

F A S T & A C C U R A T E

N90s

Sales Manual

THE NIKON  
ADVANTAGE



NOT ALL AUTOFOCUS SYSTEMS ARE CREATED EQUAL

AUTOFOCUS

PERFORMANCE

For a professional,  
the true measure of an autofocus system's  
worth lies not in written specifications but in field-  
proven reliability. Naturally, speed is important, yet speed without  
accuracy becomes irrelevant. This handbook demonstrates how the  
Nikon N90s excels in all respects, offering any photographer the  
ultimate evidence of superior performance: consistently great  
pictures. Attention to superior performance is one reason  
why more photographers who use 35mm  
choose Nikon than all other  
brands combined.



# I. SUPERIOR FOCUS DETECTION

BENEFIT

FEATURE

N90s

## 1 Superior focusing accuracy

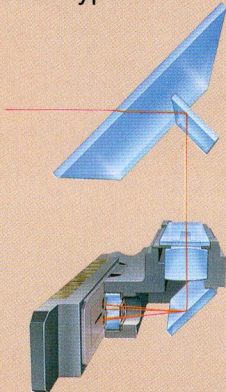
- Reliably focuses even on subjects that appear small in the viewfinder
- Detects subjects that are not “bull’s-eye” centered
- Optimum focusing accuracy with *all* AF-Nikkor lenses

## 2 Responsive operation

- Easier to follow fast-moving subjects
- Achieve creative photography without “bull’s-eye” problem associated with autofocus photography
- Wide-area composition for more pictures

## 3 Creative freedom

- Enjoy creative composition with a flexible autofocus system
- Use autofocus operation under the widest range of lighting conditions
- Enjoy virtually unrestricted performance-enhanced benefits from cross-type sensor



## 1. Cross-type contiguous sensor

The CCD elements of the CAM246 autofocus sensor are arranged contiguously. Gaps between the focusing points would be insensitive and unable to detect a subject; subjects that look small could be undetectable. The N90s exceeds competitive systems that suffer from large gaps within the sensor system.

## 2. More focus status data

Nikon has packed 86 CCD pairs into the 7mm-wide horizontal segment of CAM246 and 37 CCD pairs into the 3mm-high vertical segment. This high-density CCD system provides an enormous amount of focus detection data to the N90s camera's computer, which uses every bit of the information to achieve exceptional focusing accuracy. *All the data is used.* Speed is achieved, not by compromising data use, but by using faster calculation methods and faster hardware. This is because Nikon believes speed becomes irrelevant without accuracy.

## 3. Wide-area sensor

The CAM246 horizontal sensor is 7mm wide; that's more than 20% of the frame width. The large sensing area is outlined to aid composition, and no matter where a subject falls within the sensor area, focus can be detected. It's not necessary to use the time-consuming method of manually picking a sensing spot. The N90s camera's computer does the job faster, more accurately and reliably. Also, at 3mm, the vertical sensor is approximately twice as high as that of any other AF system.

## 4. Flexible composition

To activate focus tracking operations, some systems require that you first detect focus with the center of the focusing area; then the peripheral areas can begin to operate. Not with the N90s. No matter where the subject may be within the Wide-Area Sensor, it can be detected. Because of the larger sensing area, the photographer can shoot subjects that are moving across the field or pick one out fast. You can use the Wide-Area Sensor with exceptional flexibility.

## 5. Full-time vertical sensor

CAM246's vertical sensor, combined with the horizontal sensor, forms a powerful cross-type sensor that can reliably detect even subjects with repetitive patterns. The cross-type sensor is one of the most important assets of autofocus detection. For the Nikon N90s, the cross-type sensor operates with lenses that have an aperture of f/5.6 or larger. This means that it operates with *every* AF Nikkor lens, including AF-I Nikkor supertelephoto lenses.

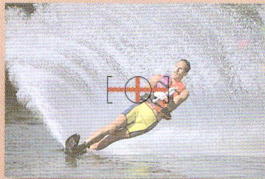
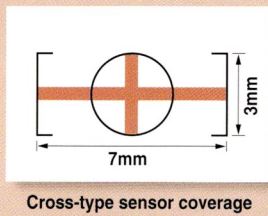
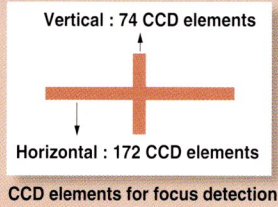
## 6. Widest EV range

CAM246 operates throughout the unprecedented range of EV minus 1 to EV +19, the widest range among AF systems. The N90s works through this expanded EV range, down to situations so dark the human eye has problems focusing.



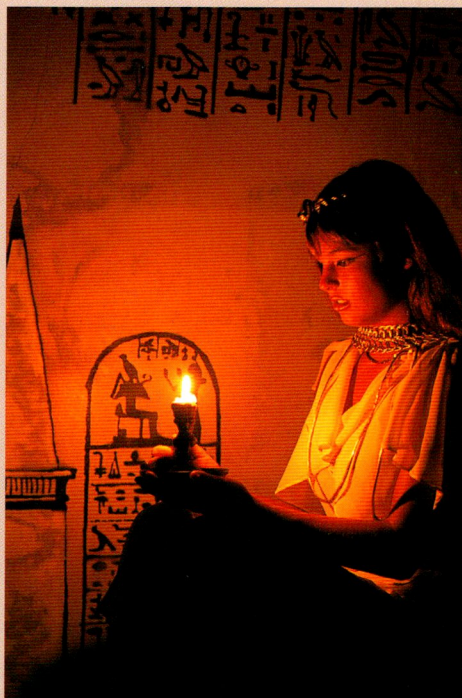


# EVIDENCE OF SUPERIOR AUTOFOCUS PERFORMANCE



JOHN BIEVER

Accurate focus even on off-center subjects



BRETT FROOMER

CAM246 works in extremely low-light situations



JOHN BIEVER

Subjects that appear small in the viewfinder can be reliably focused

With the N90s, you can even use the TC-14E AF Teleconverter with all AF-I Nikkors; the TC-20E can be used with the 300mm f/2.8 and 400mm f/2.8 AF-I Nikkors for autofocus operation. With other systems, about half of the available lenses (those with maximum apertures smaller than f/2.8) will not work with the vertical sensor, a tremendous loss in performance. The Nikon N90s provides all photographers, particularly sports photographers, with a major advantage.



TC-14E



TC-20E



# II. SUPERIOR OPERATION

BENEFIT

FEATURE

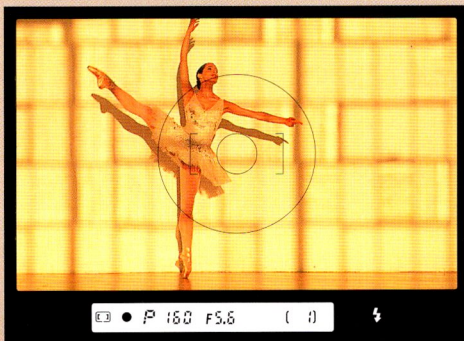
N90s

## 1 | Fastest focus detection

- Achieve instantaneous response without sacrificing focus detection accuracy
- Quickly focus on fast-moving subjects
- Responsive at critical moments

## 2 | Fastest AF operation

- Autofocus operation has minimal effect on motor drive speed
- Flexible operation and lens compatibility



JOE McNALLY

- ◀ Rotate focusing ring to left
- ▶ Rotate focusing ring to right
- In focus

## 1. Faster data processing

A new high-performance Central Processing Unit (CPU) with new Nikon-designed software operates two times faster than before. Faster operation is accomplished by high-speed data processing, not by overlooking some data. Nikon software uses full-data and high-speed processing to achieve accurate and responsive autofocus operation.

## 2. Faster lens driving speed

Thanks to the use of a newly developed high-torque coreless motor, lens driving speed is 25% faster than before. The N90s has the added advantage of using not only AF Nikkors but also AF-I Nikkor lenses with built-in motors for even higher performance.

## 3. AF operation has minimal effect on motor drive speed

The N90s will operate at motor speeds to 4.3 frames per second (fps) with manual focusing. When you switch to autofocus, the maximum speed is 4.1 fps, a mere 5% slower rate, compared to some systems that slow down by as much as 30% when you switch to autofocus. This is a dramatic demonstration of the faster AF operation achieved by the N90s.

## 4. Continuously reliable spot sensor

The N90s camera's spot sensor is 3mm horizontal and 3mm vertical cross-type. Unlike other systems, it will work with AF lenses f/5.6 or brighter—which means *every* AF Nikkor lens. With other systems, the vertical sensor doesn't work with lenses slower than f/2.8, which means cross-type spot sensor detection is not available with popular zoom lenses and many supertelephoto lenses.

## 5. Focus Tracking works in both AF modes

In both the Single or Continuous AF modes, the N90s camera's AF system will automatically detect when a subject is moving and automatically activate Focus Tracking. The viewfinder display automatically indicates that Focus Tracking is working. There's no need for you to make any adjustments or select any settings. It's automatic, as it should be for spontaneous operation.

## 6. Freeze Focus

This special feature is available with the optional Nikon MF-26 Multi-Control Back as well as with the exclusive Nikon Data Link system. Used with all compatible Nikkor lenses and manual focusing, this feature will automatically fire the shutter when a subject comes into focus. Perfect for wildlife photography or macrophotography.

## 7. Electronic Rangefinder

The Electronic Rangefinder makes manual focusing an easy task. It's precise and never tires as your eyes would. It even helps you manually focus in light so dim (EV -1) you can hardly see with the naked eye! And it tells you in which direction to rotate the lens focusing ring for sharp focus, unlike other systems that simply indicate if the subject is in focus or not.





# EVIDENCE OF SUPERIOR AUTOFOCUS PERFORMANCE



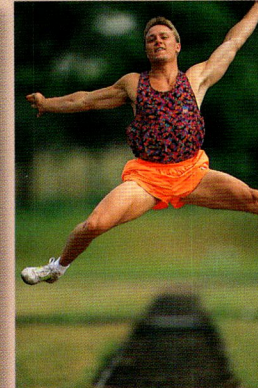
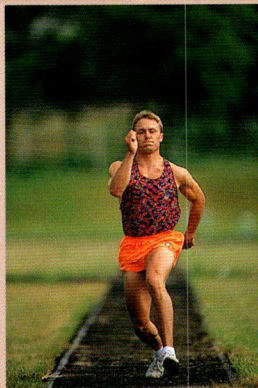
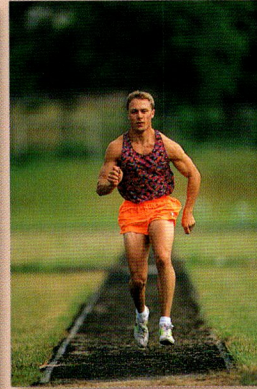
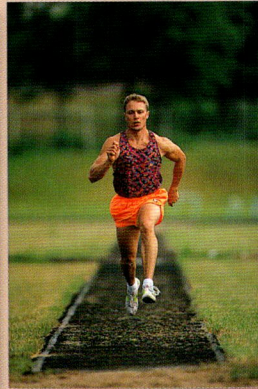
ART WOLFE



GILLES BENSIMON

Autofocus operation is instantaneous

Precise spot autofocus operation



JOHN BIEVER

Focus Tracking works with film advance speeds as fast as 4.1 fps



# III. SUPERIOR FOCUS TRACKING

BENEFIT

FEATURE

N90s

## 1 Shoot faster moving subjects

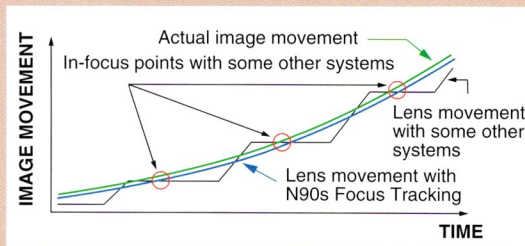
- Shoot subjects that are moving faster
- Shoot subjects that are closer

## 2 Focus Tracking with Lock-On™, a Nikon exclusive

- Focus-track even if the subject is momentarily blocked
- Focus-track even if the subject is momentarily out of the AF sensor area



## 1. Precision Focus Tracking



Some AF systems collect focus data, process it and then focus the lens. This is a stepped or intermittent method of autofocus. With the N90s, the lens

continues focusing even during data processing. The benefit is consistently sharp focus without regard to shutter release timing..

## 2. Shoot faster moving subjects

Nikon performance tests demonstrate that the N90s camera's AF system can focus-track on subjects moving 25% faster than other systems. For example, using a 400mm AF-I Nikkor, with the N90s Precision Focus Tracking is possible with a subject moving at 150 miles per hour from a distance as close as about 83 feet!

**Closest Focus Tracking distance**

Speed	Lens	300mm	400mm
50 miles/hour		37.7 ft.	49.0 ft.
100 miles/hour		53.5 ft.	69.5 ft.
150 miles/hour		65.5 ft.	85.2 ft.

## 3. Release-priority operation

The N90s camera's AF operation is so fast and smooth that Focus Tracking can reliably operate with Shutter-Release Priority at framing speeds up to 4.1 fps. With other systems, the shutter is released for the first frame of a sequence whether or not autofocus operation is complete, thus resulting in focus that's not consistently sharp. The N90s camera's continuous tracking feature assures consistently sharp focus whenever you shoot, even with the first frame of a sequence.

## 4. Exclusive Focus Tracking with Lock-On™

Once CAM246 detects a moving subject, autofocus activates Focus Tracking, and locks onto the subject. Even if focus detection is momentarily interrupted by something blocking the camera's view, Focus Tracking with Lock-On™ will continue to track the original subject, keeping sharp focus for subsequent frames. The same Precision Focus Tracking with Lock-On™ takes over if you accidentally move the AF sensor area off the subject for a moment. This feature is great for sports photography or for nature photography where something could momentarily block the main subject.

## 5. Focus Tracking in any mode

Unlike systems that require setting the camera to continuous servo mode to use Focus Tracking, with the N90s Focus Tracking is available in *any* autofocus mode and *any* film advance mode.





# EVIDENCE OF SUPERIOR AUTOFOCUS PERFORMANCE



GEORGE TIEDEMANN



Focus Tracking with Lock-On™



BRETT FROOMER



The N90s can follow moving subjects at a close distance



The N90s can focus on subjects moving faster



# Lens Performance Compatibility

	Autofocus with cross-type sensor	Manual with Electronic Rangefinder	Manual with matte field		Autofocus with cross-type sensor	Manual with Electronic Rangefinder	Manual with matte field
<b>AF and AF-I Nikkors</b>							
AF 20-35mm f/2.8D				180-600mm f/8 ED			
AF 24-50mm f/3.3-4.5				13mm f/5.6			
AF 28-70mm f/3.5-4.5D				15mm f/3.5			
AF 28-85mm f/3.5-4.5				18mm f/3.5			
AF 35-70mm f/2.8D				20mm f/2.8			
AF 35-80mm f/4-5.6D				24mm f/2			
AF 35-105mm f/3.5-4.5D				24mm f/2.8			
AF 35-135mm f/3.5-4.5				28mm f/2			
AF 70-210mm f/4-5.6D				28mm f/2.8			
AF 75-300mm f/4.5-5.6				35mm f/1.4			
AF 80-200mm f/2.8D ED				35mm f/2			
AF 18mm f/2.8D				35mm f/2.8			
AF 20mm f/2.8D				50mm f/1.2			
AF 24mm f/2.8D				50mm f/1.4			
AF 28mm f/1.4D				50mm f/1.8			
AF 28mm f/2.8D				85mm f/1.4			
AF 35mm f/2D				85mm f/2			
AF 50mm f/1.4				105mm f/1.8			
AF 50mm f/1.8				105mm f/2.5			
AF 85mm f/1.8D				135mm f/2			
AF 180mm f/2.8D ED-IF				135mm f/2.8			
AF 300mm f/2.8 ED-IF				180mm f/2.8 ED			
AF-I 300mm f/2.8D ED-IF				200mm f/2 ED-IF			
AF 300mm f/4 ED-IF				200mm f/4			
AF-I 400mm f/2.8 D ED-IF				300mm f/2.8 ED-IF			
AF-I 500mm f/4D ED-IF				300mm f/4.5			
AF-I 600mm f/4D ED-IF				300mm f/4.5 ED-IF			
AF Fisheye 16mm f/2.8D				400mm f/2.8 ED-IF			
AF Micro 60mm f/2.8D				400mm f/3.5 ED-IF			
AF Micro 105mm f/2.8D				400mm f/5.6 ED-IF			
AF Micro 200mm f/4D ED-IF				600mm f/4 ED-IF			
AF DC 105mm f/2D				600mm f/5.6 ED-IF			
AF DC 135mm f/2				800mm f/5.6 ED-IF			
<b>AI-P-type Nikkors</b>					Fisheye 6mm f/2.8		
500mm f/4 P ED-IF				Fisheye 8mm f/2.8			
1200-1700mm f/5.6-8 P ED-IF				Fisheye 16mm f/2.8			
<b>AI- and AI-S-type Nikkors</b>					Noct 58mm f/1.2		
28-85mm f/3.5-4.5				Micro 200mm f/4 IF			
35-70mm f/3.3-4.5				UV 105mm f/4.5			
35-105mm f/3.5-4.5				<b>Other Nikkors</b>			
35-135mm f/3.5-4.5				Reflex 500mm f/8			
35-200mm f/3.5-4.5				Reflex 1000mm f/11			
80-200mm f/4				Reflex 2000mm f/11			
50-300mm f/4.5 ED				PC 28mm f/3.5			
100-300mm f/5.6				PC 35mm f/2.8			
				Medical 120mm f/4 IF			

Compatible



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We take the world's  
greatest pictures.<sup>®</sup>