Battle of the Titans:

NIKON F6 vs. CANON EOS-1v vs. LEICA R9

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Canon got the better of Nikon and Leica on Internet forums in 2004 with regard to film cameras. If ad hoc quips about the world's leading 35mm SLR cameras were to be believed, Canon had pulled ahead in optics and overall speed of operation. As to Leica, well, the legendary mark had already had its day and is a stodgy if reliable instrument years behind Canon and Nikon.

The stereotypes were flat-out wrong, even before the introduction of the new Nikon F6 in late 2004. The reality is that each manufacturer has selectively invested in features for different users. Canon has led in technology to steady hand-held telephoto lenses. The Leica R9 provides ultimate finessing of manual with automatic controls to a precision of 0.1 f-stop (in multi-pattern metering), and is arguably the most user-friendly of the three cameras. The Nikon F6 is a more versatile and lighter redesign of the F5 that pioneered the most advanced autoexposure system available, engineered for accuracy in extreme or peculiar lighting conditions where other cameras would fall short.

Features in Common

The three flagship models are equipped to enable excellence in most photographic situations. Together with their abundant selections of optics and all manner of gadgetry, the top-of-line Nikon, Canon and Leica cameras have been widely considered the best in 35mm film photography.

The Nikon F6, Canon EOS-1v and Leica R9 offer**:**

- Evaluative autoexposure: The microcomputer in the camera assesses a scene through an array of sensors, and applies an ideal aperture and/or shutter speed as fast as 1/8000 sec. or as long as a half hour. For example, the autoexposure systems will recognize a backlit portrait and provide optimal exposure of the subject despite the brighter background for which average metering would overcompensate and result in too dark an image.

- Spot metering: The photographer can set exposure according to readings of one or multiple small areas in the composition.

- Focus tracking (Canon and Nikon): The predictive autofocus systems of the Canon EOS-1v and Nikon F6 lock on to and follow a designated subject if it or

the photographer are moving. Focus is maintained through a single or series of rapid-action exposures. Leica 35mm SLR cameras do not have autofocus, the absence of which however allows for some benefit as elaborated below.

- An extensive selection of lenses including "macro" optics for close-up photography, and "shift" lenses for architectural photography.

- Advanced flash synchronized up to 1/8000 sec.

- Viewfinder showing 99-100% of the image captured on film (Nikon F6 and Canon EOS-1v). The Leica R9 viewfinder shows 97% of the horizontal field and 96% of the vertical.

- High reliability: durable, maximally shockproof bodies and shutters, usable in virtually all weather conditions. If the batteries fail, the cameras can operate either without battery power (with limited functionality) or alternatively (Canon) may be equipped with a back-up battery source.

- Price ranges of $1650-2000 for the Canon EOS-1v, $2000 for the Nikon F6 and $3000 for the Leica R9 (as of March 2007).

Approach to Camera Selection

In considering a camera purchase, photographers should first learn which models offer features most important to their needs, then examine and handle the final contenders to assess the controls and ensure the feel and weight are satisfactory.

In the past, photographers attracted by leading features but not wishing to invest in a premium model could easily consider more modest equipment of the same product line. At present, however, this alternative applies almost exclusively to Canon, since Nikon and Leica have limited film camera options below flagship models. Nevertheless, recently discontinued second-line cameras tended to share similar design approaches and technology, as well as interchangeable optics and accessories. Premium used models of Canon and Nikon film cameras are widely available.

Potential advantages and disadvantages of the three leading Nikon, Leica and Canon film cameras are largely subjective depending on user priorities.

Nikon F6

For photographers desiring total freedom to compose and shoot instantly, with autoexposure for virtually every imaginable situation, the Nikon F6 offers an advantage in its evaluative "3D Color Matrix Metering II" system, an enhancement of the superbly competent metering of the F5. This technology does considerably more than measure illumination and equate the image with a particular composition and lighting pattern to figure proper exposure.

When a Nikon F5 or F6 lock into focus, its 3D Color Matrix metering senses the colors as well as the framework of the composition. Information on depth of field, from the lens, is also imputed. The microcomputer in the camera then identifies and matches the scene, its lighting and color conditions with an archetypical image among a database of upwards of 30,000 photos. (The F5 featured roughly that many reference images; the improved Color Matrix metering in the F6 has several times more, according to unofficial sources.) The cameras will not only sense when a photograph is taken in a snowscape, but will further adjust exposure for the shade of blue or gray of the sky.

Blues tend to produce mild underexposure as normally metered by the gray scale that has long been the basis for camera metering of reflected light. Improving on this, contemporary Nikon film and digital cameras allow slightly more exposure for blues compared to other evaluative systems. Bright yellow also tends to produce underexposure using the gray scale; green tends to produce overexposure; in either case, current Nikon cameras will compensate. The system also detects fluorescent and tungsten lighting, and makes appropriate adjustments to exposure (but film cameras cannot correct for the different lighting, which is a function of film, filters and processing).

The Red-Coated Man on the White Horse

A veteran camera dealer advises that Nikon 3D Color Matrix metering is the only autoexposure system that will finely expose an image of a red-coated man on a white horse. Other systems will expose primarily on the basis of the white of the horse. The Nikon F6 will identify the image as of a person on an animal, and expose primarily on the basis of the person and their clothing.

A seasoned photographer could of course manage the situation of a red-coated person on a white horse with an incident light meter (i.e., measuring the light falling on the subject, rather than the light reflected off it). Or use spot metering, or standard center-weighted metering together with basic knowledge of the reflective qualities of the primary colors. Or, a photographer could simply bracket the image (i.e., take various exposures at different speeds or apertures to assure at least one or two finely exposed images).

The compelling advantage of advanced Nikon metering is instant photography of complex lighting situations that could otherwise take significant time to master with a light meter, back-of-mind calculations or bracketing. For candid people photography and other potentially unique situations never to come again, the 3D Color Matrix system can be a valued asset. User comments on Internet forums on the earlier Nikon F5 indicate owners believe the system adds value, with the most difficult conditions managed well and typically exposed about ½ f-stop more accurately than conventional evaluative metering in other advanced cameras—a difference that can make or break a transparency.

Improvements in the Nikon F6

The F6 is more compact than the F5; camera weight has been reduced by about half a pound to just over 2 lbs. While not a small camera, the redesign brings it more in line with the less bulky Canon EOS-1v. Controls are reportedly friendlier but the range of options remains daunting. Grip has been improved.

As to performance assists, the F6 adds dynamic autofocus for closest-subject, selective area and single-point focusing, which are also available on Nikon's more advanced digital cameras but were not offered with the dated F5. Also, the F6 flash control system takes account of subject distance as well as brightness in determining an optimal mix of flash and existing light.

Photographers not needing 100% viewfinder coverage (92-95% can be advantageous in providing a margin of safety from film fringing or simply for cropping) or ultra-rapid motor drive but desiring the advanced Nikon metering may want to consider a lighter, used Nikon SLR. The 3D Color Matrix system was available for some years on a number of quality Nikon film cameras with essentially the same metering capabilities included on the flagship F5.

Canon EOS-1v

Canon is renowned for its innovations in optical technology. The most advanced telephoto system and the only "tilt-and-shift" optics in 35mm photography are Canon hallmarks. Together with the predictive autofocus and high-speed operation (up to 10 frames per second) of the EOS-1v, it's not difficult to understand how a gaggle of rapid-action photographers came to chat up the Internet with talk of Canon superiority.

Canon Image Stabilization Technology

Ten Canon high-power and moderate telephoto lenses are equipped with gyroscopic sensors feeding into a microcomputer controlling focal-plane alignment to counteract vibration. Recently, Canon adopted its Image Stabilization (IS) technology to a multi-purpose 28-135mm zoom lens. Tests by leading photographic magazines have indicated the IS technology allows hand-held photography at speeds 1.5-2 f-stops slower than normal. In situations such as low-light photography, IS can sufficiently steady a hand-held image at 1/8 – 1/15 sec—the equivalent of 1/30 sec. unassisted. IS technology will similarly improve photography from a moving vehicle.

As a rule, shutter speed should be no slower than the reciprocal of the focal length of the lens (e.g., a 200mm telephoto lens requires a 1/200 sec. or faster shutter speed hand-held. With Canon IS technology, minimum safe speed would be reduced to 1/60-1/100 sec.)

Canon Fluorite Glass

Canon offers telephoto optics of fluorite crystal, which minimizes color fringing (chromatic aberration) in its high-magnification 500-1200mm(!) lenses, and in several telephoto zoom and fixed lenses of lesser focal length.

Canon Tilt-and-Shift Lenses

Canon, Leica and Nikon offer shift lenses to assist architectural and (to a limited extent) landscape photography. Canon's shift lenses go a step further, offering front tilt similar to large-format cameras. By tilting the lens downward in relation to the film plane, the foreground will come into sharper focus together with the background, in most picture-taking situations. Tilt and shift are offered by Canon on three lenses: 24mm, 45mm and 90mm. Tilt is normally not required for wide-angle architectural photography—stopping the lens down moderately is usually sufficient to bring both foreground and background into focus—still, tilt may be helpful on the very wide 24mm lens in landscape and commercial product photography. Tilt-and-shift optics (and the shift lenses of other manufacturers) have to be manually stopped down and cannot be used in automatic exposure mode, although meter readings may be made through the lenses.

Leica R9

Leica 35mm SLR cameras are designed for the reflective photographer who prefers deliberative precision to automatic operation. As such, the Leica R9 does not have autofocus, though it has an evaluative autoexposure and bracketing system that will serve the photographer well in most picture-taking situations—similar to Canon in this respect.

The Nikon F6, Canon EOS-1v and Leica R9 allow for manual override of autoexposure, as well as a selection of metering modes. Yet for the hands-on photographer desiring full control, the Leica R9 advantage is its metering system allowing for exposure adjustments as fine as 0.1 f-stop in automatic multi-pattern metering mode.

For users not needing autofocus, its absence from Leica SLR models means lenses with less glass, less complexity, less weight, a bit more light reaching the film—which a purist may appreciate. Three Leica R lenses in particular offer sterling performance. The 90mm f/2 Apo-Summicron-R aspherical lens provides superb resolution at all apertures, even wide-open. The 15mm f/2.8 Super-Elmarit-R offers incredible, Biogon-like performance—negligible distortion, excellent contrast and minimal light falloff (about .3 f-stop)—wide-open as well—with a diagonal field of view of 111°. Extreme-wide medium and large-format optics of this caliber usually require a centre filter and lack the portability and rapid-reaction/real-time capability of this 35mm lens. Third, in the telephoto range, the Leica 280mm Apo-Telyt-R also produces images

of extraordinary quality, unmatched in contrast rendition and absence of chromatic aberration at wide apertures, and is fairly portable for a lens of such focal length.

Subtle Leica features add up. Reviewers have opined that the Leica viewfinder provides the brightest, clearest view of the three leading cameras. The R9, while solidly built and by no means a lightweight, is the most compact. A Leica with lens will often weigh 1-2 lb. less than its competitors. The controls of the Leica R9 are appealingly uncomplicated and user-friendly. A plus, to some, is the absence of numerous options for automatic operations they would rarely or never use. The LCD panel is located on the back of the Leica; Canon and Nikon have it on top.

Leica does not offer image-stabilization technology for its telephoto lenses. However the need for such technology may be obviated to an extent by the lesser weight of the R9 and its telephoto lenses of shorter and medium-range focal length up to 280mm.

The Leica Cachet

Leica is the most collected and historically admired camera in the world. An aura has developed around the marque—Leica magazines, photo competitions and an independent Leica historical society. Leica has made an art of melding evolutionary technical innovation with graceful design. The contemporary Leica R9 reflects this pedigree.

Summary of Camera Strengths

The three leading 35mm cameras—the Nikon F6, Canon EOS-1v and Leica R9—are multipurpose, robust instruments that will serve the photographer well in most situations.

Ultimate finessing of manual with automatic controls together with exceptional optics in an easy-to-handle instrument of distinguished marque make the Leica R9.

The recently updated version of the most accurate and versatile autoexposure system, 3D Color Matrix Metering II, is available with the Nikon F6, which also features unsurpassed autofocus technologies and ultra high-speed operation.

Canon stands out with its highly refined telephoto and shift-and-tilt optics, and also excels in ultra high-speed operation.