

AUTOFOCUS

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Camera Focusing Systems

- ▶ Cameras have two types of focusing; Automatic and Manual
 - Automatic (Autofocus) is accomplished by the electronics in the camera according to how you set it up
 - Doesn't work in low light situations
 - Works well with tracking moving subjects
 - Has different modes of engaging the autofocus engine
 - Manual requires the photographer to twist the focus ring on the lens and focus through the viewfinder or Live View
 - Almost impossible to do when the subject is moving
 - Works well with still-life and distant subjects
 - Only as good as your eyesight

Selecting Autofocus

- ▶ There may be a switch to change between Manual and AF on your camera body
 - Typically on the front of the camera body and next to the lens
- ▶ Some cameras select between autofocus and manual in the menu



Types of Autofocus

▶ AF-S

- Single Servo Autofocus
 - Typically used on scenes that are static – portraits, landscapes

▶ AF-C

- Continuous Servo Autofocus
 - Typically used on subjects that have movement – wildlife, sports

▶ AF-A

- Auto Servo Autofocus
 - The camera takes control of focusing – Scene mode



Using Autofocus on Your Camers

▶ There are:

- Differences Autofocus capabilities in a brand line
- Differences between manufacturers

▶ Read your manual!

- Study it and practice the different modes!!



AF-S Single Servo Autofocus

- ▶ Focus is triggered by partially pressing and holding the shutter button
 - Once focus is achieved, the camera “locks” it in and stops adjusting it
 - If you push the shutter button all the way down, the camera will take a picture once focus is achieved
 - Each time the shutter button is pushed, focusing will happen again
- ▶ Allows focusing on the subject, then recomposing the shot (while holding the shutter half way down)
 - Note that it will hold the *focus* at a set distance. It will not track your focus point

AF-C Continuous Servo Autofocus


- ▶ The camera will continuously try to focus on whatever is under the AF area when autofocus is engaged.
- ▶ Autofocus is engaged by partially pressing the shutter button
 - If you recompose your shot, the AF area will track the movement and you may lose the focal point if there are varying distances in the shot
- ▶ Back Button Focusing
 - On some cameras, there is a AF-On (Sony is AF/MF) button
 - Autofocusing remains active as long as the button is pressed
 - Disable the shutter activation of autofocus when using BBF

Sample Autofocus Settings Summary

These is what the Nikon D850 has as Mode/Area
I don't use the ones highlighted in yellow

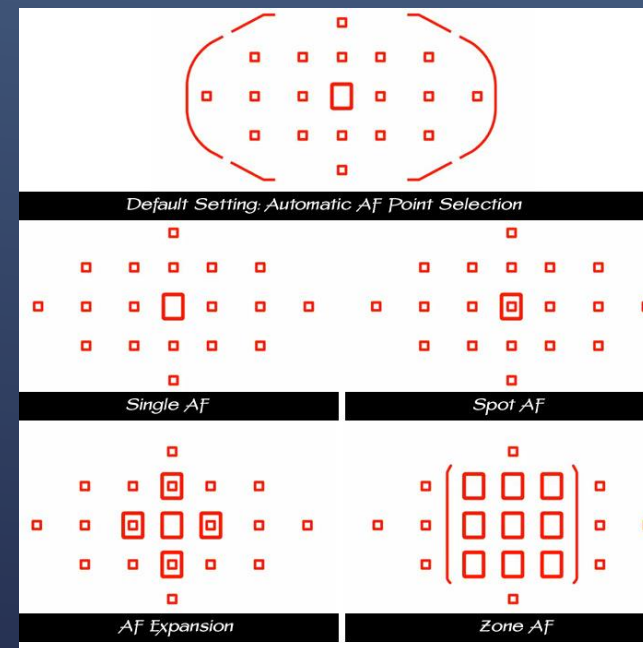
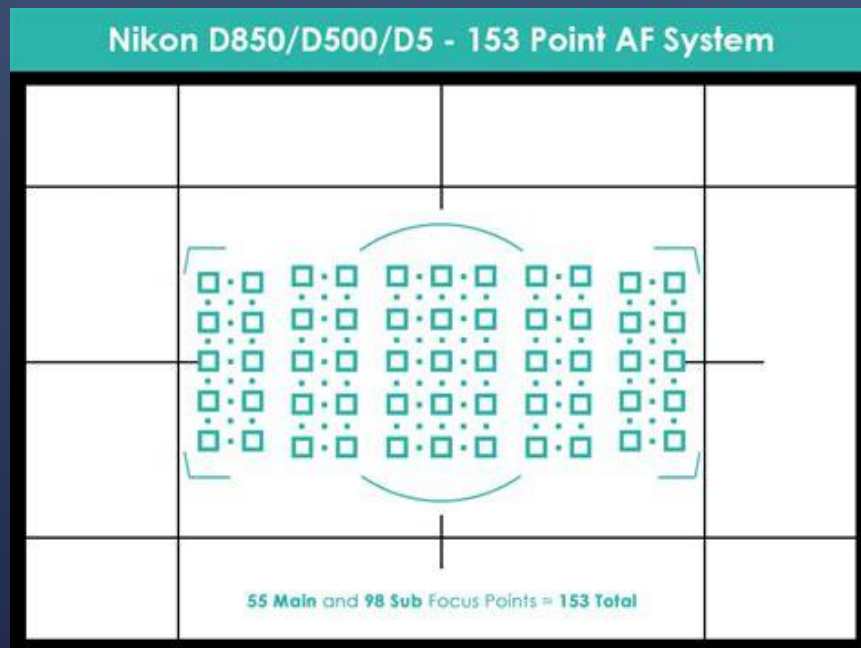
Focus Mode	AF Area Mode	Starting Area Selected by	Actual area Selected By	Area Actually Used Shown
AF-S	Single Point	User	User	Yes
AF-S	Auto-area	Camera	Camera	Yes
AF-S	Group	User	Camera	No
AF-C	Single Point	User	User	Yes
AF-C	9, 25, 72, 153-point	User	Camera	No
AF-C	3D Tracking	User	Camera	Yes
AF-C	Auto-area	Camera	Camera	Yes
AF-C	Group, GHL, GVL	User	Camera	No

Focus Areas

- ▶ Understand how your camera uses the Focus Points to determine the frame is in focus.
 - ▶ Cameras have multiple selectable Focus Points
 - ▶ The more points available, the greater the chance of focus being
 - Slightly soft
 - Not at the point you wanted
 - Slower
 - ▶ You may be able to limit the number of points available
 - Base your selection your photography needs
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Focus Areas

- ▶ Cameras have multiple focus points
 - Each point can be used by the focus engine to determine the correct focus depending on your selection

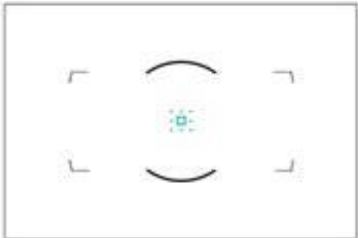


Focus Areas

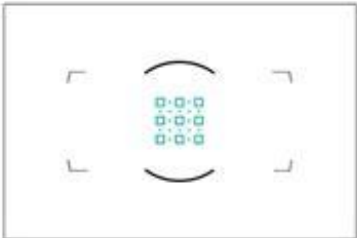
- ▶ AF-S only uses the center focus point on my camera
- ▶ AF-C uses the focus area patterns shown on my camera

Nikon D850 AF Area Modes

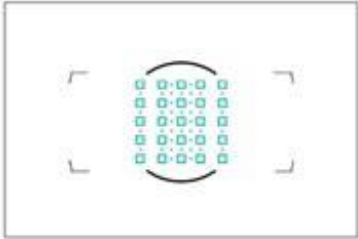
AF-C (Continuous Servo)



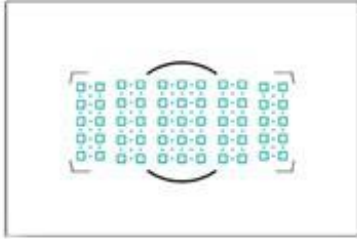
Dynamic (9 pts)
9 Total (1 main & 8 sub focus points)



Dynamic (25 pts)
25 Total (9 main & 16 sub focus points)



Dynamic (72 pts)
72 Total (25 main & 47 sub focus points)



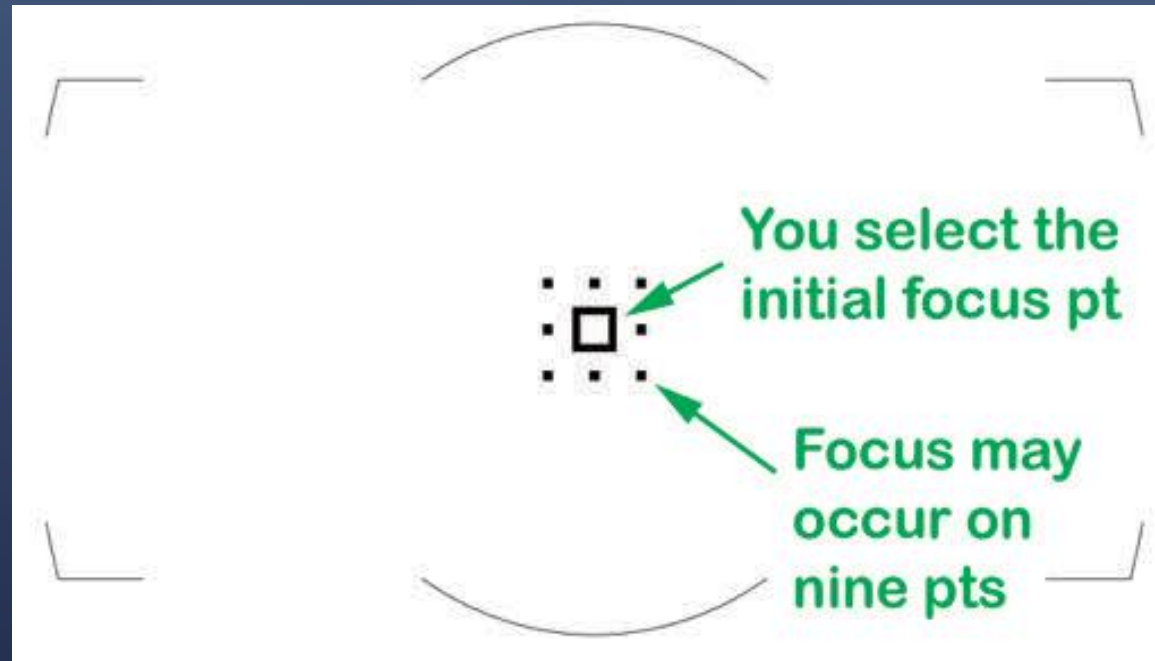
Dynamic (153 pts)
153 Total (55 main & 98 sub focus points)

The image displays four diagrams of Nikon D850 AF-C focus area modes. Each diagram shows a central focus point surrounded by sub-focus points, all enclosed within a frame. The top-left diagram shows a central point with 8 sub-points in a 3x3 grid. The top-right diagram shows a 3x3 grid of 9 main points with 16 sub-points. The bottom-left diagram shows a 5x5 grid of 25 main points with 47 sub-points. The bottom-right diagram shows a 7x7 grid of 49 main points with 98 sub-points.

Focus Areas

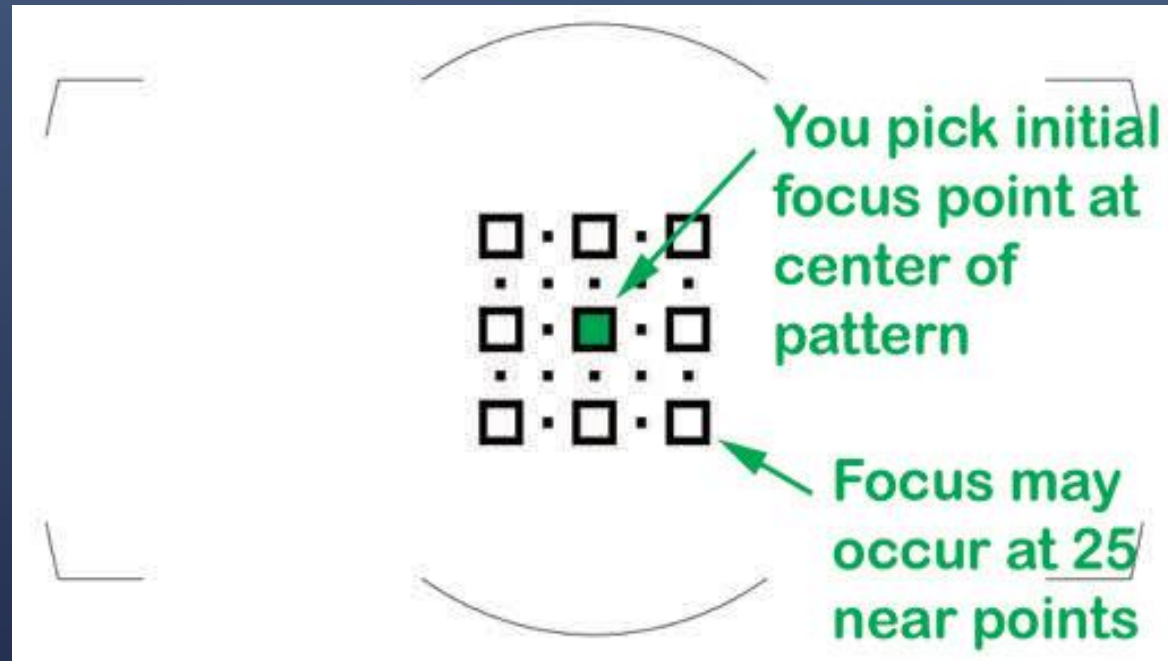
▶ 9 point

- 1 main point and 8 sub points
- Move it around with a joystick or wheel



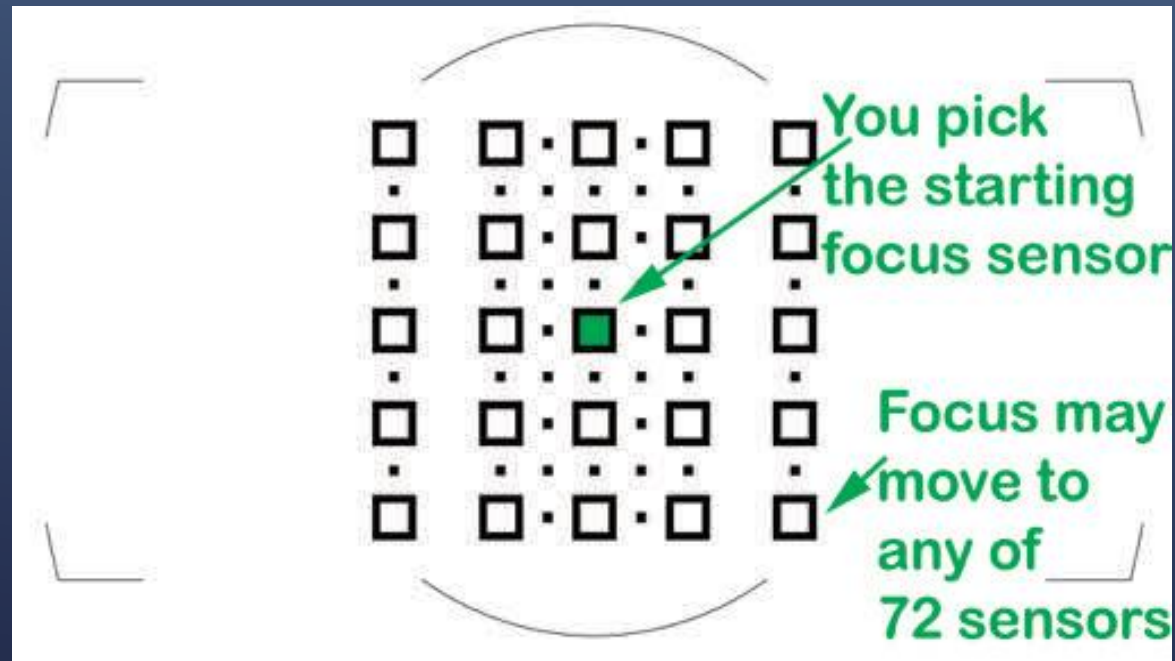
Focus Areas

- ▶ 25 point
 - 9 main point and 16 sub points
 - Move it around with a joystick or wheel



Focus Areas

- ▶ 72 point
 - 25 main point and 47 sub points
 - Move it around with a joystick or wheel




Photographing Static Scenes – AF-S

▶ Choose Focus Mode

- AF-S
 - Compose your scene or portrait
 - Move your focal point to where you want the focus to be
 - Focusing will occur when you press the shutter half-way down
- AF-C with Back Button Focus

Photographing Action AF-C

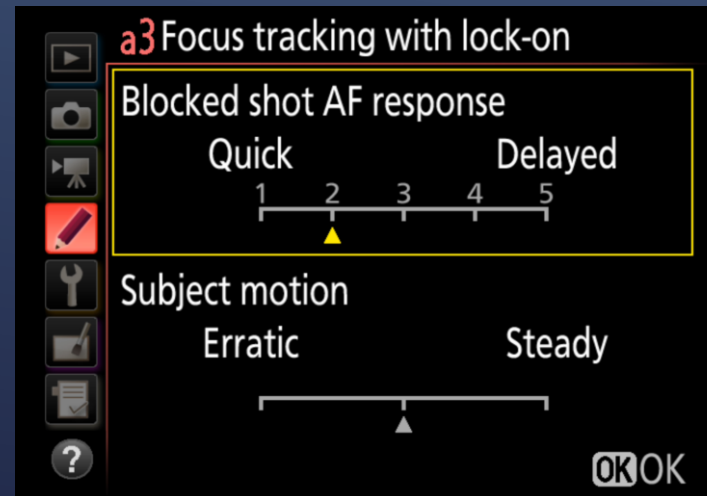
- ▶ Use Back Button Focus if your camera supports it
 - ▶ Disable shutter release focusing
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Photographing Action AF-C

- ▶ Focus has “stickiness”
 - If you drift off the target, you want the focus to remain the same for a brief period
 - Stickiness gives you time to reacquire the target with the focus still at the same distance
- ▶ This “stickiness” can fight you
 - You drift off target for longer than the “stickiness” and the focus engine starts hunting for a new target
 - You reacquire the target but are out of focus
 - You have to wait to overcome the “stickiness” to regain the correct focus
 - The bird has flown and you lose the shot
- ▶ Stickiness is very brief – 1 to 3 seconds

Photographing Action

- ▶ If your camera has Focus Tracking with Lock-on (Nikon) or AI Servo (Canon)
 - Adjust Blocked shot AF response to more or less delay to handle obstacles
 - Adjust Subject motion between Erratic and Steady
- ▶ Tells the camera how quickly it should expect changes in subject motion, especially coming towards the camera or moving away



Examples



10 shots in burst mode, about 2 seconds

ISO640
330mm
F7.1
1/3200

Examples



Links

▶ [Backcountry Gallery](#)

- Excellent source of videos and books on moving wildlife photography
 - Good for any action photography
 - Steve Perry - Nikon
 - Secrets to the Nikon Autofocus System – ebook \$18.87
 - Secrets to Exposure and Metering for Nikon – ebook \$22.97
 - Covers most Nikon models, free updates

▶ [Nikon eManuals](#)

▶ [Canon eManuals](#)

▶ [Sony eManuals](#)

▶ [Pentax eManuals](#)

