggie Live HD Camcorder

- Records 1080p HD video • Live WiFi streaming
- Wirelessly upload videos to internet
- Internal 8GB flash memory (shoot Up to 3 Hrs)
- Captures 12.8 Mp still images
- 1/2.5" Exmor CMOS sensor
- 3.0" touch screen LCD screen
- SteadyShot image stabilization
- 4x digital zoom
- LED light for low-light filming
- Flip-out USB arm • Mac & PC compatible

#S0MHST55S



13 Mega Pixels

Panasonic HX-WA2

Waterproof HD Dual Camcorder

- Capture 1920 x 1080 HD video
- Record onto SD/SDHC/SDXC media cards
- Waterproof up to 9.8 feet (3 meters)
- 5x optical, 12x wide-range, and 15x intelligent zoom
- 1/2.33" MOS Sensor • Electric image stabilization
- 285-degree rotating 2.6" wide LCD screen
- Panorama shooting mode • Face detection mode
- High-speed consecutive shooting mode
- Includes software for easy web uploading

Blue #PAHXWA2BL / Orange #PAHXWA2O



14 Mega Pixels

SONY HDR-GW77V

Full HD Flash Memory Camcorder

- Solid State HD Waterproof Camcorder
- 16GB internal flash memory
- Waterproof down to 16.4' (5 m)
- Waterproof, shockproof, dustproof
- Shoot HD 1920 x 1080/60p Video
- 1/3.9", 5.4Mp Back-illuminated "Exmor R" CMOS sensor
- 10x optical Sony G series lens
- Optical image stabilization
- 3" LCD screen • Geotagging with built-in GPS

Black #SOHDRGW77VB / Blue #SOHDRGW77VBL / White #SOHDRGW77VW



20 Mega Pixels

Canon VIXIA HF M52

HD Flash Memory Camcorder

- Canon 1/3" HD 2.37Mp CMOS pro image sensor
- 1920 x 1080 recording on to SD/SDHC/SDXC media
- Internal 32GB flash memory
- HD 10x optical zoom lens
- 3.0" widescreen LCD
- Optical image stabilization
- Cinematic Features
- 24p cinema & 30p progressive modes
- Microphone & headphone inputs
- Built-In WiFi

#CAHFM52



AVCHD

SONY HDR-CX760V

HD Flash Memory Camcorder

- 1920 x 1080 60p HD recording • 1/2.88" back-illuminated Exmor R CMOS sensor • Internal 96GB flash memory
- SD/SDHC/SDXC card slot
- 3.0" LCD screen & color viewfinder
- 10x optical & 17x extended zoom
- Optical image stabilization
- Carl Zeiss Vario-Sonnar T lens
- Geotagging through GPS & NAVTEQ maps
- Microphone & headphone inputs
- CinemaTone presets & 24p recording

#SOHDRCX760VB



24 Mega Pixels
AVCHD

SONY HDR-PJ760V

HD Flash Memory Camcorder

- 1920 x 1080 60p HD recording
- 1/2.88" back-illuminated Exmor R CMOS sensor
- Built-in projector (Up to a 100" Diag.)
- Internal 96GB flash memory
- SD/SDHC/SDXC card slot • 3.0" LCD
- 10x optical & 17x extended zoom
- Optical image stabilization
- Carl Zeiss Vario-Sonnar T lens
- Geotagging through GPS & NAVTEQ maps
- Microphone & headphone inputs

#SOHDRPJ760VB



24 Mega Pixels
AVCHD

Panasonic HC-X900M

3 MOS HD Flash Memory Camcorder

- Internal 32GB flash memory • SD/SDHC/SDXC card slot
- 3x 1/4.1", 3.05Mp sensors
- 3D recording with optional VW-CLT2 3D lens
- 1080/60p recording at a 28-Mbps bit rate
- Optical image stabilization
- Leica Dicomar 12x optical, 23x intelligent zoom lens
- 3.5" wide angle 3D LCD screen
- Pre-record function
- Microphone & headphone inputs

#PAHCX900MK



16 Mega Pixels
AVCHD

SONY HDR-TD20V

3D HD Handycam Camcorder

- Shoot f d 3D in 1920 x 1080 60p/24p
- Dual 1/4.0" back-illuminated Exmor CMOS sensors
- Dedicated 2D/3D switch
- 3.5" LCD (3D viewing without 3D glasses)
- Optical 10x & 17x extended zoom
- Optical image stabilization
- 5.1 ch surround mic
- Microphone & headphone inputs

#SOHDRTD20VS



20 Mega Pixels
AVCHD 3D

SONY HXR-NX3D1

Professional 3D Compact HD Camcorder

- Dual 1/4" Exmor R CMOS sensors
- Two Sony G lenses (10x optical in 3D)
- 96 GB internal memory
- One SD or Memory Stick card slot
- 3.5" LCD (view 3D glasses-free)
- Full 1920 x 1080 in 3D and 2D
- 3D modes: 60i, 50i, 24p (28 Mb/s)
- 2D modes: 60p, 50p, 60i, 50i, 24p, 25p
- Active SteadyShot in 3D
- Dual XLR inputs (line / Mic / Mic+48V selectable)

#SOHXRNX3D1U



AVCHD

Panasonic HDC-Z10000

Twin-Lens 2D/3D Camcorder

- Two independent 3MOS sensors
- HD Stereoscopic 3D recording
- Dual Integrated 10x Lenses (12x in 2D) • Triple manual rings: focus, zoom and iris
- Multi View Coding (MVC) Recording in 3D 1080p60
- 3.5" 3D compatible LCD
- Dual XLR Inputs
- 2D/3D Still Image Recording

#PAHDCZ10000



AVCHD 3D



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- ▶ Hands-on demos
- ▶ Convenient free parking available

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Canon VIXIA HV40 HDV Camcorder

- 1/2.7", 2.96MP HD CMOS sensor with RGB primary color filter
- Frame rates: 60i, native 24p (records at 24p), 24p cinema, and 30p (at 60i)
- DIGIC DV II image processor
- Canon HD 10x optical video lens
- Instant Auto Focus w/ext. sensor
- SuperRange optical stabilization
- 2.7" widescreen LCD screen • External mic input
- Smooth variable zoom with 3 fixed zoom speeds



3 Mega Pixels HDV

Panasonic AG-HMC40 3-CMOS Pro HD Solid State Camcorder

- 1080 and 720 HD resolution recording on SDHC cards
- 3 1/4" 3-MP CMOS HD image sensors
- AVCHD MPEG-4 AVC/H.264 encoding
- 10.6-megapixel still capability
- 12x optical zoom
- 2.7-inch LCD monitor
- XLR audio input, HDMI output, USB 2.0



AVCHD

SONY HXR-NX30 Compact HD Camcorder

- Shoots AVCHD up to 1080/60p at 24Mbps
- Built-in 96GB Flash Memory Capacity
- Pro Audio Control & Level Adjustment
- Equipped with Dual XLR Inputs
- Built-in Projector & 3.5" LCD Monitor
- Built-In Stereo Shotgun Microphone
- Super-Wide Carl Zeiss 10x Optical Lens
- Balanced Optical SteadyShot
- Features SD or Memory Stick Card Slot



AVCHD

Canon VIXIA HF G10 HD Flash Memory Camcorder

- 1920 x 1080 HD Recording
- 32GB internal flash memory
- Two SD/SDHC/SDXC card slots
- 1/3" 2.37Mp HD CMOS pro sensor
- 3.5" LCD & Color viewfinder
- Genuine Canon 10x HD Video Lens
- SuperRange optical stabilization
- Custom cinema-Look filters
- Professional shooting assist functions



AVCHD

Canon XA10 Professional HD Solid State Camcorder

- 64GB Internal and Dual SDHC/SDXC card slots with relay recording
- 1920 x 1080 CMOS Image Sensor
- Canon 10x HD Video Lens
- 8-Blade Iris and Manual Focus Ring
- DIGIC DV III Image Processor
- 24Mbps Recording (AVCHD)
- 3.5" High-resolution touch panel LCD and EVF
- Dual XLR terminals



AVCHD

Canon XF100 / XF105 HD Professional CF Camcorders

- 1/3" CMOS 1920 x 1080 CMOS sensor
- Dual CF card slots
- 50Mbps MPEG-2 recording
- Canon's MPEG-2 4:2:2 color sampling
- 60p/60i, 30p, 24p MXF File Format
- 10x HD zoom lens
- 3.5" 920k dot LCD monitor
- Stereoscopic 3-D recording capabilities
- Dual XLR inputs • Waveform Monitor



AVCHD

JVC GY-HM150U 3-CCD ProHD Solid State Camcorder

- Supports 1920/1440 x 1080, 1280 x 720 HD formats in 35, 25, and 19Mbps/ps with variable frame rates
- Dual SDHC card slots (loop, pre-record)
- Captures native QuickTime files
- Fujinon 10x HD lens
- Optical image stabilization
- Dual XLR audio, with phantom
- Color viewfinder and large LCD monitor



ProHD

SONY HDR-AX2000 3-CMOS AVCHD Flash Camcorder

- Three 1/3" CMOS Exmor sensors
- Records to Memory Stick PRO Duo, SD/SDHC Cards (Dual media slots)
- 1080/60i, and 24p/30p AVCHD recording
- 20x zoom G-Lens (29.5mm wide)
- Zoom, focus, and iris rings
- Dual XLR inputs • 3.2" Xtra Fine LCD
- Low-light (1.5 LUX) capabilities
- Cinematone Gamma and Cinematone Color control



AVCHD

SONY HXR-MC2000U Shoulder Mount AVCHD Pro Camcorder

- 1/4" 4.2Mp, ClearVid Exmor R CMOS sensor
- Built-in 64GB hard drive
- SD/SDHC/SDXC & Memory Stick slot
- 1920 x 1080i AVCHD (24Mbps)
- MPEG-2 SD Mode (9Mbps)
- 12x wide angle Sony G lens
- Optical SteadyShot stabilizer
- 2.7" ClearPhoto LCD
- Manual lens ring with assignable parameters



AVCHD

Panasonic AG-HMC80 3-CMOS Pro HD Solid State Camcorder

- 3 1/4" CMOS sensors
- 1080 or 720 HD recording
- SD/SDHC/SDXC media card slot
- 12X optical smooth zoom lens
- High-definition and standard-definition recording
- Pre-record & interval recording
- Optical image stabilization
- Dual XLR/3.5mm mic-in inputs
- HDMI, USB, DV, Component terminals



10 Mega Pixels AVCHD

Panasonic AG-AC130A / AG-AC160A 3-MOS HD Handheld Camcorders

- 3x 1/3", 2.2 Mp CMOS sensor - 18-bit dsp
- 22x optical zoom lens
- 1080p 1080i 60p/30p/24 & 720p60
- Three rings; Manual Zoom, Focus & Iris
- Dual SD/SDHC/SDXC card slots
- AVCHD & DV recording (SD) modes



AVCHD

Panasonic AG-HPX250 / AG-HPX255 3-MOS HD Handheld Camcorders

- 3x 1/3", 2.2 Mp CMOS sensor - 18-bit dsp
- 22x optical zoom lens
- 1080p 1080i 60p/30p/24 & 720p60
- Three rings; Manual Zoom, Focus & Iris
- HD-SDI & HDMI output
- 59.94 Hz / 50 Hz switchable
- Slow/quick motion recording mode
- P2 card and DVCPRO recording



DVCPRO HD

JVC GY-HMQ10 4K Flash Memory HD Camcorder

- Record real time 4K imagery (3,840 x 2,160) at 24p, 50p and 60p • 1/2.3" back-illuminated CMOS sensor with 8.3 million active pixels (3840 x 2160) • SDHC/SDXC media card slot
- Ultra high resolution F2.8 10X Zoom Lens (F2.8 to 4.5 — f=6.7-67 mm) (35 mm conversion: 42.5 to 425 mm)
- 3.5" high resolution touch panel LCD screen
- 0.24" Lcos 260,000 pixel viewfinder • Optical image stabilization
- Interval (time lapse) recording in both 4K and HD modes



AVCHD 4K

SONY HXR-NX5U 3-CMOS NXCAM Flash Memory Camcorder

- Three 1/3" Exmor CMOS sensors, with a ClearVid array
- Capture uses Memory Stick PRO Duo / SDHC Cards, with relay record capability (optional HXR-FMU128 flash memory unit)
- 20x wide G series lens
- HD-SDI & HDMI output, SMPTE Time Code in/out, Dual XLR inputs
- Built-in GPS system
- 3.2" Xtra Fine LCD



AVCHD

Panasonic AG-HPX370 3-CMOS Pro Solid State Camcorder

- 10-bit, 4:2:2, native 1080 and 720p HD resolution in variable frame rates
- AVC-Intra 100 and 50 codecs
- Two P2 card slots (hot swapping, loop, pre-record)
- 3 advanced 1/3", 2.2 MP CMOS sensors • HD-SDI output
- 20-bit digital signal processor
- 17x Fujinon HD lens • Built-in scan reverse mode
- Waveform and vector scope display



DVCPRO HD

Canon XF300 / XF305 3 CMOS Solid State HD Camcorder

- Record HD 1080/720 onto Compact Flash cards
- 50Mbps MPEG-2 4:2:2 recording
- 3 1/3" 2.37Mp CMOS sensors
- 18x Canon HD L series lens
- DIGIC DV III image processor
- 4" 1.23 Mp LCD monitor
- 1.55 Mp Color EVF
- Over and under crank
- XF305 Step-up: HD-SDI Output, Genlock & SMPTE Time Code



HD

SONY PMW-100 XDCAM HD422 Handheld Camcorder

- 1/2.9" CMOS Sensor (1920 x 1080)
- XDCAM 422 MPEG-2 Codec at 50 Mb/s
- 10x Zoom Lens - 40-400mm (35mm Equiv)
- 3.5" LCD Screen (852 x 480 Pixels)
- HD-SDI & HDMI Outputs
- Dual XLR Inputs / Timecode & Genlock I/O • Dual ExpressCard SxS Card Slots • Compatible with XDCAM Disc & EX Formats • DVCAM Recording



XDCAM

SONY PMW-200 XDCAM HD422 Camcorder

- Three 1/2" Exmor CMOS sensors
- MPEG HD422 at 50 Mbps recording
- HD422 1080p at 24 & 30 fps HD422 720p at 24, 30 & 60 fps Fujinon 14x zoom (servo/manual) lens
- Dual SxS memory card slots
- Four Channels of 16-bit audio
- Supports MXF and XDCAM EX workflows • Articulated 3.5" LCD screen
- Timecode & Genlock input • Cache recording Up to 15 seconds



XDCAM

SONY NEX-VG20 Interchangeable Lens HD Camcorder

- Exmor APS-size HD CMOS 16.1 Mp sensor
- Records 1920 x 1080 @ 24p, 60i, 60p
- Memory Stick PRO Duo/SD/SDHC/SDXC card slot
- Sony NEX E series lens mount (A series option)
- 24 Mb/s AVCHD MPEG-4 AAC-LC
- 3.0" LCD and CVF
- Quad-capsule microphone & 5.1 Sound
- Cinematone Gamma / Color • Manual audio control



AVCHD

Panasonic AG-AF100 Professional Memory Card Camcorder

- Large 4/3-type MOS sensor
- Micro four thirds lens mount
- Uses still & cinema lenses
- Two SDHC/SDXC memory card slots (Relay Recording)
- AVCCAM Recording 1080i/p, 720p variable frame rates
- Optical low-pass filter
- HD-SDI, HDMI output, Dual XLR



AVCCAM

SONY NEX-EA50UH HD Shoulder Mount Interchangeable Lens Camcorder

- Exmor APS-C CMOS sensor (AVCHD / MPEG2-SD) • Supplied 18-200 servo power zoom • E-mount interchangeable lens system • Add lenses without being locked on a lens brand or lens mount
- Use Alpha A-mount lenses with 15-point phase detection AF
- Mechanical shutter Still Picture
- 3.5" LCD Panel • Record onto Memory Stick/SD/SDHC/SDXC/HXR-FMU128 (Optional) • Records on media card and FMU128 Simultaneously



AVCHD

SONY PMW-EX3 3-CMOS XDCAM EX Camcorder

- Interchangeable 1/2" bayonet lens mount, incl. Fujinon 14x5.8 lens
- 3 1/2" Exmor CMOS image sensors that shoot full raster 1920x1080 hi-def imagery
- Recording on removable SxS flash memory cards
- 1080 and 720 shooting modes with selectable bit rates in both PAL and NTSC standards
- Hi-res 3.5" LCD monitor • 8-Pin remote studio connectivity



\$8,320.00 XDCAM EX

Canon EOS C300 Cinema EOS/PL Camcorder Body

- Super 35mm CMOS sensor
- 50 Mbps MPEG-2 EF or PL lens mount
- Dual CF card slots
- Canon XF Codec - 4:2:2 color sampling
- Multiple recording formats
- High-resolution VF and 4", 1.23 Mp LCD
- HD-SDI, HDMI, XLR audio
- Canon DIGIC DV III image processor
- High-Speed, Slow-Motion, Time-Lapse and Stop-Motion
- Timecode I/O, Genlock in & Sync out



Lens Optional

SONY PMW-F3K-RGB Super 35mm HD Camcorder Kit

- Includes RGB 4:4:4 baseband output with S-LOG gamma
- Exmor Super 35 CMOS image sensor
- Includes 35mm, 50mm, 85mm lens kit
- PL lens mount, 35mm Cine lens compatibility
- 10-bit 4:2:2 HD-SDI
- Two SxS memory card slots
- Interlace/Progressive modes
- D-SDI Dual-link output
- 3D-LINK option



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Stock Footage Buyer's Guide

BY TERESA ECHAZABAL

Consider this: You have a client who wants you to use an abstract background while he is on camera. It has to be blue, with lights and motion. You know exactly what the client wants but you just don't have the time nor the resources to create such a background, nor do you want to hire someone else to create it for you. What do you do? You look for stock footage.

What is Stock Footage?

Stock footage or stock media is film or video that is not shot for a specific film or video project, but rather, is generic in nature. This type of footage is very useful to video producers because it is a lot

offer stock footage to anyone willing to pay for it. Some footage can even be downloaded instantly to your computer in various formats.

Where Do You Get It?

There are many websites that sell royalty-free stock media, and it's not limited to only film and video. You can also get stock in the form of music, sound effects and images. There are different options when it comes to usage rights. You can choose from rights-managed stock media, which is extremely limited single use, to copyright-free libraries which are non-exclusive multi-use, to public domain collections. You can even purchase stock footage custom created for

video and film producers. This is because you can purchase the footage and use it as many times as you like without having to pay royalties. This way, if your client wants to use a shot of a tropical rainstorm as a background shot on his commercial and you are living in Arizona in mid-summer, your tropical rainstorm footage will be just a click away.

Shutterstock is just one of the many websites out there that provide royalty-free stock footage to video creators and filmmakers for a cost. At the time of this writing, they claim to have more than 21 million royalty-free stock photos, illustrations and vectors to choose from. They are subscriber-based and they have different purchase plans. There is the 25-a-day subscription plan, where you can download any stock footage in their collection for \$249 a month, or \$2,560 a year. There is the \$49 a year on-demand plan, in which you can download five images and clips at any time within one year. Then there is the plan where you can purchase a single clip for \$19 for Web use in SD for \$49, or in HD for \$79.

Footage Firm is a stock website that provides HD and SD royalty-free stock footage of US and international cities, wildlife, sports, visual effects and more. They require no licensing fees, no research fees, unlimited usage, and no extra fees for commercial or worldwide usage. For \$149, you can purchase a 30 to 60 minute collection of SD stock clips. An HD collection of clips will run you \$249. Footage Firm also carries a large library of stock music and sound effects. All Footage Firm footage comes with a license that allows customers the right to use the footage royalty-free for unlimited use in all media, worldwide, in perpetuity.

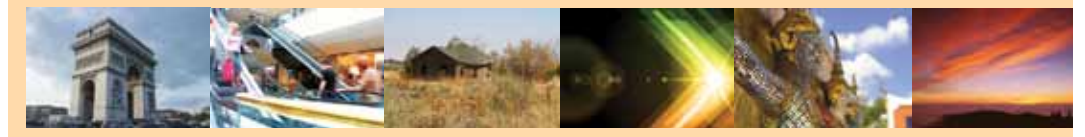
NEO Sounds is a stock website that specializes in music and sound effects only. They offer an extensive library of footage available for instant licensing and downloading. You can choose from two types of licenses, standard and mass market, and the latter lets you use them as many times as you like for as long as you desire, even for theatrical releases. They even offer free downloads of low quality versions of every single music track they have, so you can try it out before you

Spruce Up With Stock

cheaper and easier to acquire than shooting new footage. Some examples of stock footage are video of cities and landscapes, crowds of people, wildlife and motion backgrounds. There are websites that

your project at a high-end price, which might still be less expensive than what you would spend to shoot the footage yourself. Royalty-free stock media is commonly sought after by





Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
12 Inch Design, LLC	www.12inchdesign.com					•
2b Media Services	www.2b-royaltyfree.com	•	•			
300 Monks	www.300monks.com	•				
5 Alarm Music	www.5alarmmusic.com	•				
615 Music Companies	www.615music.com	•				
8118 Music	www.8118music.com	•				
A Luna Blue	www.alunablue.com				•	•
A.C. CO	www.editableclips.com					•
Ableton AG	www.ableton.com		•			
Air Power Stock Library	www.airpowerstock.com				•	
Airborne Sound	www.airbornesound.com		•			
Al Giddings Images, Inc.	www.algiddings.com				•	
AlwaysHD	www.alwayshd.com				•	•
America By Air	www.americabyair.com				•	•
American Music Company, Inc.	www.americanmusicco.com	•				
Animation Factory	www.animationfactory.com		•			•
anistock	www.anistock.com					•
Apple Inc.	www.apple.com			•		
Apple Inc.	www.apple.com/itunes	•	•			
Artbeats, Inc.	www.artbeats.com				•	
Arturia	www.arturia.com			•		
Associated Production Music LLC	www.apmmusic.com	•				
Audio Brand Central	www.audiobrandcentral.com	•				
AudioJungle	www.audiojungle.net	•	•			
AudioMicro, Inc.	www.audiomicro.com	•	•			
AudioSparx	www.audiosparx.com	•	•			
Avid Technology, Inc.	www.avid.com			•		
BackgroundLoop	www.BackgroundLoop.com					•
barbosa Video Services	www.barbosavideo.com				•	
BBC Worldwide	www.bbcmotiongallery.com				•	•
Bennett-Watt HD Productions, Inc.	www.bennett-watt.com				•	
Best Shot Stock Footage	www.bestshotfootage.com				•	
Big Score Music	www.bigscoremusic.com	•				
Blastwave FX	www.blastwavefx.com		•			
Buyout Footage	www.buyoutfootage.com				•	•
Cakewalk, Inc.	www.cakewalk.com			•		
CapitalDVStudio.com	www.capitaldvstudio.com					•
Capo Productions	www.capoproductionsmusic.com	•				
Cartoon Solutions	www.cartoonsolutions.com		•			•

Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
CGPlanet	www.cgplanet.net					•
Classic Video Products Inc.	www.classicvideoproducts.com					•
Clipcanvas	www.clipcanvas.com				•	•
Comparisonics Corporation	www.comparisonics.com		•			
Corbis Corporation	www.corbisimages.com				•	
Creative Digital, Inc.	www.lazertrax.com	•				
Creative Support Services	www.cssmusic.com	•	•			
Creative Video Products	www.creativevideopro.com					•
DakotaLapse	www.dakotalapse.com				•	
Davenport Music Library	www.davenportmusic.com	•				
De Wolfe Music UK	www.dewolfemusic.com	•	•			
Digital Associations, LLC	www.virtualset-designs.com					•
Digital Juice, Inc.	www.digitaljuice.com	•	•		•	•
Digital Sound Media	www.stockmusic.net	•	•			
Dittybase Inc.	www.dittybase.com	•				
Dosch Design GmbH	www.doschdesign.com	•	•		•	•
downloops.com	www.downloops.com					•
Downright Music	www.downrightmusic.com	•				
DUBturbo.com	www.dubturbo.com			•		
eFootage	www.efootage.com				•	
electro-illuminations	www.2496sfx.com			•		
Element Tank	www.elementtank.net					•
Elite Video	www.elitevideo.com	•			•	•
EXTREME MUSIC LIBRARY LTD.	www.extrememusic.com	•				
Eyeidea Inc.	www.eyeidea.com				•	
Fanero	www.buystocksound.com	•	•			
FirstCom Music	www.firstcom.com	•				
Fish Films FOOTAGE WORLD	www.footageworld.com					•
Fisher Creative Group	www.jeffreyfisher.com	•				
Footage Firm, Inc.	www.footagefirm.com	•	•		•	•
Footage Land	www.footageland.com					•
Footage Search	www.footagesearch.com					•
Footage Search	www.oceanfootage.com					•
FootageBank HD	www.footagebank.com					•
FootageHouse	www.footagehouse.com					•
Fotolia LLC	www.fotolia.com				•	•
Framepool AG	www.framepool.com					•
Free Stock Footage	www.freestockfootage.com					•
Freeplay Music LLC.	www.freeplaymusic.com	•				

Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
freeSFX	www.freestx.co.uk	•	•			
Freesound	www.freesound.org		•			
Fresh Music	www.freshmusic.com	•				
Gary Lamb Music	www.garylamb.com	•				
Getty Images, Inc.	www.gettyimages.com	•			•	
GlamourKey Inc.	www.cinematicstockfootage.com				•	
Global Cuts	www.globalcuts.com	•				
Global ImageWorks, LLC	www.globalimageworks.com				•	
GMP MUSIC	www.gmpmusic.com	•	•			
Goliath Media	www.goliathmedia.com				•	
GreenScreen Animals, Inc.	www.greenscreenanimals.com				•	
Greg Hensley Productions	www.gregghensley.com				•	
Greg Maroney	www.gregmaroney.com	•				
HISTORIC FILMS ARCHIVE, LLC.	www.historicfilms.com				•	
Hypereye Motion Graphics, Inc.	www.hypereye.tv					•
IB AUDIO	www.ibaudio.com	•				
Image-Line	www.image-line.com	•		•		
International Historic Films	www.ihfilm.com					•
Isaacson Communications, Inc.	www.worldclips.tv				•	
iStockphoto	www.istockphoto.com	•	•		•	•
ITN Source	www.itnsource.com				•	
Jamendo	www.jamendo.com	•				
Jeco Music	www.jecomusic.com	•				
JewelBeat Corporation	www.jewelbeat.com	•	•			
Jupiterimages	www.jupiterimages.com					•
Jupiterimages Corporation	www.crankcity.com	•				
Jupiterimages Corporation	www.dgusa.com					•
Jupiterimages Corporation	www.flyinghands.com	•				
Killer Tracks	www.killertracks.com	•	•			
Last Frontier Footage	www.lastfrontierfootage.com					•
Laurel Hill Recordings LLC	www.venicesoundeffects.com				•	
licensemusic.com	www.licensemusic.com	•				
LSM-STUDIOS	www.royaltyfreeheaven.com	•	•			
MAGIX	www.magix.com				•	
Mammoth HD, Inc.	www.mammothhd.com					•
Manchester Music Inc.	www.manchestermusiclibrary.com	•				
Manhattan Production Music, Inc.	www.mpmmusic.com	•				
Mark of the Clark, Inc.	www.iamusic.com	•				
MarkMusic Production	www.allmusiclibrary.com	•	•			

buy it. When you are ready to buy, you will receive the high quality version and a certificate that confirms you have the right to use the music. Their prices range from as few as \$8 to as many as \$35.

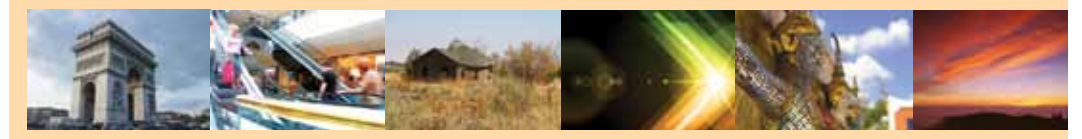
Pond5 has an extensive variety of royalty-free stock footage from which to choose. From stock video, to sound effects, music, Adobe After Effects projects, photos, and illustrations, there are few things you can't find at Pond5. They have customizable After Effects projects that can be imported straight to your timeline. With prices starting at just \$2 for an audio clip and \$5 for a video clip, Pond5's prices are very affordable, especially if you are on a tight budget. They are one of the most affordable stock footage companies, and that's because the prices are set by the artists who create and contribute the footage. ▶▶



Shutterstock Images LLC. • www.shutterstock.com



Footage Firm, Inc. • www.footagefirm.com



Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
Massivetracks.net GbR	www.massivetracks.net	•				
MediaMinistryStuff	www.mediaministrystuff.com				•	
Megatrax	www.megatrax.com	•				
MelodyLoops.com	www.melodyloops.com	•				
MotionElements Pte. Ltd.	www.motionelements.com				•	•
MotionLoops	www.motionloops.com					•
MotionRevolver, LLC.	www.motionrevolver.com					•
MotionVFX	www.motionvfx.com					•
MOTU, Inc.	www.motu.com			•		
Music 2 Hues	www.music2hues.com	•	•			
Music Bakery Publishing	www.musicbakery.com	•	•			
Music For Productions	www.musicforproductions.com	•				
Music for video	www.music-for-video.com	•				
Music Loops	www.musicloops.com	•				
Musicleads	www.musicleads.net	•				•
MyFootage.com	www.myfootage.com				•	
Narrator Tracks	www.ntracks.com	•				
National Geographic Society	www.ngdigitalmotion.com				•	
Nautilus Productions, LLC.	www.nautilusproductions.com				•	
Naxos Digital Services Ltd.	www.naxos.com	•				
NEO Sounds LLC.	www.neosounds.com	•	•			
Nightingale Music Productions Inc.	www.nightingalemusic.com	•	•			
Non-Stop Music	www.nonstopmusic.com	•				
oddball Film+Video	www.oddballfilm.com				•	
OGM Production Music	www.ogmmusic.com	•				
Omnimusic	www.omnimusic.com	•				
One Light Music Productions, Inc.	www.productiontrax.com	•	•		•	•
Opus 1 Music Library	www.opus1musiclibrary.com	•	•			
Opuzz Inc.	www.opuzz.com	•				
Organic Music Library	www.organicmusiclibrary.com	•				
Partners In Rhyme Inc.	www.partnersinrhyme.com	•	•			
PG Music Inc.	www.pgmusic.com				•	
Phoenix Clips	www.phoenixclips.com	•	•		•	•
Pond5	www.pond5.com	•	•		•	•
Post Holes, LLC.	www.post-holes.com					•
Premiumbeat.com	www.premiumbeat.com	•	•			
Pro Sound Effects	www.prosoundeffects.com				•	
ProAerialVideo	www.proaerialvideo.com					•
Production Garden Music	www.productiongarden.com	•	•			

Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
Publitek, Inc., dba Fotosearch	www.fotosearch.com	•			•	•
Qccs Productions Inc.	www.instantdownloadmusic.com	•				
Radio Mall	www.radio-mall.com	•	•			
Rampant Media Design Tools	www.rampantdesigntools.com			•	•	•
Raven On The Mountain Video Productions	www.seiurusvideo.com				•	
RevoStock	www.revestock.com	•	•		•	•
Ribbit Films, Inc.	www.ribbitfilms.com					•
RioVista Productions, Inc.	www.riovista-media.com	•			•	
Rocketclips Inc.	www.rocketclips.com				•	
Royalty Free HD	www.royaltyfreehd.com				•	
Royalty Free Music Library	www.royaltyfreemusiclibrary.com	•	•			
Royalty Free Stock Video Footage.com	www.royaltyfreestockvideofootage.com				•	•
Royalty-free.tv	www.royalty-free.tv	•				
RoyaltyFreeMusic	www.royaltyfreemusic.com	•	•			
Rue Wildlife Photos	www.ruevideo.com					•
Rumblefish Inc.	www.rumblefish.com	•				
SFXSource.com	www.sfxsource.com	•	•			
Shockwave-Sound.Com	www.shockwave-sound.com	•	•			
ShowStoppersFX	www.showstoppersfx.com					•
Shutterstock Images LLC.	www.shutterstock.com				•	•
Signature Music, Inc.	www.sigmusic.us	•				
SmartSound Software, Inc.	www.smartsound.com	•	•	•		
Songfreedom.com	www.songfreedom.com	•				
SonicProducer.com	www.sonicproducer.com				•	
Sonnyboo Productions	www.sonnyboo.com	•			•	
Sony Creative Software Inc.	www.acidplanet.com	•	•			
Sony Creative Software Inc.	www.sonycreativesoftware.com	•	•	•	•	•
Sound Effects Warehouse	www.soundeffectwarehouse.com				•	
Sound Ideas	www.sound-ideas.com	•	•			
Sound Vision library	www.soundvisionlibrary.com	•	•			
Sounddogs.com, Inc.	www.sounddogs.com	•	•			
SOUNDFX.com	www.soundfx.com				•	
Soundsnap	www.soundsnap.com				•	
SoundTraxx Music Library	www.soundtraxxmusic.com	•				
Stock Music Boutique	www.stockmusicboutique.com	•				
Stock Music Store Inc.	www.stockmusicstore.com	•				
Stock-Music.com	www.stock-music.com	•				
Stock20.com	www.stock20.com	•				
StockFootagetorFree.com	www.stockfootagetorfree.com					•

Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
StockMusic.com	www.stockmusic.com	•	•			
Stockr3d.com	www.stockr3d.com				•	
Streamwerx	www.streamwerx.com				•	
Studio 1 Productions Inc.	www.studio1productions.com	•	•		•	•
Suite Imagery, LLC	www.actionbacks.com					•
Tele Music	www.tele-music.com	•				
The Associated Press	www.aparchive.com				•	
The Film Gate LLC	www.thefilmgate.com				•	
The Hollywood Edge	www.hollywoodedge.com	•	•			
The Sound Effects Library Ltd.	www.sound-effects-library.com	•	•			
Thinkstock	www.thinkstockfootage.com				•	
Third Coast Music	www.third-coast-music.com	•				
Third Millennium Films, Inc.	www.thirdmillenniumfilms.net					•

iStockphoto not only offers video, music, and photos, but also has illustrations and flash animations. The illustrations are vector-based with a wide selection from which to choose. The way iStockphoto works is when you sign in, you simply buy iStock credits from their secure page. These iStock credits are the currency you use to make purchases at iStockphoto. Credits cost as few as 24 cents. They can be purchased either in bulk or in subscriptions. The stock media is organized into broad categories with regular featured collections and pages of media.

Premiumbeat.com, like NEO Sounds, is another stock company that offers royalty-free music and sound effects. It is owned by a father and son team who claim to hand-pick their collection of stock music, preferring to work with only a select few musicians and composers. All of their music is 100 percent legal copyright clear. All music on their website is exclusive, and you will not find it anywhere else. They have added music players to

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Company	Website	Music Libraries	Sound FX Libraries	Music Creation Software	Stock Video / Photos	Stock Animations
Thought Equity Motion, Inc.	www.thoughtequity.com				•	
Time Image	www.timeimage.com				•	
TriLab Productions	www.animationsforvideo.com					•
TriLab Productions	www.animationsforvideo.com					•
Triple Scoop Music	www.triplescoopmusic.com	•				
Tunepresto	www.tunepresto.com	•				
Twisted Media, Inc.	www.twistedtracks.com	•	•			
U&I Software LLC.	www.uisoftware.com			•		•
Ultimate Chase	www.ultimatechase.com				•	
UniqueTracks Inc.	www.uniquetracks.com	•	•		•	•
USM	www.unlimitedstockmedia.com				•	•
Valentino	www.tvmusic.com	•	•			
VCE Films	www.vcefilms.com	•			•	•
Video Copilot	www.videocopilot.net	•			•	•
Videoblocks.com	www.videoblocks.com	•	•		•	•
VideoHelper	www.videohelper.com	•				
Videostockvault	www.videostockvault.com		•		•	•
Wavebreak Media	www.wavebreakmedia.com				•	•
Wavtracks Royalty Free Music	www.wavtracks.com	•				
Webtones Ltd	www.instantroyaltyfreemusic.com	•				
Whisper Audio Ltd.	www.whisperaudio.com	•	•			
Wilderness Video	www.wildernessvideo.com				•	
WorshipFilms	www.worshipfilms.com				•	•
WPA Film Library	www.wpafilmlibrary.com				•	
XStockvideo	www.xstockvideo.com				•	•

Compiled by Jackson Wong

their product line, which makes previewing clips easy. Their prices range from \$30 for short clips, loops or full-tracks to \$50 for the entire collection.

Time and Money Savers

All stock media, whether it's video, film, music, photos, or sound effects, is considered to be an enormous time and money saver by many of today's video creators. Not only do you not have to spend time putting together a crew, traveling, and securing gear, but you also save money. The money you'd spend paying a crew and on travel expenses far exceeds what you will pay to find stock footage. There are pros and cons to using stock footage, and in the end, which road to take is the decision of the filmmaker or video creator.

One thing you need to watch out for is the quality of your own footage compared to that of the stock media you purchase. Most stock media sites have high standards, and their footage will be pristine and high quality with proper exposure and good composition practices in place. If your footage isn't as good as theirs, it's going to be obvious so you might need to tweak both yours and the stock footage to match. But you're shooting the best quality footage anyway, right?

Taking the Easy Way Out?

There are those who say that using stock footage on your video productions instead of footage that you shoot yourself is taking the easy way out. This may be true. However it can be argued that it is also a smart move to use stock media, especially when you consider shooting all of it yourself which might prove to be too expensive or just downright impossible. Many filmmakers – novice and professional alike – are using stock footage to supplement their artistry and to add that special "feel" to their production that would otherwise not be available if it were not for stock footage.

Anything that can turn your video creation into a work of art that will leave a lasting impression on viewers' minds is worth the time and money. Whether that be stock media or your very own, it's the final result that counts. 📺

Teresa Echazabal is a freelance video editor, writer, and producer.

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2012 Holiday Shoppers' Video Wish List

BY MARK HOLDER

It's that time of year again. With visions of script lines and greater production value dancing through your head, the video professional or aspiring indie-great in your life dreams daily of their next camera or video-gizmo acquisition. What better time of year than now to make a few of those dreams come true.

What does one get for the video producer that has everything? Why, the latest and greatest of course. Innovation in the world of video is a never-ending beast and you can be sure that a plethora of new goodies has appeared on the market throughout the year. We'll take a look at some of the newcomers, and a few of the oldies that are sure to put a smile on your favorite video producer's face. We'll have a look also, at a few items that are especially well suited for stuffing those eagerly awaiting stockings hanging from the mantel.

Camera

Of course, the foundation of all video capture is a camera of some sort. And, while it probably wouldn't be prudent to surprise your loved one with a major camera purchase without first knowing exactly what his or her needs are beforehand, there are a few video capture devices that no video enthusiast could possibly be disappointed with.

For oodles of production value, a small, action sports-oriented camera such as **GoPro's** HD HERO2 or the Contour series from **Contour Inc.** will serve nicely. These cameras can be attached to just about anything and anywhere, for some extremely interesting shots you just can't get with other cameras. Attach one to a motorcycle or race car for exciting action shots and heart pounding speed, or to your favorite remote control flying machine for awesome aerials, or float it overhead with controlled bundles of helium balloons. The sky is the



Contour Inc. Contour+

limit, with your imagination the only limitation. For the less mobile, the Live! Cam Connect HD webcam by **Creative Technology**, is Skype-certified with its own onboard video processor and built-in noise canceling microphone for smooth, 720p, full-screen HD quality video chats. For about 50 bucks more, the **Logitech** HD Pro Webcam C920 lets you Skype in full HD 1080p HD quality.

Support

Larger cameras are great for handheld shots up to a point but can get a little wearisome over time, so a little added support is in order. The **Tamrac** TR404 ZipShot Mini Tripod supports camera and accessories up to three pounds and sets up in a snap. Constructed with aluminum legs and shock cords, it is similar to modern tent poles, the ZipShot Mini goes up to a maximum height of 28-inches and folds down to a very compact nine. The Sniper 1080 KS from **Camtrol** uses three variable locking ball joints to achieve a high degree of versatility and converts quickly for high, medium or low-level shooting.

VariZoom and **Cinevate** have numerous options for DSLR users, from simple handheld rigs to full-on pro rigs complete with matte box and follow focus. Not willing to leave any video device behind, the SlingShot, by **WOXOM**, is designed to add stability to any smartphone. With a ball mount adjustment and a pair of legs that fold out of the handle, the SlingShot functions as a tabletop tripod. In addition, the cradle unscrews and attaches to any standard tripod for complete stability. For those larger, heavier camcorders,

remember to check out the more traditional, fluid head equipped tripods by **Manfrotto**.

If your video enthusiast is ready to move beyond the typical panning and tilting moves, the AIRjib by **indiSYSTEM** is an affordable, highly portable jib arm, that is easy to set up for capturing those awesome boom shots. Great for bringing to remote locations, the AIRjib has an attachment for using two-liter bottles for counter weights. For slightly different moves, **Cinevate's** Atlas 10 is an easy to set up slider dolly, with ball bearing tracking and counter balance system, which lets you achieve smooth moves both horizontally and vertically.

How's It Sound?

With the sad state of small camera audio affairs, it's little wonder that most camcorders and DSLRs need help in the sound department. Digital audio field recorders such as the **Roland Corporation** R-26 fill the gap very nicely. With three stereo mics, the R-26 can record as many as six channels of excellent quality audio to SD/SDHC media cards. XLR/



LEDZ BRUTE 3



WOXOM SlingShot

STOCKING STUFFERS

There are many odds-and-ends that can make a video producer's life miserable to be without. Larger stockings may be required for some items, but receiving a few of these stocking stuffers is guaranteed to make your loved one's holiday.

ADAPTERS - What do you do when you go to plug into a venue's mixing board, only to find that the only port available is for a connector you don't have? You "adapt" of course. You can never have too many, or too varied a collection of cable adapters. The Premium Audio Adapter Kit from the **Comprehensive Cable and Connectivity Company** provides a pair of pretty much all the currently used audio adapters in a sturdy plastic storage case with individual compartments.

BAGS - Whether you are protecting your expensive camera or packing around an assortment of miscellany, bags are an essential component of the video production process. Check out **Petrol Bags** and **Case Logic** for a variety of bags and **Pelican** for heavy-duty travel cases, some even with extendable handles and wheels.

BATTERIES - Extra batteries are always welcome. See **Best Buy** and **Batteries Plus** for all your audio and video battery needs.

CABLES - Check out **B&H**, **Abe's of Maine** and **Videoguys** for every type of cable imaginable for any audio and video cabling need.

C-STANDS - A great stocking stuffer for the Jolly Green Giant perhaps, C-Stands can be invaluable both on set and on location. The **Impact Studio Lighting Master Century C-Stand** kit with 42-inch riser, grip head and arm is a valuable, heavy-duty, quality stand for safely mounting lights, diffusion panels and anything else you desire.

GAFFER'S TAPE - Essential to the video producer in so many ways, gaffer's tape is always appreciated. Check out **Shurtape** and **Scapa** for a variety of grades and colors.

GELS - Used for matching color temperatures, or color effects, gels are an important part of any video enthusiast's lighting kit. Check out **Rosco** for a variety of colors and color temperatures in single-sheets, rolls and multi-paks.

GLOVES - Safety is of the utmost importance on the set and a good pair of gloves is essential to those handling hot tungsten lights. See **Markertek** online or even your local hardware store for this essential item.

GREEN SCREEN - Who doesn't love special effects and being able to create them? **TubeTape** has an assortment of chromakey green backdrops and stands, flexible pop up screens and even chromakey suits.

LENS FILTERS - Filters protect the camera's expensive lens, reduce glare, enhance sunsets, create effects, and **Tiffen** has them all, individually or in sets, as well as nicely padded pouches to keep them safe.

MEDIA - Always be sure to have plenty of media on hand. The last thing your loved one needs is to run out of recording space while shooting that next wedding. **SanDisk** makes a card for every need, in various speed ratings and with capacities up to 128GB.

NLE CONTROLLER - The ShuttlePRO v2 multimedia controller from **Contour Design** works with most nonlinear editing systems and features 15 fully customizable buttons for accessing the editing commands you use most. The jog/shuttle control knob gives you frame-by-frame control during editing.

TIES - A bunch of cables in a box becomes a tangled mess in a hurry. Hook and loop fasteners from **Rip-Tie** make quick work of the mess and keep everything nice and tidy.



Zacuto Z-Finder EVF Pro

TRS combo inputs, with phantom power, allow you to plug in professional external mics as well. For the more budget minded, the H1 Handy Recorder from **Zoom**

employs an X/Y stereo mic to record fabulous sound to micro SD/SDHC cards. For professional XLR shotgun mics, browse the offerings of companies like **Sennheiser**, **Azden** and **Rode** for a broad array of options and pricing.

To get your mic off the camera and close to your talent check out **K-TEK's** KE-89CC Avalon Series aluminum boom pole with internal coiled XLR cable. It's sturdy, lightweight and extends to heights greater than seven feet to get your mic right where you want it. Alternatively, you might consider the PG2, pistol grip shock mount, by **RØDE Microphones**. Use it handheld or attach it to a boom pole to suppress handling noise.

For studio recording, podcasting, or to record voice overs directly into your editing timeline, check out the ATR2100-USB mic from **Audio-Technica**. With USB connectivity, wide frequency response and dynamic range, the ATR2100-USB delivers. And, don't forget to use a pop filter whenever the talent is up close and personal with the mic. The **Shure** PS-6 pop filter uses a 6-inch, 4-layer screen, to tame those pesky plosives and comes with an adjustable gooseneck and mic stand clamp.

Be sure to monitor the audio also, as it's being recorded, in order to catch potential problems. The **Sony** MDR-7506 professional headphones are ideal for this work and are invaluable for monitoring audio in the field. Low impedance and an around-the-ear design provides plenty of volume while cutting out potentially distracting background noises. A pair of quality speakers next to the computer is essential for hearing them just as the audience will and allow you to get a good read on edits. The AV 40 Active 2-Way desktop monitor speakers, from **M-Audio**, deliver high-quality audio with 15W of power to each channel. A number of inputs ensure compatibility with a variety of devices.



RØDE Microphones PG2

How's It Look?

Many of today's smaller cameras are capable of capturing superb video but fail to provide proper display and monitoring capabilities. They are often too small, too exposed to glare and lack professional focusing and exposure control features. The Z-Finder EVF Pro by **Zacuto** provides a great solution to these problems for DSLR users. It's a 3.2-inch high-res monitor used in conjunction with a 2.5x optical viewfinder and light-excluding eyecup. It features two-level Zebras for exposure assistance as well as peaking and pixel-to-pixel zoom for precise focusing.

External monitors from **Marshall Electronics** and **ikan** can mount to the camera's accessory shoe for larger display areas and access to many professional features. The MR7 from **ikan** provides 7-inches of viewing area, a series of SDI and HDMI connectors, and waveform monitor, RGB parade

and vectorscope for achieving proper exposures, colors and white balance.

Back at the edit bay, it is essential that your monitor deliver accurate colors for optimal results. The **Datacolor Spyder4Express** is an easy-to-use calibration tool. Its full-spectrum, 7-color sensor accurately calibrates desktops, laptops, iPads and iPhones to ensure that your colors are true-to-life.

Light It Up!

Supremely important to great video is proper lighting. For budget lighting, tungsten can't be beat. Bright and powerful, tungsten lights deliver the greatest amount of light intensity for the least cost. **Lowel's** Omni Light is an affordable, focusable light that allows you to adjust the beam from spot to flood and is available in a number of output ratings. Their DV Creator 44 is a versatile, 4-light kit, complete with stands, softbox, umbrella, flags, gels, rolling hard case and more.

Roland Corporation R-26



Companies like **Tokina**, **Kino Flo** and **Videssence** produce individual lights, as well as full kits, using fluorescent tubes and the smaller CFLs (compact fluorescent lamps) for a softer, more pleasing, wrap-around light source.

Currently, the "hot" topic in lighting is LED, or light-emitting diode based, lights. These lights are daylight balanced, use very little power and remain cool to the touch, even after hours of continuous use. The BRUTE

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1-800-600-2011
www.Glidecam.com

Camera Gear, Tripod and Tripod Head not included

Holiday Shoppers' Video List Wish



3 by **LEDZ** is a powerful, portable light source, powered using AC or battery power and weighing in at less than a pound. With a 5500K color temperature and onboard dimmer the BRUTE 3 can be stand or camera-mounted or handheld. For a full kit, check out the **Litepanels** Sola ENG Flight Kit. Get ready for a variety of lighting scenarios, this kit packs Sola ENG LED Fresnel lights, stands, barn doors, gels, ball head shoe mounts, all in sets of three, along with a softbox and more, into a Pelican case with custom foam interior.

While LEDs are typically daylight balanced, the MicroBeam 512 and 1024 lights from **FloLight** may be configured into kits with your choice of color temperature, daylight (5600K) or tungsten (3200K). Those with deeper pockets may want to opt for LED lighting with variable color temperature control such as **ikan's** IB1000 Dual-Color LED Studio Light or **Litepanel's** 1X1 Bi-Color. For all sorts of creative soft lighting options, check out **Chimera** and their Video PRO Lightbanks diffusion systems as well.

Storage

Now that all those awesome video and audio assets have been captured, a place is needed to store your video projects. **Seagate's** Barracuda XT 3TB hard drive is a great internal drive solution with loads of space and fast read/write speeds (156MB/s). If your loved one has a need for speed (and you have the bank account to back it up), solid-state drives are the way to go. **Verbatim's** SATA III model stores up to 480GB with blistering fast speeds in the 500s of MB/s. For affordable, portable, massive storage capacity, check out the My Passport 2TB portable hard drive from **Western Digital**. It's powered at both USB 2.0 and 3.0 speeds directly through the cable.

For redundancy and safety from the event of hard drive failure, you may wish to check out a RAID system (Redundant Array of Independent Disks). RAID's employ multiple disks and protocols to create data redundancy, larger capacities, improve speeds or some combination of these. **G-Technology's** G-SPEED Q uses four hard drives and is configurable up to 12TB. High-speed connections include eSATA, FireWire 400/800 and USB 2.0. Both RAID 0 for maximum speed and RAID 5 for maximum data protection are supported.

Not wishing to leave out the growing number of portable device users, **Kingston** has developed

Primera Bravo 4102 Disc Publisher



the Wi-Drive to provide as much as 64GB of portable, wireless storage, for the iPhone, iPad, iPod touch, Android devices, Kindle Fire and more. It also lets you share your creations with three other users on their own mobile devices simultaneously. How cool is that?

Distribution

Now that production is complete, how is it going to get out there for others to enjoy? If optical disc is your preferred distribution method and only a few copies will be made here and there, then any computer's DVD burner will suffice. If they are to be cranked out in larger numbers though, you'll want to consider a disc duplicator. The Bravo 4102 Blu Disc Publisher from **Primera**, burns, and beautifully labels, up to 100 CDs, DVDs or Blu-ray discs at a time. For even greater capacity (without labeling), the **Vinpower** Digital Aero VI Robotic Autoloader Duplicator employs a stack of six burners to crank out up to 600 CDs, DVDs or Blu-rays. Whether using a single master or multiple masters you simply load up the discs, set your preferences and return later to find your discs ready for labeling, packaging and delivery. If you only have an occasional need for large volumes of duplicated discs, there are online companies such as **Disc Makers** that will do the job. Send them the media files and artwork and they'll send you back beautifully labeled, perfectly duplicated discs, already in their individual cases, complete with shrinkwrap!

This list, of course, just touches the surface of all the gear a video producer should have or wants to have, and it seems like there's never enough – we always want more. So check the **Videomaker** buyer's guides and our past reviews for the best video products to get your productions done! 📺

Contributing editor Mark Holder is a video producer and trainer.



For comments, email: editor@videomaker.com, use article #15418 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15418

A compilation of all the stories that appeared in **Videomaker** 2012. The article # listed coincides with the reference number on the **Videomaker** website. You can find the article online by adding the # to this URL: www.videomaker.com/article/_____

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by Kyle Cassidy

Sports Video

Shooting sports video is as exciting as the event, but each sport or venue calls for a different approach. Shooting for one player or one team can also change your focus.



Last year my friend Lorraine phoned to say that I should fly out and see her roller derby team play. I'd never done any sports videography and this seemed like a good chance to learn.

I packed up a DSLR and a couple of lenses and headed out. The action was furious as skaters circled the track, knocking one another down and it was incredibly difficult to keep up. The skaters were either too far away or right on top of me, and it all happened in a split second. On top of that, the lighting was horrible. My resulting video was understandably unremarkable.

Trying to figure out where I might have gone wrong, I talked to Dave Wruck, the videographer and co-producer of *Derby Baby* an indie documentary about the sport which came out in 2012, about his gear, his shooting style and how to capture sports on video.

Gear

When it comes to gear for shooting sports you typically want something with a long telephoto range and a wide aperture that will let in lots of light. Games like baseball, football, and soccer can have action taking place dozens of yards away from you. Roller derby's a bit different, the players can get right up in the audience, in fact, the areas closest to the track are called "suicide seating" because you may end up with a couple of players crashing into you.

When it came to sports video equipment Dave Wruck maintained a really simple kit while shooting his movie "I used a Panasonic HVX200, with the stock lens on it – the reason it didn't

evolve is that roller derby is really hard to shoot. I spent two or three or four games just trying to figure out what to shoot, so it was a lot of trial and error for a long time – the action is always moving all the time and the little Leica lens on the [HVX200] was forgiving when you were trying to figure out what was going on.

"As we went along I would talk with the various camera guys that were involved in roller derby because there are millions of them and they all had their different ways of doing stuff and even the broadcast people were saying 'we're still trying to figure out how to shoot this sport.' and most of the broadcasters were also shooting the [HVX200] and I figured 'if it's good enough for them and they're getting stuff, then it's good enough for me.' Another good thing about that camera is we ended up going out of the country many many times and on an airplane weight is everything and that [HVX] is a lot lighter because I didn't have to bring a lot of glass with me, so that made a huge difference."

Keeping an eye on what the pro sports television productions are using can give you a really good idea of what's needed to capture the game

properly. But if you don't have the equipment, you can still find plenty of things to capture – think of the capabilities of your gear and how you can best tell a story with what you have. If you don't have any long lenses, for instance, maybe you want to do interviews with players instead.

Also, keep in mind that there is no list of definitive gear – the equipment that's perfect for pro football isn't necessarily what a videographer would use to shoot snowboarding or surfing.

Types of Sports Videography

There are lots of different reasons for shooting sports; stock footage, documentary, news, broadcast and analysis by the team are just a few. These all fall into two categories, the first being records of the game, a video that shows, from beginning to end, how the game was played – this type can be viewed by people who can't physically be at the game or to be reviewed by someone after the game. The second type is focused not on portraying an exact record of the event, but either highlights or a mood instead, and the requirements are different for both.

But what if you do want to capture all the action? Getting up high is a good

idea, that way players and fans aren't obstacles and you have good coverage – nearly all professional sports have multiple cameras up high for an overview of the field. The down side of this is that with an overview, it's hard to get in close on the action and capture details. While you can stick a camera at the top of the bleachers and let it run for the duration of the game, to make it interesting, you'll want more cameras.

The "anchor" camera in most sporting events sits at mid field, up high and moves back and forth with the action (if it's a sport with the ball, typically this camera follows the ball).

Secondary cameras are usually given specific areas to cover, often in fixed positions but sometimes also handheld. If you've watched a professional football game you've seen sports videographers with shoulder mounted cameras right up on the sideline action. You couldn't cover the whole game from here, but cutting away to a sideline camera that is right up on the action can show much more detail than simply relying on the anchor camera. In a production like this you want to make sure that the cameras are always rolling on the action, if a play is happening, you need to be covering it.

Shooting Documentary Style

In making the documentary *Derby Baby*, Wruck wasn't really concerned with creating a record of what happened. "My primary concern is not the overall picture," he says, "and I know that sounds funny, but I'm not interested in the game because my documentary was about giving information to people who don't know about the sport – so I didn't really care which teams were playing, for me it was getting really personal with something there, whether it was a referee, an audience member or one of the skaters. Those first few times I went and shot a game that's what I was trying to figure out because there was so much to shoot, and I had to do this with one camera because we couldn't afford to

have six cameras every time and actually capture all the action."

Every professional videographer knows the importance of B-roll – shots away from the action that can be used as cutaways and to cover edits. Be sure

to get them for your sports shooting as well – closeups of team logos, players working out or chatting with one another or fans before the game, autograph signings – all these things can help set the mood of your piece. ▶▶

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by John McCabe

For this type of shooting you can spend time close to the field, tight in on the action and some time up high or further back – you can spend time photographing fans, the concession stands, the parking lot – the goal is to capture the essence of the game rather than the events of a game. Shoot a lot, pick the best bits.

Stay in Front of the Action

Most sports involve motion in two directions across a field – this is true in games like football, basketball, and hockey and many track and field events. In order to get the most interesting video, you need to be in a position where the action is coming towards you because you want to capture the faces of the athletes, not their backs. When shooting football this means picking up your camera and moving every play if you're shooting from the sidelines, so you're always in front of the ball. In a game

like basketball where the action is fast, it means that in order to get the best views, you'll need to shoot with two cameras on the at the athlete's level. Typically, most coverage of sports like these means using three cameras – two on the playing field and a third in the stands covering the entire action.

The 180-Degree Rule

For games that have specific sides that are important to scoring – football, soccer, tennis, the videographer needs to make sure that action is shot from the same side of the field. If you shoot a quarterback throwing a ball from right to left and then switch to a camera on the other side of the field to show his teammate catching it, the ball is suddenly traveling left to right and it will look like an interception. Not breaking the 180-degree rule helps your viewers understand who's on which team and which way the ball is going.



Watch sports on TV. Take notice of camera placement, editing techniques and overall feel of the event. Doing this will help in your own success.

Editing

Sports video editing can be some of the most difficult to do – matching fast action at precise moments calls for single frame accuracy. While most conventional sports movies and documentaries are edited with ordinary editing equipment, you may be surprised to discover that there is specific sports editing software made by companies like Hudl and CompuSports, Inc. Most of these have powerful indexing systems that allow footage to be coded with metadata and then used by coaches to help players improve, manage large archives of footage and even quickly produce a players greatest highlights to send to scouts.

Your Homework

Watch sporting events on television with a critical eye towards deconstructing their setup. Where are the cameras placed? How frequently do they cut? Do they use more wide angles than telephotos? Are the cameras handheld or is there a support device? Whether you're shooting an old sport like soccer or baseball, or something like motocross, wakeboarding, or Ultimate Frisbee, find other videographers who have been working on it and learn from them.

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

For comments, email: editor@videomaker.com, use article #15392 in the subject line. You can comment and rate this article by going online: www.videomaker.com/article/15392



Chippewa Valley Roller Girls' jammer Jenetic Defect skates her way to victory in both dramatic (left) and flat (right) lighting. About these photos, writer/photographer Kyle Cassidy says, "I added two bright, focused lights up and shining down that overpowered the room lights and made things more dramatic. I also lowered my camera angle which means you get less of the overall scene, but the action you get is more interesting."

IF YOU NEED SOMETHING, ASK

When *Derby Baby* was filming, the producers specifically chose teams that played in professional arenas that could afford to hire lighting companies. This assured them that their footage would be dramatic and well lit. It dawned on me that if some teams hired lighting companies, then maybe the team I was shooting would let me light the arena specifically for my video. I asked. They mulled it over a bit and said "sure." I used a series of heavy back lights for a pronounced rim and a slightly dimmer fill around the corners to darken the spectators and bring out the players.

Remember that with smaller sports teams you have a symbiotic relationship – they want to see themselves looking good and you want good video. If there's something that can make your video better – a roped off area, access to a place in the venue, permission to put a tiny little camera on the pitcher's mound, it never hurts to ask, if they look good, you look good.

To find out more about Dave Wruck's film *Derby Baby* check out www.derbybabythefilm.com

Photos by Kyle Cassidy

Stock Footage - Selling it!

Making videos. It's a wonderful pastime and offers you a creative career. It's something that you love to do; it's why you subscribe to *Videomaker* magazine and read it.



Life is happening everywhere and there are people who need footage of it. Stock footage is a very lucrative industry and the Internet has made it possible for everyone to partake in the creation – and sale – of stock footage.

What is stock footage?

Stock footage is video clips that are shot by professional and amateur videographers to be sold to others who are in need of footage. Let's say, for example, that a producer in Los Angeles is filming a television show that is set in Philadelphia. Does she fly out a crew and all their gear to Philly to get an establishing shot of the city, shots of Pat's King of Steaks and Geno's Steaks, and the Rocky statue? Or would it be easier for her to purchase a few royalty-free clips from an established stock footage company? Considering that the cost for purchasing the stock footage will almost certainly be less than the price of just one round-trip ticket across the country, the easy answer is to buy the footage. Remember this: movie, TV and video producers are looking for footage that they cannot easily and inexpensively produced in their own neighborhood or studio.

How can I get into selling stock video?

The first step is to do your research. Check out the Stock Footage Buyer's Guide on page 32 in this issue for stock footage companies. Look through the websites of these companies to see which ones are a good fit for you. Yes,

that was plural because another benefit to selling stock is that very few of these content companies demand exclusivity. You can sell the same footage through dozens of websites concurrently!

Once you have set your sights on a potential partner, check with the company as to what file formats they accept and try to find out what types of footage they are looking for. In many cases, the websites send emails to their registered users to let them know what content they need. Registering on websites is usually free, but it's not always simple. The companies that will be selling your video footage want to know that they are contracting with someone who is competent

and has equipment that meets their standards. Oftentimes, the companies will ask you to provide a reel or a link to your work. If this is the case, then you should put footage together before signing up, so that you are able to supply them with the necessary information when they request it; you can build a portfolio while generating marketable content.

You will also need to know the length of the clips they're looking for. For instance, Joel Holland of *Video Blocks* states that his company accepts clips between 10 and 20 seconds long, with a preference between 12 and 15 seconds, whereas iStockphoto will accept clips as short as five seconds,



Covered bridges aren't just in Iowa's Madison County, but they're rare and a perfect example of something you might have in your area that someone else will pay to use. Getting multiple angles gives your users more options and gives you more possible revenue from the photo shoot.

or as long as 30 seconds with the preference toward the longer end of the spectrum.

What footage can I sell?

The content supply companies are looking for many types of footage, but the key word is *unique*. While most sites will allow you to place footage of running streams or waves breaking over the ocean, these are timeless shots and they already have plenty of them. Therefore, these common shots are far less likely to sell. Jim Goertz of *iStockphoto* explains that his company is focused on “scenes with fresh people doing natural activities in our current world” and he finds that they are always in demand. As the world changes, this type of material will always need to be refreshed.

But what if you live in an odd, remote area? Even better! Holland says that Video Blocks has content producers in “over 250 countries” and their biggest focus at the moment is the Middle East. Remember, the goal is to provide content for those who are unable to attain it on their own. So if you have footage of the Sphinx and the Great Pyramid – or icebergs in the Arctic Circle, you may have something that someone else is willing to pay good money for. Experiment with angles and positions, and always remember that a potential client could be looking for anything; you can’t read their minds.

If you have access to events in your area, such as concerts and sports, you can create clips from them to send to content providers. Who knows? There could be someone who needs footage of a nondescript soccer game or tennis match (but, as always, be aware of copyrighted logos and identifiable shots of minors). Shots of people are also sought-after, but generally in group settings. If you focus in on someone and they can be distinguished, there could be legal issues down the road, so keep the shots wide unless you obtain a written release from them.

Can I still make money on footage from my old SD camera?

In a word: no. The time for standard definition footage has run its course and nobody’s looking to purchase it any more, unless it has some historical or unique value. That said, some of the old footage that you’ve been saving since 1981 can be valuable. Holland mentioned that Video Blocks recently purchased footage from the Apollo missions. Companies such as FootageLand and Historic Films specialize in antiquities. Therefore, if you have older stock available and it can’t be reproduced today, then it may be a good idea for you to see if you can sell it.

High definition video is the minimum standard for all supply companies and many are looking for a minimum resolution of 1920x1080. The number of outlets that will accept lower resolution footage is dwindling. Goertz states that many of the suppliers for *iStockphoto* have taken to DSLRs due to their ability to “shoot stills and video on the same set and at the same time.” This is advantageous to the videographer because many of these companies sell both stock photos and video. By using DSLRs to shoot both with a single camera, the content provider is maximizing his or her potential income.

And just how big is that potential? That is a question that can best be answered with a question: How much do you plan to put into it? Daniel Hurst of *Morgan Lane Studios*, who works full-time as a content supplier, says that “you really get out of it what you put into it. It is not easy money or a get-rich-quick scheme, it takes a lot of hard work and investment to make a decent return. Competition in the stock video market has dramatically increased over the last few years.” Daniel and his partner, Luke Miller take their jobs seriously and have invested in some excellent equipment including: RED EPIC-X and RED EPIC-M, Phantom HD GOLD (high speed camera), and Cineflex V14 (aerial camera sys-

tem). However, unless you’re already a licensed pilot, it’s probably not best to start off with aerial footage.

How do I get my footage to the content aggregators?

Each content company has its own policies and you will need to research that when you do your due diligence in finding companies to work with. Most of them offer file transfer protocol (FTP) service so that you can transfer large files. Video Blocks offers this or they will accept information on hard drives (and they will pay for the drive, plus the postage). There are other companies that don’t offer FTP, but will assist you with getting your videos uploaded to their site.

What will it cost me to advertise my footage?

Time. You can advertise your footage the same way that you can advertise mostly anything else these days. Through a website, a blog, a Facebook page, Twitter, Vimeo, YouTube, etc. But here’s the best part: You don’t even have to. Hurst says that he leaves that up to *iStock*, allowing them to drive the business to his work.

Is there another way for me to make money with stock media?

Photography and sound effects are both ways that you can make money with stock footage companies. In fact, Video Blocks’ Holland says that “our biggest growth areas right now are royalty-free production music, Adobe After Effects and motion backgrounds.” If you look around, you will see that there are many ways to make money in stock footage; be creative and it will pay off for you.

Do I need to record sound when I create stock footage?

The content distributors prefer that you create clips without sound, unless sound is integral to creating the clip. If you must use sound, *iStock* makes the following recommendations:

- If there are voices in the soundtrack, then those voices must be released.

- There should not be any off-camera voices (such as director’s comments).
- If sound is included, it should be recorded at proper levels without clipping or wind distortion.
- No music should be included, even if it was just playing in the background.

How much money are we talking about?

Holland says that Video Blocks purchases its footage outright. The minimum purchase is 150 clips (although they prefer much more) and purchase prices begin at \$5,000. Since this is non-exclusive, those same clips can be sold to other content providers as well.

Most providers pay their contributors a percentage of their sales. For instance, a video producer whose work is on *iStock* will make 15-20 percent of the sale price of their material if they are a non-exclusive provider.

If that provider is working exclusively with them, the royalty becomes 45 percent of the sales. The advantage with this business model is that a content producer can theoretically get paid in perpetuity for the same clip, and clips can be downloaded thousands of times.

The industry of stock video footage is young and it is growing; there is room for you if you are serious. And if you are serious, you will do your homework. Study the needs of the footage companies and ask questions.

If you want to make money with video, this is a great opportunity. But remember, don’t quit your day job – at least not until money starts coming in. You may begin by shooting footage on nights, early mornings and weekends and as the project begins to monetize itself, begin putting in more hours and investing more money into gear that

can improve your product. Prices for video footage range from a dollar to several hundred dollars. Depending on the deal that you strike with the aggregator, you could earn more than \$100 per clip (although that is certainly the exception). The best part is that in most cases, you’ll earn money on the clips that you shot for many years to come.

Most of the distributors that pay a percentage of the sale have a minimum dollar amount before they release funds to you. Goertz of *iStockphoto* explains, “Each time your file is downloaded, a record of the sale is attributed to your account. Once you have accumulated a minimum of \$100 in royalties, you can cash out using your PayPal or Moneybookers account or request a check. Contributors can request a payment once per week.”

Videomaker recently spoke with founder and CEO Kevin Schaff of

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by Terry O'Rourke

Using Scrimms and Reflectors

Videography is about capturing light. Light is your paint and the set is your palette. You can improve your paint job with quality paint brushes and good paint.



You wouldn't paint every fine art piece with a roller and broom, so why light all your scenes with 1000-watt tungstens or 4-foot florescent panels? Sometimes your scene requires a little finesse along with a gentle touch. Just as a master artist uses fine oils applied with natural brushes, a great videographer uses lighting to express his or her interpretation of light. One of the best ways to do this is with reflectors and scrims. Nature's wonderful light fixtures, the sun and the sky, can be unwieldy but when they're a part of your set, they bring enough power to allow you to use reflectors and scrims in nearly every situation.

No Power Source Needed

Film lighting techniques and lighting in photography rely on controlling the light. One can often diffuse light simply by using a softbox in the lighting design, but reflectors and scrims are wonderful because you don't need to power them. They can be cumbersome with their large size and light weight, however. They can catch the wind and become a huge sail flailing about, but once you overcome such issues and grow accustomed to the natural quality they offer, you will always appreciate the light they provide.

One of best features of reflective light is that it rarely overpowers your main light source because reflectors or scrims never increase the amount of light emitting from the original light source, they can only reflect it or diffuse it and usually there is some loss of efficiency. (We say "usually" because mirrors are almost 100 percent efficient and you can expect nearly the exact same amount of light reflected from them to be equal to the amount of original light source.) If you have adjusted your artificial lighting to provide just the right exposure and then bring in reflectors to supplement your lighting you won't need to worry about over-

exposing your scene because reflectors don't increase the amount of light. Just move the reflectors closer for more light or farther for less.

Further, if you have adjusted everything on a sun-lit scene and use scrims to soften the lighting all you need is to be sure they improve the lighting but the overall exposure should remain about the same. That's why they are frequently used as fill instead of a main light, it's easier to set up the lighting for the actual light source and modify that light to match your needs. But don't let that stop you from using reflectors as your main light because reflectors provide a very soft, natural quality that is otherwise time-consuming to create with artificial lights. A great example of reflective lighting would be to use a large white fabric as your main light and reflect the sun from that into your subject. Add another reflector just a bit farther away as your fill light and you have powerful, natural light without the harsh shadows of direct sunlight.

Manipulating Lifestyle Dynamics

The use of scrims in direct sunlight allows you to contain the dynamic range to a more manageable level to better match the capabilities of your

T3media, formerly Thought Equity Motion, regarding their new licensing program called Paya. This program runs on the same premise as a craigslist or eBay listing. You post it, you get 80 percent and Paya gets 20 percent of the proceeds. Paya allows everyone, from professional photographers and videographers to average consumers with iPhones and DSLRs to sell their work using social community reach and the speed of the Web.

Rights and Royalty-free

Video footage is almost entirely sold as royalty-free footage. What that means is that when a client purchases the footage, they are free to use it in any manner that they choose, for as long as they like, and in as many situations as they desire. It is theirs; they paid for it, and they are welcome to use it. In the photo industry, there is also a term called rights-managed. As opposed to royalty-free images, rights-managed ones come with heavy restrictions as to their use. Purchasers can generally use them only once and they sometimes come with limits as to how they are used in a commercial setting.

Money is not the only thing that you can earn from content creation. There is a real sense of community within the ranks of footage suppliers. As Daniel Hurst states, "one thing we never expected would be so great about working with iStock is the community of iStock staff and other stock shooters. We regularly stay in contact with other shooters, we have meetups - both official iStock events and just getting together on our own. Sometimes these meetups are to work together on shoots, and other times its just to share ideas and hang out. We've made some great friendships with people who live all over the world." ■

John McCabe is a video producer.

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camera and you can choose the density of the diffusion material and better match your lighting needs. Using our examples, **Image A** shows how a very sheer fabric renders the sunlight too contrasty. The lighting on the white topping reveals detail in the shadows but no detail in the highlights. **Image B** has better definition in both shadow and highlight areas while in **Image C** the light from the scrim is too soft which is great for an overcast look but the topping has almost no detail at all. As you can see the exposure is about the same for all these images. The amount of light is not changed much but the quality of light changes from contrasty, direct well-defined shadows to soft,

barely noticeable shadows.

When shooting lifestyle sets you are required to create natural lighting that would be appropriate to the environment. Scrim and reflectors are perfect for this because if used correctly they don't overpower the existing light. In **Image D** the natural light comes from a large window just to the left of the set. There is China Silk over the window which provides nice, controlled lighting with well defined shadows. Here is how the scene would render with that single light. It's a bit dull and the label is not well defined but the shadows are crisp and well defined. **Image E** shows how just one simple reflector from about two feet out and to the right of the set adds an amazing amount of light and renders the label beautifully without changing the overall look of the scene while still maintaining a natural look.

Reflecting Light

Some convenient reflectors use collapsible, spring loaded frames which also have clips to latch to custom accessories allowing you to attach your reflectors to standard light stands. Manufacturers like Impact Studio Lighting and Photoflex offer a variety of collapsible reflectors in highly reflective gold and silver surfaces which are perfect for reflecting sunlight coming from the sky or north-facing walls, and reflectors work well with florescent lighting indoors. Reflectors can make a scene too contrasty and create fake-looking lighting with too many speculars, however, if used in direct sunlight or raw lighting from non-diffused tungsten lights, that's where white reflectors come in because they aren't as efficient and are therefore more forgiving and provide softer, more predictable lighting.

Diffusing Light

Controlling studio lighting is easy compared to outdoor lighting and you'll find you must often diffuse the sunlight that hits your outdoor set. Scrim are great lighting accessories because they come in all sorts of "textures" ranging from very thin silks to very dense taffeta and even an old favorite of still photographers – architectural vellum. Just like reflectors, scrim never need to be plugged in. But also like reflectors, scrim can be quite cumbersome because they can become kites catching every breeze that comes along.

Unlike reflectors which can usually be held in place with an assistant or one light stand and a few clamps, scrim can be difficult for one person to hold steady and usually require at least

two stands. Hollywood studios use giant scrim on location to provide soft overhead lighting and network television crews frequently use overhead scrim on outdoor sets when covering events like parades or outdoor sporting events. They provide consistent lighting all day long and best of all they don't make noise, which can interfere with audio. These crews set up giant trusses and stands with hundreds of pounds of sandbags to hold everything together but on a small production all you need are a few stands with a couple sandbags or grips to hold them down and a frame to hold the scrim. Scrim Jim is an industry-wide favorite and the F.J. Westcott Co. makes a variety of textures to suit your needs. Their system is universal so all the fittings are interchangeable and the modular design allows you to grow with the system. They are available in sizes ranging from 42-inch square to 96-inch square and they have diffusion fabrics like 1/4-stop China Silk that provides natural hard sunlight while diffusing everything for fill light in the shadows.

DIY Scrim

You can also buy a denser fabric that provides full diffusion to create an overcast look from direct sunlight. Look for reflector material in silver, white and gold so you can use the system for both diffusing and reflecting the sunlight. You might acquire a few frames and get some fabrics from your local fabric store. One of our favorite fabrics is a synthetic material used to line draperies. It is sheer and matches China Silk closely, which allows just enough sunlight to give you a direct sun look but also diffuses it nicely so you get soft, flattering light. Add to that heavy taffeta and you have everything necessary for shooting in the sun.

Taffeta is great for reflecting direct and indirect light and it's thin enough to shoot light through, and all in one fabric. Take a trip to the local hardware store to get some electrical metallic tubing and a few fittings and you can make your own frames.



It's easy and the materials will cost you about a quarter of the price of a manufactured one or less. The nice thing about reflectors and scrim is they are only limited by your imagination and the advantage of creating your own kit from the hardware store is that you can try a variety of different fabrics and figure out which one best suit your needs.

Using diffusers and reflectors is all about control. Next time you see a beautifully lit scene and want to capture it completely, consider how diffusing or reflected the light can help. ▮

Terry O'Rourke specializes in retail advertising photography and videography for clients worldwide.



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by Michael Fitzer

The Current State of Codecs

There's much more to visual communication than simply slapping a series of shots together. With video, you need to think about the way you connect your shots.

In the February 2010 issue of *Video-maker*, we featured an article asking, *What is a CODEC?* Due to the subject's complexity the piece was only able to scratch the surface of a subject that to many, is a vast well of technical mumbo-jumbo. This article presents a codec "state of the union" as it were, a revisit of some of the basics as we dig just a bit deeper into this ever-growing topic. We'll explore the variety of codecs available within two distinct families, Apple ProRes and the MPEG family. We'll also look at effective media management through the use of these codecs, and more. Just know that this is a subject on which volumes can, have been and should be written. This article is simply meant to whet your appetite and answer some of those pesky questions you often have regarding which codec is right for you. However, before we get into

the details, let's revisit the definition of a codec.

What It Is

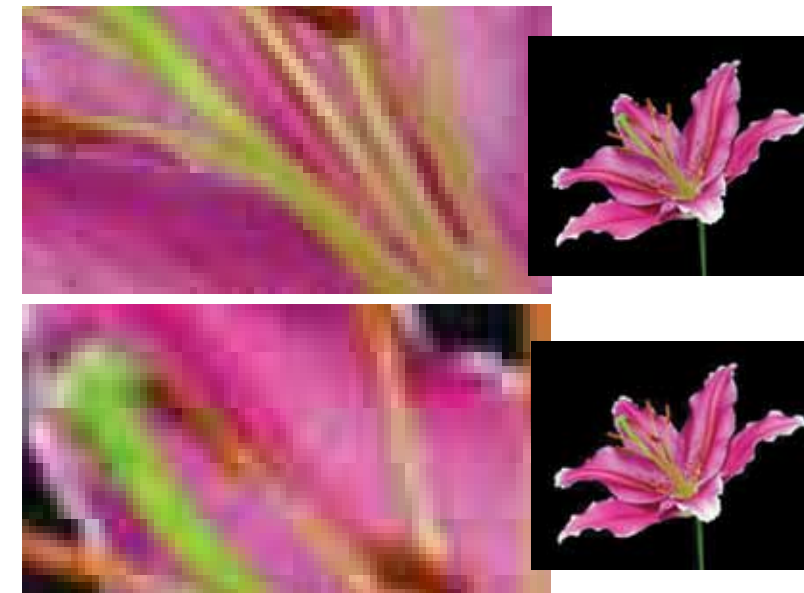
The word codec is really the combination of two words: *coder* and *decoder* which, by the way, is exactly what they're designed to do. Codecs simply encode and compress streams of data for storage or decompress streams of data for playback or editing. Because digital video represents a huge amount of data, codecs are an essential component of the modern

day process of video production, yet they're something that many of the most seasoned pros know little about. Let us shed a bit of light on the current state of codecs and how you can maximize their potential in your future productions.

Getting From There to Here:

Digital video begins its life in the form of a codec. You've probably heard the term "native" which is used to describe the format that your camera records to and stores the digital data. Sometimes however, the "native" compression is not optimal for editing, usually because the data is just too large or clunky for your computer to process at speeds necessary for a fluid workflow. Therefore, your media needs to be transcoded or compressed into a lower bit rate or one that conforms to your end user's viewing and listening needs. Bit rate refers to the number of bits of information that are processed during a specific unit of time. In video that unit of time is always determined in seconds, i.e. bps (bits per second) or Mb/s (megabits per second).

When you compress a file for later use you do so using lossless data com-



Lossless data compression [top] compared to lossy [bottom]. Observe the lily on the top and its closeup. The square pixels are so great in number that at a distance, the image is fine. Compare that to the same flower below. With less precise pixels, the same flower will lack the same beauty.

pression or lossy data compression. Lossless data compression means that you are reducing the size of the file by replacing a recurrent sequence of data with a symbol. Doing so means you can decompress that same file and restore it to its original state without the loss of the file's information or overall quality.

Lossy data compression permanently takes away some data, allowing the file to be reduced in size and unfortunately, quality. Think of a "pixilated" photo or a blocky video. That is "lossy" data compression and it does not allow for decompression. It's a bit like squeezing toothpaste from a tube, you can't put it back.

Now there are all sorts of applications available to compress your video and audio data for future use. Almost all editing software comes complete with compression tools enabling you to test out a variety of codecs. There are also a ton of tools available for download but most of them come at a cost. However, one popular transcoding tool that has gained in popularity and is offered for free is a tool called MPEG Streamclip (www.squared5.com) from Squared 5 srl. This is a robust tool with a seemingly

endless menu of settings for transcoding your data. MPEG Streamclip, by virtue of its price alone, is a great tool for testing various compression settings and seeing which ones work best for you, your devices and your end users.

The Most Common Codecs:

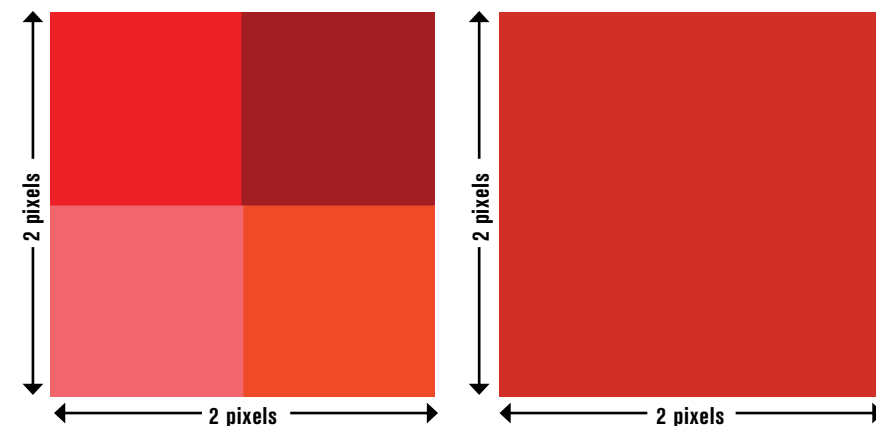
While the list of usable codecs is about as long as your arm, there are codecs that can be categorized as "most commonly used" among professionals and hobbyists alike. The following list outlines a couple of those codec families and some information detailing the specific applications of each.

ProRes Codecs:

When Apple decided to dive into the world of video and film post-production they developed a unique Apple umbrella codec with five different versions to suit almost any editor's specific needs.

- **Apple ProRes 4444**

For those wanting full resolution color mastering in RGBA (Red, Green, Blue, Alpha), the ProRes 4444 is a fantastic



Compressed data means that the tiny two-by-two square of the image on the left becomes averaged into the blocky image on the right, where it carries less detail.

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codec. ProRes 4444 slightly compresses the color channels but the difference is almost indistinguishable. This is also a great codec if you're working with alpha channels since it supports everything from SD to 4K resolution.

- **ProRes 422 (HQ) and ProRes 422** Both of these codecs work well with 1920x1080 60i video and handle a 4:2:2 or 4:2:0 color space respectively (no alpha channel) without difficulty. The major difference between the two is that (HQ) has a target data rate of close to 220 Mbps while regular ProRes 422 can only handle as much as 145 Mbps.

- **MPEG-2** is a full-frame compression at 720x480 – NTSC and 720x576 – PAL. It is a popular compression standard for DVD distribution rather than streaming via the Internet since it requires a high bit rate to maintain picture quality (somewhere between two and nine Mb/s).

Many encoders will allow you to adjust the bit rate to accommodate the amount of media you want to store or play on a DVD. For instance, if you're working with a 4.7GB DVD, an average bit rate of 3.5Mb/s would allow for close to 120 minutes of space whereas a higher bit rate of say, 6Mb/s would allow for around 80 minutes of play time.

- **ProRes 422 (LT) and ProRes 422 (Proxy)** If you're wanting to view video using the original acquisition frame rate, aspect ratio and frame size – (LT) and (Proxy) are suitable choices. The major difference between the two is in their data rate. Using ProRes 422 as the standard, (LT) is about 70 percent of the 422 data rate while (Proxy) is around 30 percent and geared for offline workflows. These compressions result in smaller file sizes and are considered good for work-in-progress files.

Most Final Cut Pro editors utilize the ProRes 422 (HQ) and the ProRes 422 because they're still able to maintain decent resolution and the 4:2:2 color space is actually closer to what the human eye is able to register. Therefore, the difference between 4:4:4 and 4:2:2, while technically large, is not so prominent with respect to how we see color.

The MPEG Family:

In that *What is a CODEC?* feature, we reviewed several compression schematics from the MPEG family, MPEG-1, MPEG-2, MPEG-4 or H.264 and so on. Each one is different and each has its own advantages and disadvantages. So, how do you know when to use which one ... and why?

- **MPEG-1** is a codec that is accepted across a variety of distribution channels, meaning, it is compatible with most hardware-based and software media players. Because it has a low bit rate compressing with MPEG-1 allows you to fill several hours of media on a DVD at fairly high quality.

- **MPEG-4**, also known as H.264 is a continually developing codec, especially with the advent of MPEG-4 Part 10 which provides four times the frame size at a given data rate as does MPEG-4 Part 2 which has blossomed in the world of Internet viewing. Because it uses a one-pass variable bit rate (VBR), MPEG-4 maximizes output for mobile devices such as laptops, smartphones and more.

Want to know more?

As stated near the beginning of this article, this is a topic on which volumes of information has been and will be written. There is so much to digest, understand, and explore that we can once again only scratch the surface.

No matter which codec you're using, we urge you to take time to test the ones that work best for your most common applications. Just like with anything in life, the more you explore, the more you practice, the more you utilize compression tools in your video, the more familiar you will become with their individual design and intent. **||**

Michael Fitzer is an Emmy award-winning commercial and documentary writer/producer.

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Bumps and Segues

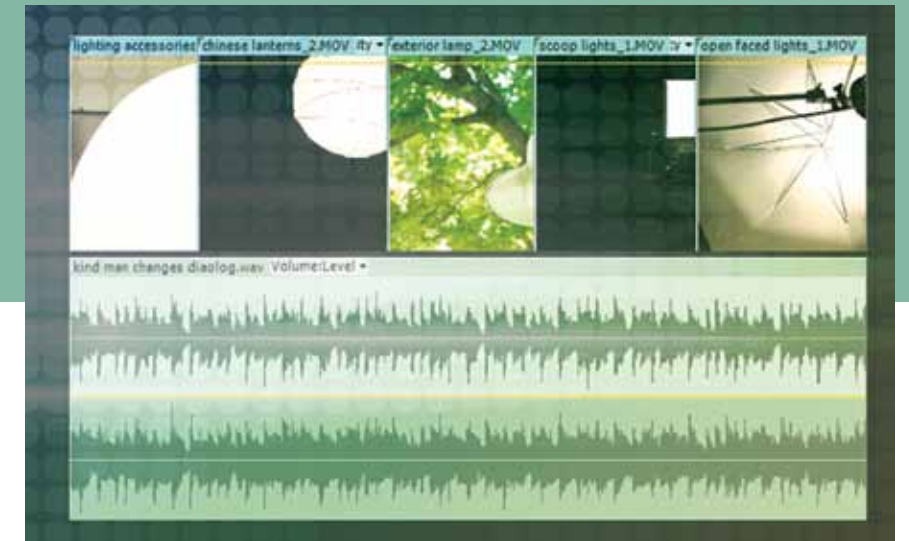
Music is the glue that holds your video projects together, but sometimes, a little something extra is necessary.

Grabbing a music track from your library or an Internet source is easy. Drag and drop it on the timeline, adjust the volume and – poof – perfect soundtrack. Well, maybe not perfect but functional. There are several ways to give your projects an extra kick, making them stand out against all the other muck on YouTube and in Corporate America. Using segues, bumps, sound effects and even self-created music, your audio production can rival that in recording studios. Of course, it helps to understand the fundamentals and applications, so here we go.

Segues

Segues have their roots in classical music. In general, it defines a smooth transition from one segment to another – or one song to another. In the dance club environment, you'd hear a segue as a crossfade between songs. In the hands of a professional disc jockey, the transition is seamless and you might not even notice when it happened.

In video production, a musical segue might occur when moving from one interview to another, from one location or scene to another or simply when one song runs out and you need to start another. To perform a segue in a video production, you'll need two pieces of music, ideally with a separate track for each. Roughly place the second track toward the end of the first and zoom in to view the waveforms. You should clearly see where the first track ends and whether it fades out or ends abruptly. You'll also see the beginning of the second track. The first



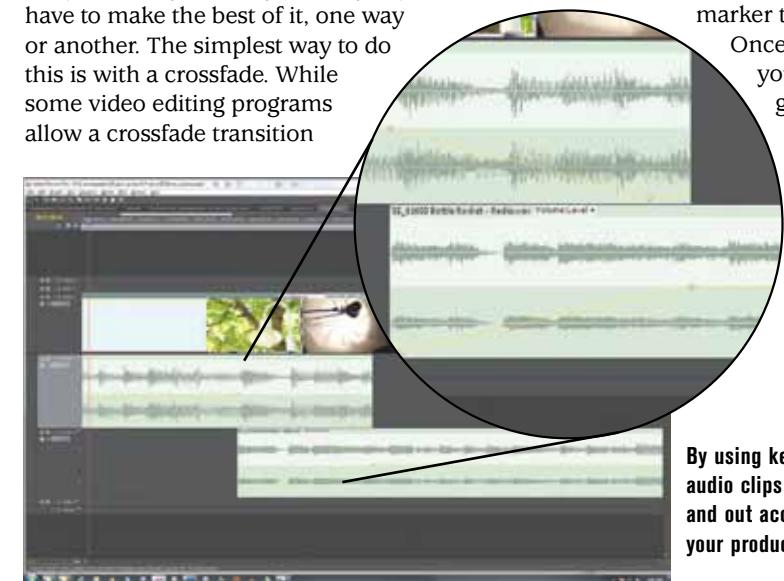
thing to do is find a place to do a clean segue. This could include a number of factors like musical tempo, volume, pace and simply how each track sounds.

In a perfect world, both tracks would be a similar tempo, the same musical compliment the other. Good luck with that. In the real world, clients sometimes pick the music, with no regard to how it fits the piece. In the real world, tempo and key never sync and you just have to make the best of it, one way or another. The simplest way to do this is with a crossfade. While some video editing programs allow a crossfade transition

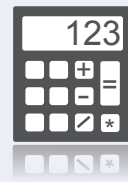
between audio tracks, others require you to do it manually, but that's easy too. Every editor is a little different, but in Adobe Premiere Pro, click on the audio track to select it and move the playback head to the point where you want to start crossfading. If you look to the panel on the left, you'll see a round dot, flanked by arrows. Click the dot to see a corresponding dot on the audio timeline. This is a keyframe marker.

Move to the end of your crossfade and place another keyframe marker there.

Once in place, you can grab the second



By using keyframes, audio clips can fade in and out according to your production.



CALCULATE FILE SIZE

At first, attempting to calculate a compressed file size is a

bit like asking you to look into a crystal ball. But rest assured – there's a formula for determining just how many bits or bytes your compression will be. You can calculate using either bits or bytes.

Here's just a bit of information to refresh your memory:

- Megabits processed per second may be written as Mb/s.
- kb/s is the abbreviation for kilobits per second
- There are eight bits (b) in a byte (B).
- There are 1,000 kilobytes in a megabyte, and a kilobyte is 1,000 bytes, so a megabyte is 1,000,000 bytes.

As for how to calculate length of a compressed file you can employ the following formula:

For bytes, employ this formula:
x = length of media (seconds)
y = bitrate (kilobits per second) x 8
z = resultant file size (kilobytes)

$$(x * y) / 8 = z$$

*NOTE: You divide the multiplied result of x times y by 8 since there are 8 bits in a byte.

Now, like all good adopters of the digital age, if you don't feel like doing the math ... use a calculator! You can calculate your file sizes by using a tool from [Digital Rebellion](http://DigitalRebellion.com), the video space calculator. It's a simple but extremely helpful tool.

Good and evil. It is very intuitive to an audience who the villain is, and much of that comes from the atmosphere created by music surrounding that character. You'll know when the Dark Lord has the upper hand by the music.



marker and drag it to the bottom of the audio track. This reduces the volume to 0dB. You'll also see a fade line connecting the two dots. This is your fade out. Do the same thing in reverse for the second track and you'll have a crossfade. Duration of the crossfade or segue will be determined by the music and you'll probably have to tweak it a couple of times to get it right.

This brings up another related topic called "backtiming." Coming from the broadcast world, backtiming is simply setting up a music track so that it will end when the video ends, rather than fading the track out at the end. It's simple to do in a video editor you can easily see when the video will end. Just slide the end of the music selection to the end of the visuals and you're done. Of course, that doesn't take care of the beginning of the music. There, you'll probably have to

do a segue, crossfade or a slow fade up using the techniques above.

Bumpers

Whether you call them bumpers, bumps, or buttons, it's all the same. This is a piece of music or sound effect that gets you into a video segment. Often, these are signature pieces that help identify a character or even a specific section of your production. For example, in the *Star Wars* universe, each main character has his or her own motif. You can easily tell when Princess Leia or Darth Vader is the central character of the scene. Another example is talk radio or television news. Whether going into the program or out to commercial, you hear bumper music and themed music for special segments. In each case, the bumper music is short and simply serves as a transition into or out of the main program.

But you don't have to use music. A signature sound effect would also do the trick, like the class bell used to bump from scene to scene in the television show *Glee*. Whatever path you take, bumpers are easy to insert. While you might have to do a simple fade-in or fade-out, for the most part, you

just place the clip on an audio track at the transition point and that's it.

DIY

Buyout music libraries are full of musical transition elements and there are several Internet sources today as well, but why not make your own? Using inexpensive – or even free – software and a little creativity, you can produce unique segues and bumpers for your projects. Your video gets something made specifically for it and you don't have to worry about copyright.

There used to be a time when you had to rent a recording studio, hire musicians and pay through the nose to create original music for a production. Now, we all have audio production studios inside our computers. And these aren't just for recording audio, they're full-blown music creation workstations. Products like ACID Music Studio, GarageBand, FL Studio and Sonicfire Pro transform music production by using short audio loops to build complete compositions. In addition, many of the major audio editing platforms now support multi-tracking with audio loops.

To begin, you'll need some software and some loops. Fortunately, that's the easy part. For Mac users, you may already have GarageBand on your computer. If not, the current version costs \$5 and it has everything you need. For Windows, a free version of ACID Xpress is available at www.acidplanet.com. While you're there, make sure you download an 8pack, a pre-built song

with all the loops included. You can also buy loop libraries just like buyout music when you need more variety.

To get started with loop production, try building a simple pop or rock-type song. Find a drum beat you like and put it on the first track, dragging it out for maybe eight repetitions. Next, find a bass sound – either guitar or synthesizer – that sounds good and put it on the second track, dragging the length to match your drums. For some instant gratification, push the play button to hear the music so far. You probably have a good, simple groove going by now, so experiment by adding more instruments on additional tracks. To create some variety, try leaving various elements out every two, four or eight repetitions, replacing them with others or simply leaving the hole.

Creating music with loop production software is a little addictive. Once you start, it's hard to stop. That's a bonus for your video creations since they can now have unique audio tracks made to fit. Plus, you'll have fun doing it. Just try anything and everything, whether it's "right" or not. You can always undo or even start over. Along the way, you'll find something worth exploring, saving and using in your next video project.

Bump It

With a few simple tricks and techniques, these audio elements can transform your video productions from everyday to extraordinary. Don't be afraid to try creating your own music, either. No music theory required to get started and results happen fast. Of course, if you have a musical background, you'll create even more complex arrangements just as quickly. Either way, leveraging the power of these musical pieces puts you a step ahead of the pack. **IV**

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

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WHAT'S LEGAL

producer's rights

by Mark Levy and Roman Zelichenko



Stunt Videos - Don't Try this at Home

In the MTV network show *Jackass*, a group of daredevils performed dangerous stunts and pranks that usually involved some form of injury to themselves or to other cast members. Though they clearly subjected themselves to pain, they were depicted as having incredible amounts of fun. It was only a matter of time before the stunts were copied by young viewers in uncontrolled environments without proper planning or protection, and many kids seriously hurt themselves or damaged property in attempts to re-create what they saw on TV. These activities may lead to serious injury and if you are hired to record such activities, it can also result in serious legal consequences to you as a videographer.

As far back as the beginning of broadcast TV, young children, after watching *Superman* episodes, donned red towels and leaped off steps or roofs, often landing in the emergency room later.

Rod Serling lamented writing the screenplay for the movie, *The Doomsday Flight* about an airplane skyjacker who demanded a cash ransom. After the movie aired on TV, a hijacker successfully duplicated the feat, using a parachute to escape with \$200,000 ransom.

Other examples of dangerous videos with injurious recreation potential are car commercials depicting drivers performing risky maneuvers. Though these maneuvers are intended to dramatically advertise a car's performance, individuals may actually attempt to re-create the type of driving shown in commercials. How can videographers protect themselves from liability from reckless viewers who try to blame them for airing their videos?

Disclaimers

Television shows such as *Jackass* or commercials such as the adrenaline-pumping car advertisements often disclaim liability at the outset. This is generally accomplished through a

"disclaimer," or a statement warning the viewer of the inherent dangers of the video and that the acts are performed by trained or supervised individuals. The legal force of such a disclaimer is strong. Telling viewers, in plain language text, that they are about to see someone perform a dangerous stunt, but that these actors are trained professionals, can render ineffective a lawsuit by viewers who do indeed "try it at home" and hurt themselves. The disclaimer preceding *Jackass* stated: "WARNING: The following show features stunts performed either by professionals or under the supervision of professionals. Accordingly, MTV and the producers must insist that no one attempt to re-create or re-enact any stunt or activity performed on this show."


Qualifications do exist, however. Though there is no specific set of cases that discuss television disclaimers, consumer products have been involved in user injury for decades and, in this context and despite disclaimers, lawsuits have been filed and won, ultimately shaping the required language and form of disclaimers. For example, the Uniform Commercial Code, a set of federal rules regarding the purchase and sale of goods and services, states that a disclaimer must be "conspicuous," meaning that it must somehow stand out in an otherwise long and wordy contract. Moreover, the First Circuit Court of Appeals has held that "disclaimers or qualifications in any particular case are not adequate to avoid liability unless they are sufficiently prominent and unambiguous to change the apparent meaning of the claims and to leave an accurate impression. Anything less is only likely to cause confusion by creating contradictory double meanings." *Removatron Intern. Corp. v. FTC*, 884 F.2d 1489 (First Circuit 1989)

Video disclaimers are different in context, but the idea is the same -

viewers should be fairly notified of any risks they might subject themselves to. You do this in the context of the UCC through bold print, capital letters, underlines, and so forth. Videos should have disclaimers conspicuously in the beginning of a video, in large, clearly visible letters.

Insurance

A word of warning: If a disclaimer is found to be insufficient (e.g., if it flashes on the screen for a very short time, or cannot be read due to poor color contrast) or the risk of injury too great (such as a video that gives step-by-step instructions on how to create homemade pyrotechnics), a lawsuit may still have some merit. A lawsuit may be brought against you by a viewer - despite seeing the conspicuous and well-intentioned disclaimer - that got hurt recreating a dangerous act. The cost of such a lawsuit may be crippling, especially if the case is strong and medical bills are involved.

We advise you also to obtain insurance for protection against unforeseen costs - specifically legal costs. Insurance comes in many forms, but the most effective forms of insurance in this case would be *Commercial General Insurance (CGI)* or more specific *Film and Video Production Insurance*. Since injury from viewer re-creation may be long after the shoot ends, having general insurance might provide greater protection while *Film and Video Production Insurance* may be relatively short-term, for the duration of a shoot or only for a short time thereafter. 

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