

## Modularity + pixel shift vs versatility + hi-res

MiniDV/DVCAM Camcorders  
Canon XL1s  
Sony DSR-PD150

by Peter Dudar

We have looked at the ins and outs of using inexpensive single-CCD MiniDV camcorders as backup or 'sketch' cams in past issues, but serious production in MiniDV requires 3-CCD cams with manual controls for all shooting parameters. There are a number of 3-CCD MiniDV cams you can settle for, but the Sony DSR-PD150 and the Canon XL1 (now the XL1s) have been two of the most coveted for several years.

Released in late 1997, the Canon XL1 provided pro/prosumer viability for less than US\$4,500/CDN\$7,000. Introduced in early 2000, the Sony DSR-PD150 became the prime—and for some, the superior—alternative. Last fall, Canon responded with an upgrade to the XL1—the XL1s. The design concepts behind the Sony and Canon cams differ—in some ways, the compact Sony is a grown-up consumer cam and the modular Canon is a slumming pro cam. The question is, which has the most viability now and in the future?

### SONY DSR-PD150

When Sony's main competitor to the Canon XL1—the VX1000—began losing ground, Sony responded with the DSR-PD150, which can record in either MiniDV or DVCAM modes.

Although significantly smaller, the PD150 handles similarly to the VX1000, but improves on it throughout. Obvious exterior changes are the flip-out 2.5-inch LCD screen and balanced XLR audio inputs. Inside, Sony developed special 1/3 inch, 380K pixel CCDs with enhanced sensitivity and resolution, plus an improved signal-to-noise ratio, cleaning up

vertical smear and white noise in the process. Within Sony's current DVCAM line, the PD150 delivers a superior image to the even smaller PD100A and lots of the professional features of the more upscale DSR250.

The PD150 (like the XL1s) is designed to minimize the need to use menus while shooting.

Manual controls, like Shutter, Gain, White Balance and Audio Level buttons are grouped on the back of the camera, where they work in conjunction with the main selector dial. Also on the back, the battery compartment is recessed so that even an eight-hour NP-F960 battery doesn't interfere with use of the tilt viewfinder. Sensibly, the Iris button and separate dial are placed forward on the fixed lens. Audio input switches sit above the lens, next to the microphone holder.

The power switch has four dialable positions: VCR, Off, Camera and Memory—a lock switch prevents slippage from Camera to Memory mode. There's a secondary start/stop switch on top of the body, plus End Search and Edit Search buttons. And when you switch to VCR mode, a flat panel beneath the carry handle lights up, revealing a set of playback controls.

Sony could have done better with the Menu button—you have to flip open the LCD screen to get at it. But overall, the PD150's layout is remarkable, especially considering its size.

Like most Sony products, the PD150 looks quite nice; the body is die-cast magnesium, and the unit has been around long enough to have acquired a reputation for reliability and durability.

### CCDs, MTFs, LCDs AND XLRs

With a horizontal resolution of 530 lines, the PD150's three 1/3 inch CCDs (380,000 pixels, 340,000 effective) deliver a solid playback resolution of 500 lines (DV format is 500 lines). Its low light performance is extraordinary—the PD150 likes to over-brighten night shots, but the results are relatively clean.

It employs a sharp, high Modulation Transfer Function lens (6.0 to 72.0 mm, 58 mm filter diameter), with 12x optical zoom. Like the XL1s, it has an undifferentiated zoom ring that rotates perpetually—too bad. But aside from that, it's reasonably responsive for a servo-controlled ring. The lens slider control has Auto, Manual and Infinity settings; and for quick focusing in Manual mode, there's also a Push Auto focus button just below the slider—nice.

Though Canon has upgraded the autofocus in the XL1s, the PD150 mechanism still seems faster and hunts less. The variable-speed zoom rocker control is smooth throughout its range and moves at good speed when needed.

The PD150 provides two neutral density filters: 1/4 (2 stops) and 1/32 (4 stops)—and they cover most lighting situations reasonably well. The system even prompts you when a certain filter should go on or off by flashing alerts on the LCDs.

The Super SteadyShot stabilizer works fine, but turning it on/off requires going into the menus—a stabilizer button (as on the XL1s) would be useful.

Like the Canon XL1s' 16x lens, the Sony PD150's 12x lens doesn't go as wide as you'd want for shooting interiors. And of course, its zooming range is outclassed by the Canon. Sooner, rather than later, you'll want wide angle and telephoto adapters for the PD150. You can use threaded adapters, but look for accessories that fit the convenient bayonet mount that Sony has put up front. The Century Precision Optics ([www.centuryoptics.com](http://www.centuryoptics.com)) line of accessories comes highly recommended.

At 2.5 inches, the PD150's 200,000 dot LCD flip-out screen is less impressive than the PD100's 3.5 inch screen, but it's high quality. And you can readily adjust volume and LCD brightness with controls located on the screen casing.

The 180,000 dot black and white LCD viewfinder provides 500 lines of horizontal resolution. I feel guilty admitting to mixed feelings about it, since the black and white LCD viewfinder is an upscale feature—and as intended, it's much better than a

comparable color viewfinder for establishing focus. But when the LCD flip-out screen is rendered useless in bright light, I really miss not having the means to verify how color is affecting my framed image.

The menu system has yet to be bettered. It's a simple-to-use three-column set-up that employs intelligent color highlighting and no buried submenus. Column 1 lists the main categories available in the current mode, using initialed icons; column 2 lists available options for whatever is selected in column 1; and further options pop up in column 3 when something is selected in column 2.

Multi-channel audio capabilities of 48 kHz (16-bit) and 32 kHz (12-bit) are a given on digital camcorders. Sony has upped the ante by placing two balanced XLR connectors just under the short shotgun microphone, and supplying switchable 48v phantom powering. On the other hand, the detachable ECM-NV1 mic is mono—it's the one thing everybody replaces on this unit.

To manually adjust the recording level, you just press the Audio Level button, which calls up the level adjustment display. Recording levels of channel 1 and channel 2 can either be linked or separated when auto gain (AGC) is switched off. And when recording audio manually, the recording level indicator appears on the LCDs. Note that the audio hiss problem associated with the initial version of this camera has been eliminated.

### SHOOTING MODES AND MANUAL CONTROL

Instead of a dial with auto and shutter priority programs, etc. as on the Canon XL1s, Sony provides a camera mode selector with just three positions—fully auto (Auto Lock), fully manual (Hold), and an interim Auto Lock release mode that functions as an auto override by letting you adjust iris, gain, shutter and white balance. Unselected overrides continue to function automatically. (Note: even in manual, the cam adjusts the shutter speed automatically if you leave the Auto Shutter setting on in

the menu.) Buttons are provided to instantly adjust for back lighting or spot lighting.

Shutter speeds range from 1/4 to 1/10000 of a second—personally, I'm fond of the 1/4 speed, which produces interesting blurs and zooms. Beyond that, this cam also enables interval recording.

There's a 16:9 mode option for wide-screen TV output, but it's not true 16:9—the PD150 just crops the image, so it's degraded.

The PD150's manual functions include Custom Presets—one in camera mode and another in memory mode. You can preset Color Level, Sharpness, White Balance Shift, and Auto Gain Limit (6 dB/12 dB/off).

Gain levels range from 0 dB to +18 dB—usually, noise is barely noticeable until 9 dB and above. Of course, the PD150 provides one-push White Balance setting (plus outdoor and indoor presets), but its auto white balance is surprisingly impressive—it even performs quite reasonably under sodium street lights (and better than the XL1s).

A slide switch inside the flip-out screen provides 100% and 70% Zebra Pattern settings. Considering that setting zebras between 90-95% is pretty standard, the cam could do with more settings.

Some other higher end features: time code data can be preset, and if you're working with multiple cameras in DV-CAM mode, user bits can also be set; date/time info can be superimposed on your images; an Index can be marked while recording; SMPTE full field color bars can be accessed through the ETC menu; and two settings are available for master black—0 IRE or 7.5 IRE.

Progressive scan on the PD150 is 15fps, so it's mainly for capturing stills to a mem-

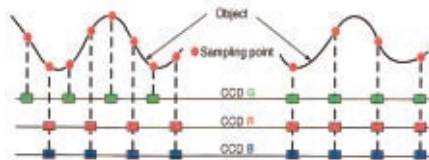


The **SONY DSR-PD150** is sometimes called “the bible for DV shooters.” Its low light performance is extraordinary. The PD150 has a reputation for durability, plus it's small, lightweight and has a flip-out LCD screen, making it very versatile.

ory stick, rather than recording video. 640 x 480 VGA stills (JPEG format) can be recorded with compression ratios of 1/3, 1/6, or 1/10. Considering that newer consumer cams can capture higher res stills and even MPEG sequences to memory sticks, the PD150 is no longer state of the art here. On the other hand, the Memory Stick is useful for saving presets.

There's no USB port on this cam (or on the XL1s), but it has most of the crucial connectors, including iLink (Firewire, IEEE 1394), S-Video and LANC (Local Application Control). And the PD150 can convert analog input signals to DV.

Currently, the PD150 (like the XL1s) can record directly to a hard drive using an intermediary controller. This summer, Sony is debuting its DSR-DU1 hard-disk drive—then, the PD150 will be able to plug directly into the DSR-DU1 and record simultaneously to both disk and tape.



The CANON XL1S' pixel shift technology: the green CCD is physically shifted 1/2 pixel horizontally, and the green signal is electronically shifted 1/2 pixel vertically.

The power consumption of the PD150 is 4.7 W (with viewfinder), and with an optional NP-F960 InfoLithium battery pack, it can record for up to eight hours, substantially longer than the maximum time available on the XL1s.

Flash: apparently, Fuji is going to start selling DVCAM tapes soon—expect to see price reductions.

**CANON XL1S**

Adapting pro design concepts, Canon introduced the XL1 in late 1997 as an open architecture modular system whose detachable components included a 16x electronic zoom lens. The XL1 definitely looked professional—and very cool.

The Sony DSR-PD150 came online in early 2000 with some newer technology that outclassed the XL1. Canon needed a new XL1 to stay in the game, but had to keep in mind the plethora of XL1 accessories already out there. The consequent solution is the XL1s, which looks like a near clone of the original—and still works with XL1 add-ons.

But inside, Canon has rerigged the XL1s with a slew of upgrades, including enhanced CCD circuitry and new manual functions. Plus Canon has introduced two new lenses: a revamped 16x electronic and an optional 16x mechanical.

The XL1s is Nirvana for manual control buffs. There are so many that even an experienced user needs some time to get acquainted with this system. But the controls are grouped logically, so once up to speed, one can shoot very efficiently.

The XL1s' six shooting modes are on a central power dial on the side of the body. The audio level controls are just back of the dial, under a door with cutaways—so you can see your settings but can't accidentally alter them. An LED stereo sound level meter is angled for viewability, just above the dial.

Secondary start/stop, zoom and photo controls are well-positioned on top of the unit by the viewfinder, which rotates fully upward. The VCR playback controls are nearby under a flip-top in the carry han-

dle. And the S-video terminal and such are under a flip-top at the back of the cam.

Conveniently, a dual function Menu/Iris selector dial sits on a protrusion just back of the lens; shutter + and - buttons occupy another face of the protrusion. Just above are Record Search/Review controls and a new button for calling up true SMPTE color bars.

The magnesium alloy body is sturdy and the controls are well crafted, but the XL1/XL1s' rep doesn't match the PD150's for durability.

**ENHANCED SENSITIVITY, MORE ZOOM AND OPTIONAL XLRs**

Like the XL1, the XL1s' CCDs are still 270,000 pixels (versus the PD150's 380,000)—an unimpressive stat. Of course, resolution is only part of what makes a quality image. Other factors such as noise ratio have to be accounted for—and Canon has cleaned up the circuitry by +4dB, to achieve cleaner shadow detail and brighter low light images.

The rationale for going with a lower pixel count is that larger pixels capture more light. To help compensate for relatively low resolution, the XL1s uses pixel shift technology. In a nutshell, the green CCD is physically shifted 1/2 pixel horizontally from the red and blue CCDs, and the green signal is electronically shifted 1/2 pixel vertically. That increases the sampling points—and Canon says the result is comparable to 410,000 pixel resolution.

The resulting image is softer than the PD150's and defaults to more saturated tones. The desirability of this look is endlessly debated by users of the competing systems; fans of the look consider it film-like, non-fans call it "smeary".

So, is the XL1s now up to par with the PD150 in low or high contrast light? Not really. And don't get me started on the issue of noisy reds...

The original XL1 lens had problems

holding focus through a zoom and many complained about it—so Canon got rid of the lens. The new 16x IS II zoom lens (5.5 - 88mm) uses SuperRange optical stabilization, and has a built-in neutral density filter, plus a Push AF (auto focus) button. The filter diameter is larger than the PD150's: 72mm versus 58mm.

The lens is sharper and quicker to auto-focus, doing less hunting than the original.

I suppose one ND filter is better than none, but this one is frustrating. It's so heavy-duty (in the six to nine stop range) that it's often useless when you're trying to achieve optimum iris/shutter balance.

Like the PD150 lens, the 16x IS II lens has an undifferentiated zoom ring that rotates infinitely. But now there's the option of going with the new, more precise 16x manual servo zoom lens, which provides focus, zoom and aperture scales. The manual lens also has two ND filters, but no optical stabilization. Take note that it lists for roughly US\$1,900/CDN\$3,000.

The downside of the 16x lenses is that they make the cam front-heavy. The unit has a flip-down pad at the back that enables you to lean the XL1s on your shoulder—but it's not a true shoulder mount. You have to cradle the lens with your hand while shooting—and working handheld for extended periods of time can be quite trying. You can now preset the speed of the zoom levers on the side grip and handle.

The 180,000 pixel viewfinder, like other color viewfinders, makes critical focusing challenging. Since it's a module, you can replace it with the 1.5-inch FU-1000 monochrome viewfinder—but it retails for about US\$1,850/CDN\$2,900. Color saturation on the viewfinder image is now adjustable, and you can set it to display no data, partial data or all data. It doesn't make up for the cam's lack of a flip-out screen, but the viewfinder's eye point switch has a Far setting.

Canon has dumped the four-button menu setup and revised the internal menu system; though options have been expanded, the whole menu system is actually faster and easier to use—nicely done.



## SONY DSR-PD150



## CANON XL1S

<b>Recording formats</b>	DVCAM, DV	DV
<b>Image Sensor</b>	Three 1/3 inch CCDs, 380,000 pixels (340,000 effective pixels)	Three 1/3 inch CCDs with Pixel Shift, 270,000 pixels (250,000 effective pixels)
<b>Lens</b>	12:1 variable speed (1.2-2.2 sec) zoom lens; f = 6.0 to 72.0 mm; F1.6 to 2.4	XL interchangeable lens system; supplied: 16ZX IS II zoom lens, f/1.6-2.6, 5.5-88mm
<b>Filter diameter</b>	58mm	72mm (XL lens)
<b>Image Stabilizer</b>	SteadyShot optical	SuperRange optical
<b>Focusing System</b>	Auto/Manual (ring); Infinity; One Push Auto	TTL autofocus, Manual, Push autofocus
<b>Built-in ND Filters</b>	Two filters: 1/4 (2 stops) and 1/32 (4 stops)	One filter (16ZX IS II zoom lens): approx. 6 to 9 stops
<b>Shutter Speed</b>	1/4 to 1/10000 seconds	1/8 to 1/15,000 seconds
<b>Exposure</b>	Auto/Manual, AE Shift	Auto/Manual, AE Shift
<b>Minimum Illumination</b>	2 lux (F1.6)	2 lux (using XL 5.5-88mm lens and slow shutter at 1/8 of a second.); recommended: more than 100 lux
<b>Horizontal Resolution</b>	530 lines horizontal resolution; 500 lines playback resolution	Horizontal resolution info not available; 460 lines playback resolution
<b>Video Recording System</b>	2 rotary heads, helical scanning system	2 rotary heads, helical scanning system
<b>Video Signal</b>	EIA Standard, NTSC colour system	EIA standard (525 lines, 60 fields), NTSC color signal
<b>Progressive Scan</b>	15fps	Interpolated 30fps
<b>Interval Recording</b>	Interval: 30 sec, 1 min, 5 min, 10 min; recording time: 0.5 sec, 1 sec, 1.5 sec, 2 sec	Interval: 30 sec, 1 min, 5 min, 10 min; recording time: 0.5 sec, 1 sec, 1.5 sec, 2 sec
<b>Clear Scan</b>	—	61.9Hz to 201.5Hz.
<b>Audio Signal</b>	Rec: 48 kHz/16-bit, 32 kHz/12-bit; Playback: 48 kHz/16-bit, 32 kHz/12-bit, 32 kHz/16-bit, 44.1 kHz/16-bit	PCM digital sound; 16-bit (48kHz/2ch); 12-bit (32kHz/2 from 4ch); 12-bit (32 kHz/4 ch simultaneous)
<b>Viewfinder</b>	180,000 dot B/W LCD	0.7 in., color LCD (approx. 180,000 pixels)
<b>Flip-out LCD Screen</b>	TFT Active Matrix, 2.5-inch, 200,640 pixels (880 x 228)	—
<b>Zebra Pattern Settings</b>	70, 100	80, 85, 90, 95, 100
<b>White Balance</b>	Auto, One-push manual, Outdoor(5800K), Indoor(3200K)	Auto, One-push manual (up to 3 manual settings), Indoor (3200K), Outdoor (5600K)
<b>Gain Control</b>	0 dB to +18 dB	-3 dB to +30 dB
<b>Custom Keys</b>	—	Two keys each for both Camera and VCR modes
<b>Custom Presets</b>	One preset in camera mode, one in memory mode; adjustable items: color level, sharpness, WB shift, AGC limit	Three presets; adjustable items: color gain, color phase, sharpness, setup level
<b>Color Bars</b>	SMPTE	SMPTE
<b>Microphone</b>	Mono, short shotgun (ECM-NV1)	Stereo electret condenser microphone
<b>Tape Format</b>	Mini DVCAM or MiniDV videocassettes	MiniDV videocassettes
<b>Tape Speed</b>	Approx. 28.2 mm/s (DVCAM mode), Approx. 18.8 mm/s (DV SP mode)	SP: 3/4ips (18.81 mm/s); LP: 1/2ips (12.56 mm/s)
<b>Max. Recording Time</b>	40 minutes (DVCAM mode), 60 minutes (DV SP mode, with PDVM-40ME cassette)	SP: 60 minutes (60 minute cassette), 80 minutes (80 minute cassette)
<b>FF/Rewind Time</b>	Approx. 2 min. 30 sec.	2 min. 20 sec.
<b>Memory Card Function</b>	VGA image data, JPEG format	—
<b>Connectors</b>	Video IN/OUT: RCA pin x1; Luminance signal: 1Vp-p 75, unbalanced, sync negative S-Video IN/OUT: Mini-DIN 4 pin x1; Luminance signal: 1Vp-p 75, unbalanced; Chrominance signal: 0.286 Vp-p Audio IN/OUT: RCA pin x2; 327mV; Output impedance with less than 2.2k; Input impedance with more than 47k Audio IN: XLR 3-pin female, x2 -60dBu, 3k, +4dBu, 10k (0 dBu=0.775Vrms) DV Terminal: i.LINK (IEEE 1394 spec.) DV IN/OUT, 4-pin x 1 LANC Terminal: Stereo mini x 1 Headphone: Stereo mini x 1 External DC IN: 8.4 V (AC-L10 AC Adaptor)	Video terminal: RCA jack 1 Vp-p/75 ohms unbalanced, synchronized load S-Video terminal: 4 pin mini DIN, 1 Vp-p (Y signal), 0.286 Vp-p (C signal) Audio Terminal OUT: RCA jack (L,R), 2 sets: 4dBm (47kohms load)/ 3kohms or less, unbalanced Audio Terminal IN: RCA jack (L,R) 2 sets, unbalanced: 11dBV/47kohms (LINE); 35dBV/600 ohms (MIC ATT); 55dBV/600 ohms (MIC) DV Terminal: Special 4 pin connector (based on IEEE 1394) LANC Terminal Headphone Terminal: 3.5mm stereo mini-jack External DC IN: 8.4 V (DC-900 DC Coupler)
<b>Power Requirements</b>	DC 7.2 V (Battery), DC 8.4 V (AC Adaptor)	7.2 V DC
<b>Power Consumption</b>	4.7 W using the viewfinder/5.4 W using the LCD	While recording AF="ON": 8.7 W (Approx., recording with the AF turned on)
<b>Operating Temperature</b>	0°C to 40°C (32°F to 104°F)	32 - 104°F (0-40°C)
<b>Dimensions</b>	WxHxD: 125 x 180 x 342 mm (5 x 7 x 13.5 inches); 128 x 180 x 405 mm (5.125 x 7.125 x 16 inches) including microphone	8 3/4 x 8 7/16 x 16 5/16 in (223mm x 214mm x 415mm)
<b>Weight</b>	Camcorder only: approx. 1.5 kg (3 lb 5 oz)	Not including lens and battery pack 3 lbs 11 15/16 oz approx. (1.7 kg); fully loaded 6 lbs 4 7/8 oz approx. (2.86 kg)
<b>Street Price</b>	US\$3,800/CDN\$6,000	Kit (w/16x IS II zoom): US\$4,200/CDN\$6,600; Body only: US\$3,300/CDN\$5,200
<b>Contact</b>	Sony of Canada: Telephone 1-800-361-5535; Web www.sony.ca/dvcam	Canon Canada: Telephone 905-795-1111; Web www.canon.ca



With its pro-style modular system, plus the filmic look it produces, the **CANON XL1S** has made serious inroads with filmmakers and broadcast-based producers moving into MiniDV. For some, the XL1s' interchangeable lens system is its major and deciding plus.



Audio-wise, the XL1s has 16-bit capabilities comparable to the PD150 and a somewhat better mic (stereo electret condenser), but unfortunately it has no balanced XLR connectors. Canon provides two add-on 'solutions' for this: the MA-100 or MA-200 mic adapter/shoulder pad. Retail prices: about US\$180/CDN\$300 and US\$325/CDN\$500 respectively.

Does this sound familiar? You're on standby, setting up a complex shot, and the cam shuts off before you're ready to record—if so, you'll really like the new Power Save option. Instead of totally shutting down, the XL1S separates the tape from the recording head drum after five minutes, but maintains power to all camera settings and video out feeds.

#### **SHOOTING MODES, MANUAL CONTROL AND DV CONTROL**

The XL1S has three recording modes:

standard interlaced video, a photo mode for recording stills to tape, and a 30-frame per second Frame mode. The latter is an interpolated 'progressive' scan—essentially, the cam takes the two standard interlaced fields, tosses one out, and then uses algorithms to interpolate the missing lines.

The XL1s now has Interval Recording and Clear Scan capabilities. Clear Scan enables you to eliminate rolling black bars or flickering when you shoot computer or TV display screens by adjusting the scanning frequency setting. Adjustments range from 61.8Hz to 201.5Hz.

Also, you can now access six shooting (Program AE) modes *really quickly* by rotating the Power Dial: Green Zone (fully automatic), Auto, Shutter Priority, Aperture Priority, Manual, and Spotlight. Normally Shutter Priority doesn't display aperture info, Aperture Priority doesn't display shutter info, etc.—but you can call up this

info with the Exposure Lock button.

Like the PD150, the XL1S doesn't shoot true 16:9 aspect ratio—it just applies an electronic anamorphic stretch to the video, thereby losing resolution. Otherwise, if you want to 'shoot and protect' in the normal 4:3 aspect ratio, it now provides 16:9 Guides.

Advanced image control has been added to the XL1s via Custom Presets. You can manually adjust up to four picture controls: Color, Sharpness, Color Gain and Set-up level (+/- 6). Then you can assign these settings to one of three custom presets, configuring the camera for different situations or shooters. Conveniently, three control buttons are provided for quickly activating any set.

Since Canon can't put buttons for everything on this cam, they've provided two Custom Keys for assigning frequently used menu functions. The camera mode possibilities are Index Mark, Zebra Pattern, VCR Stop, On-screen, Data Code, Audio 1 Input, Audio 2 Input, Zoom Speed (grip) and Zoom Speed (handle).

Gain Controls range from -3dB to +30 dB, with new +18 and +30 settings; -3dB is useful, +30 produces mostly noise.

The XL1S now stores up to three manual White Balance settings, which is especially useful if you're re-visiting differing setups. And like Gain, the White Balance settings are accessible with a retractable button.

Also new: Zebra Pattern levels have been increased from one to five (100%, 95%, 90%, 85%, 80%); date/time info can be superimposed on the video image; the cam now has analog in.

With new DV Control capability, the XL1s can manage DV devices that employ the Firewire AV/C protocol—so it can be connected to a DV hard drive controller such as FireStore ([www.focusinfo.com/products/firestore](http://www.focusinfo.com/products/firestore)) for direct-to-hard drive recording.

The XL1s' power consumption has been reduced, but Canon's long-life batteries are still no match for Sony's. Canon's workaround is to attach an op-

**NOTE: Downloadable PDF versions of the Canon XL1s and Sony DSR-PD150 manuals are available online.**  
[www.canondv.com/downloads/manuals/XL1s\\_NTSC\\_E.pdf](http://www.canondv.com/downloads/manuals/XL1s_NTSC_E.pdf)  
[www.sony.ca/dvcam/manuals/DSR-PD150.pdf](http://www.sony.ca/dvcam/manuals/DSR-PD150.pdf)

tional CH-910 Dual Battery Charger/Holder and two BP-945 battery packs to the cam. (An 8-hour Sony NPF-960 battery retails for US\$140/CDN\$230; a Canon CH-910 plus two 3-hour BP-945s retail for around US\$450/CDN\$710 total.)

## SO WHAT? SO WHAT'S NEXT?

Around 8:30 a.m. on September 11th, 2001, Jules Naudet turned his camera upward, and captured the only known video of the first plane striking Tower 1 of the World Trade Center. The experience of 9/11 from the inside, shot by Jules Naudet and his brother Gedeon, became the extraordinary CBS documentary called *9/11*. It was shot with PD150s ([www.cbs.com/primetime/9-11/project.shtml](http://www.cbs.com/primetime/9-11/project.shtml)).

But if you watch TV, you've seen lots of footage shot with this cam.

Last year, director David Lynch (*Twin Peaks*, *Blue Velvet*, *Mulholland Drive*) shot a Sony PlayStation2 commercial ([www.PixelMonger.com/screeningroom.html](http://www.PixelMonger.com/screeningroom.html)) with a PD150. Interestingly, the commercial has a filmic look, something that's commonly associated with the XL1s. (Check out



In the *DIGITAL* continuum: the Panasonic AG-DVX100 24P DV Cinema Camera and the web capable Sony DSR-PDX10

[www.PixelMonger.com/art\\_PS2.html](http://www.PixelMonger.com/art_PS2.html) for details on how the cam profile was tweaked to get the look.)

Did you by chance pick up the latest *Nine Inch Nails Live* DVD? That's Canon XL1s footage.

Think you might see *Full Frontal* ([www.apple.com/hotnews/articles/2002/04/fullfrontal](http://www.apple.com/hotnews/articles/2002/04/fullfrontal)), the sequel to *sex, lies & videotape*? Director Steven Soderbergh (*Ocean's Eleven*, *Traffic*, *Erin Brockovich*) shot it all with a "bare bones" Canon XL1s (PAL version). Why? Because the Canon XL1s "allowed him a freedom he hadn't experienced before."

## THE DIGITAL CONTINUUM

A modern DV cam isn't just a discreet unit, it's part of a digital continuum that ranges from production to post production to distribution. All-digital workflows are producing everything from Internet videos (that are now the norm on even modest sites) to feature films.

If there's a version 2 of the PD150 on its way, Sony isn't saying. But due this summer is the Sony DSR-PDX10. Ostensibly, it's an upgrade of the PC100, but consider these stats: 1/4.7 inch HAD CCDs (1,070,000 pixels gross), 530 lines of horizontal resolution, 12x optical zoom, DV-CAM and DV format recording capability, a Memory Stick media slot, i.LINK IEEE 1394 DV interface—kinda sounds like a PD150. Consider further: MPEG recording to Memory Stick media, 1152 x 864 dot still capture, web still image transfer, plus streaming of live video and VTR playback (motion JPEG) via its USB port. The list price is US\$2,900/CDN\$4,400.

To get the cinema look, 30-frame per second progressive is what you shoot when you can't afford 24-fps progressive. That could change this September when Panasonic delivers the AG-DVX100 24P DV Cinema Camera, which is supposed to capture 24-fps progressive in mini-DV format. The AG-DVX100 uses 1/3-inch 410,000-pixel progressive-scan CCDs, sports a Leica Dicomar lens with a wide field of view (f3.25 to 325mm) and includes 2-channel XLR inputs with phantom power supply (48V). The list price is US\$3,495/CDN\$5,395.

## PREFERENCES AND AESTHETICS

Back to the Canon XL1s and the Sony DSR-PD150: there's much to like design-wise about the XL1s. And with its pro-style modular system, plus the filmic look it produces, the XL1s has made serious inroads with filmmakers and broadcast-based producers moving into MiniDV. For some, the Canon XL1s' interchangeable lens system is its major and deciding plus. The new 16x Mechanical Servo Zoom

Lens, with calibrated manual focus and calibrated power zoom, may be reason enough to go with the XL1s. Then there's Clear Scan.

But I prefer the PD150. First of all, I don't buy the notion that pixel shift interpolation fully compensates for the XL1s' lower resolution. The XL1s image does not equal the PD150's sharper, higher resolution image. And though Canon has cleaned up the XL1s' circuitry, when it comes to the crunch the PD150 still outperforms the XL1s in the dark and in high contrast light.

You may usually shoot on manual, but there's nothing like good auto functions for reference and quick setup. Some of the PD150's auto capabilities, like autofocus and white balance, exceed the XL1s'.

The PD150 is lighter, more compact, and has a flip-out LCD screen—consequently it's far more versatile than the XL1s, and you can shoot from pretty well any position conceivable. Just attach a monopod, and you can use the PD150 like a steadicam; or simply stick it on a sound boom, and so on. Plus, if need be, you can run a hell of a lot faster with this cam.

The PD150 does not draw attention, nor intimidate—you can get it into places that are otherwise *verboten* to the media. It's less liable to be confiscated in nasty political situations, and people talk more freely in front of this cam.

If you need to rent more PD150s for a multi-camera shoot, just about every rental place and video coop has them. Not so for the XL1s.

Also, DVCAM has a track pitch of 15 microns versus DV's 10 microns; DVCAM tape has a better carrier-to-noise ratio and experiences fewer dropouts. The PD150 shoots DVCAM as well as MiniDV.

And how about aesthetics? Well, I figure the Sony DSR-PSD150 opens up a wellspring of creativity like few other camcorders available today. 🍷

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