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Canon EOS-1D X

AF Setting Guidebook

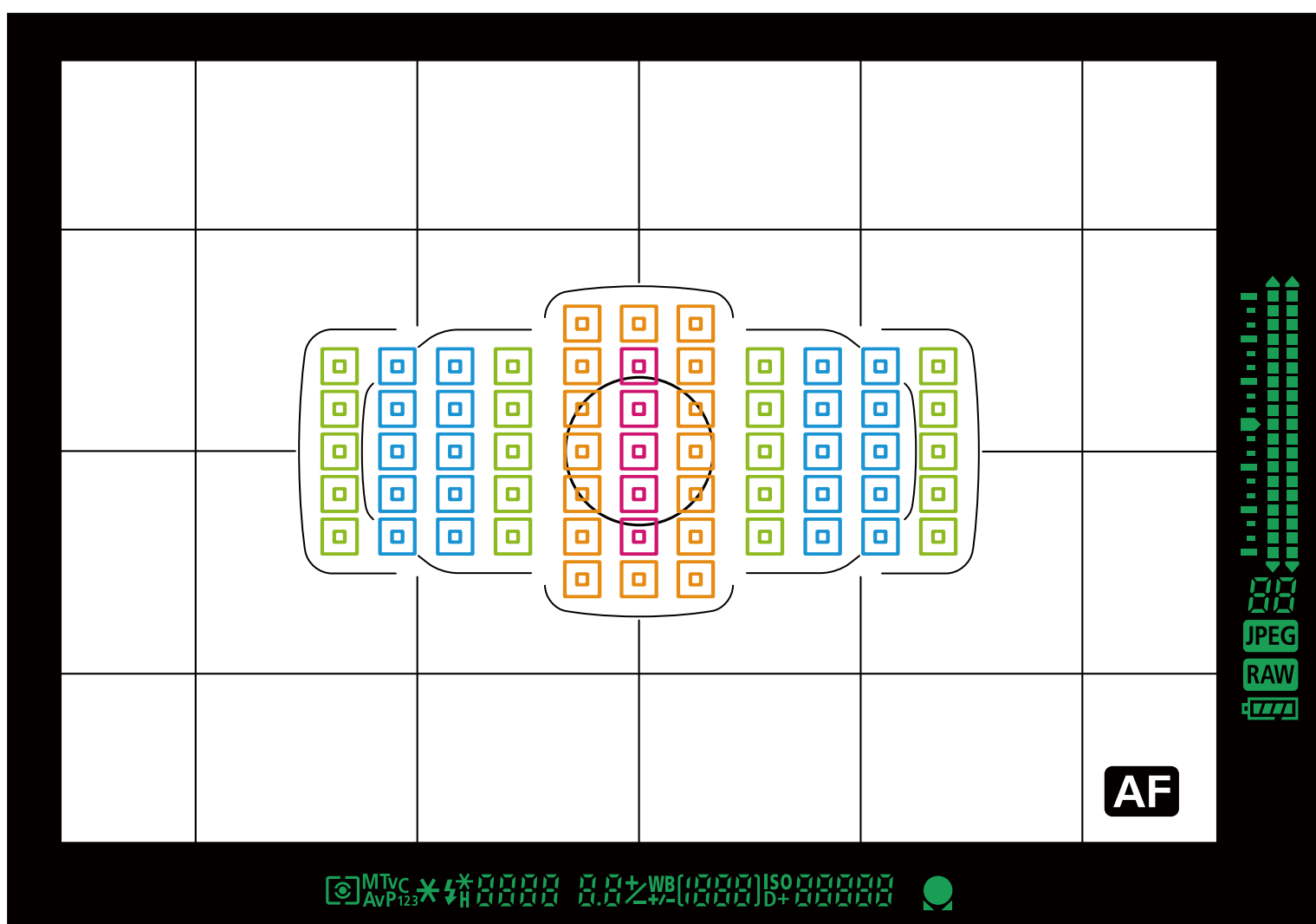
Detailed explanations of how to master high-performance AF features to capture that perfect moment



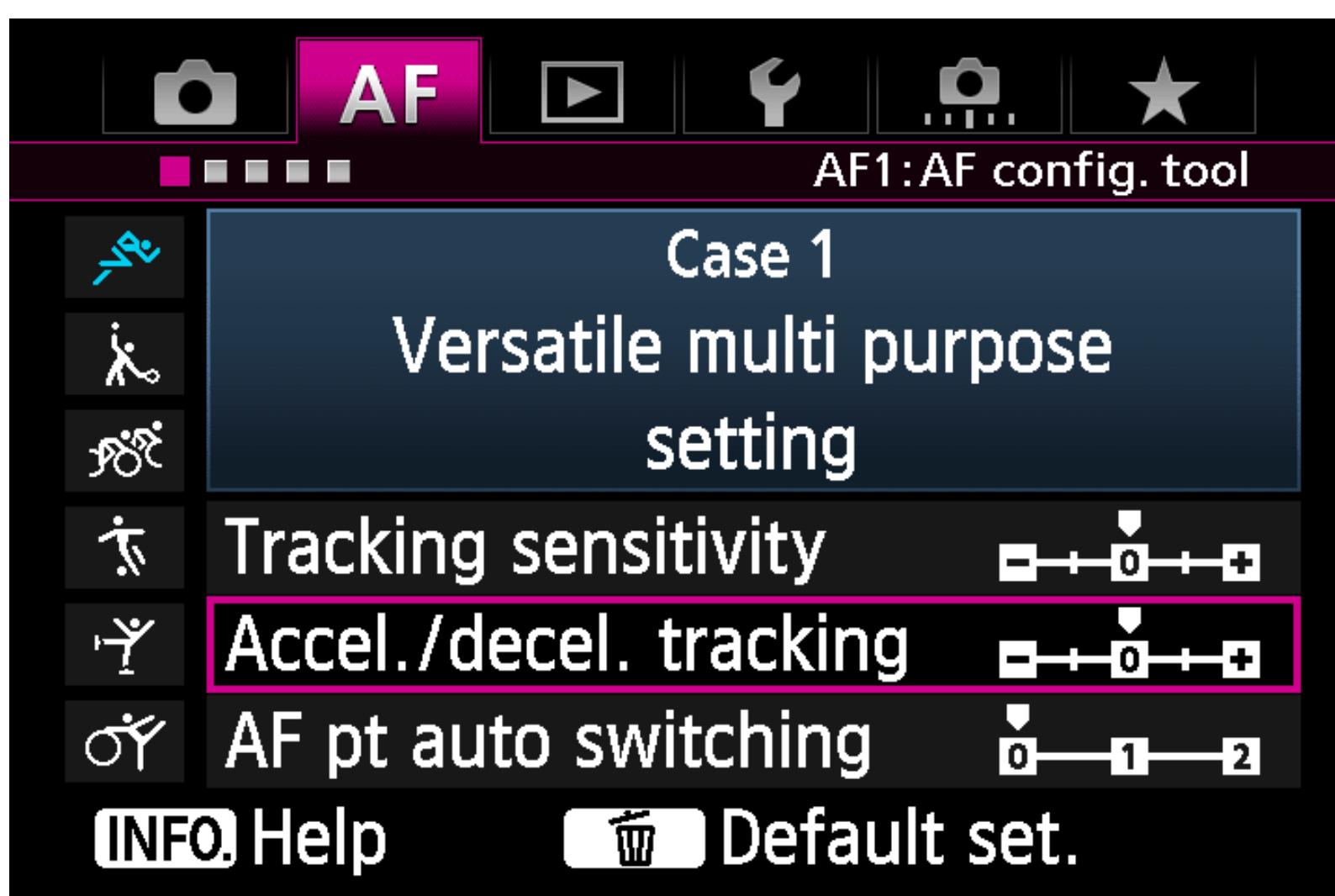
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Features of The AF on EOS-1D X

AF Custom Guide Functions that Controls 61-Point High-Density Reticular AF



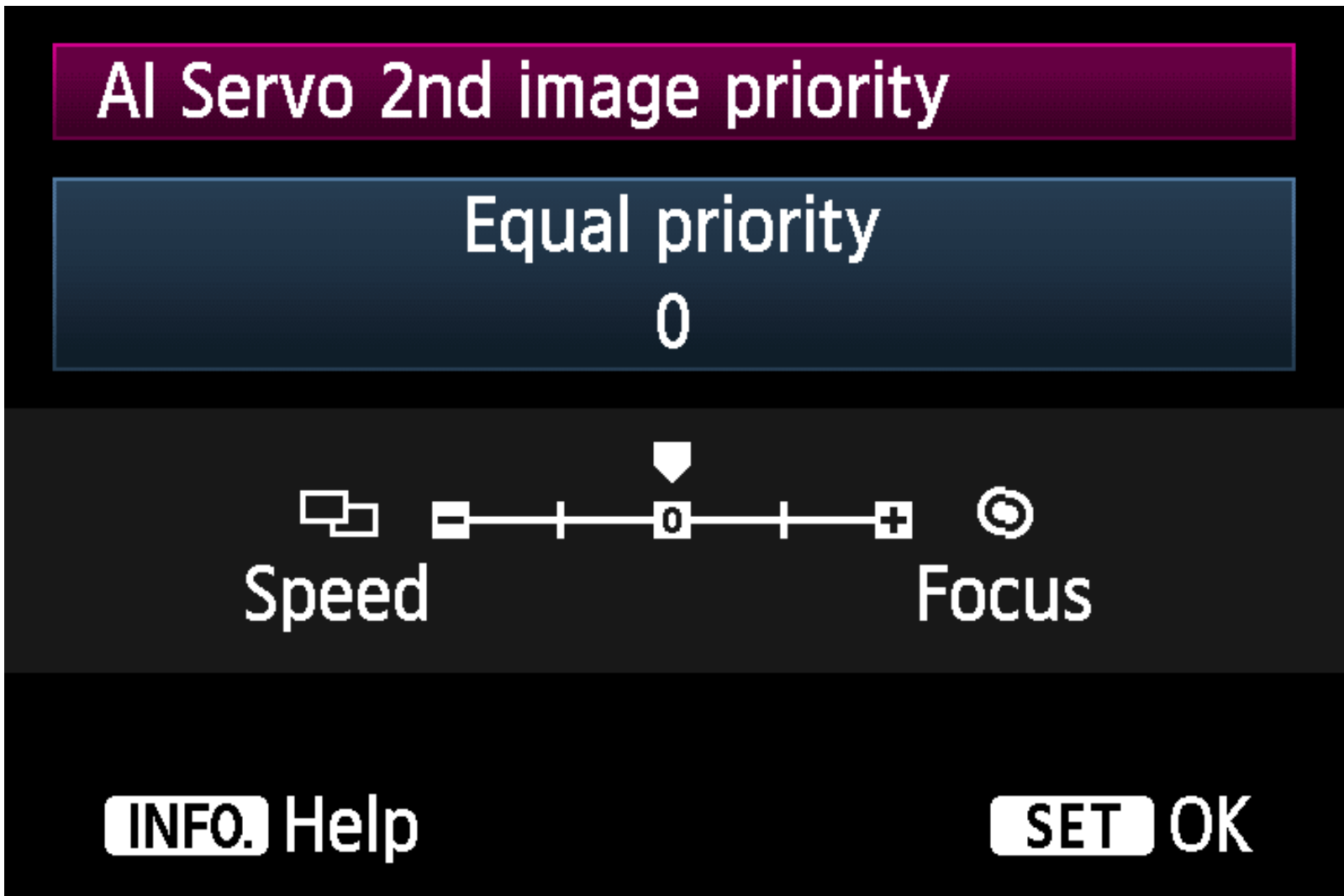
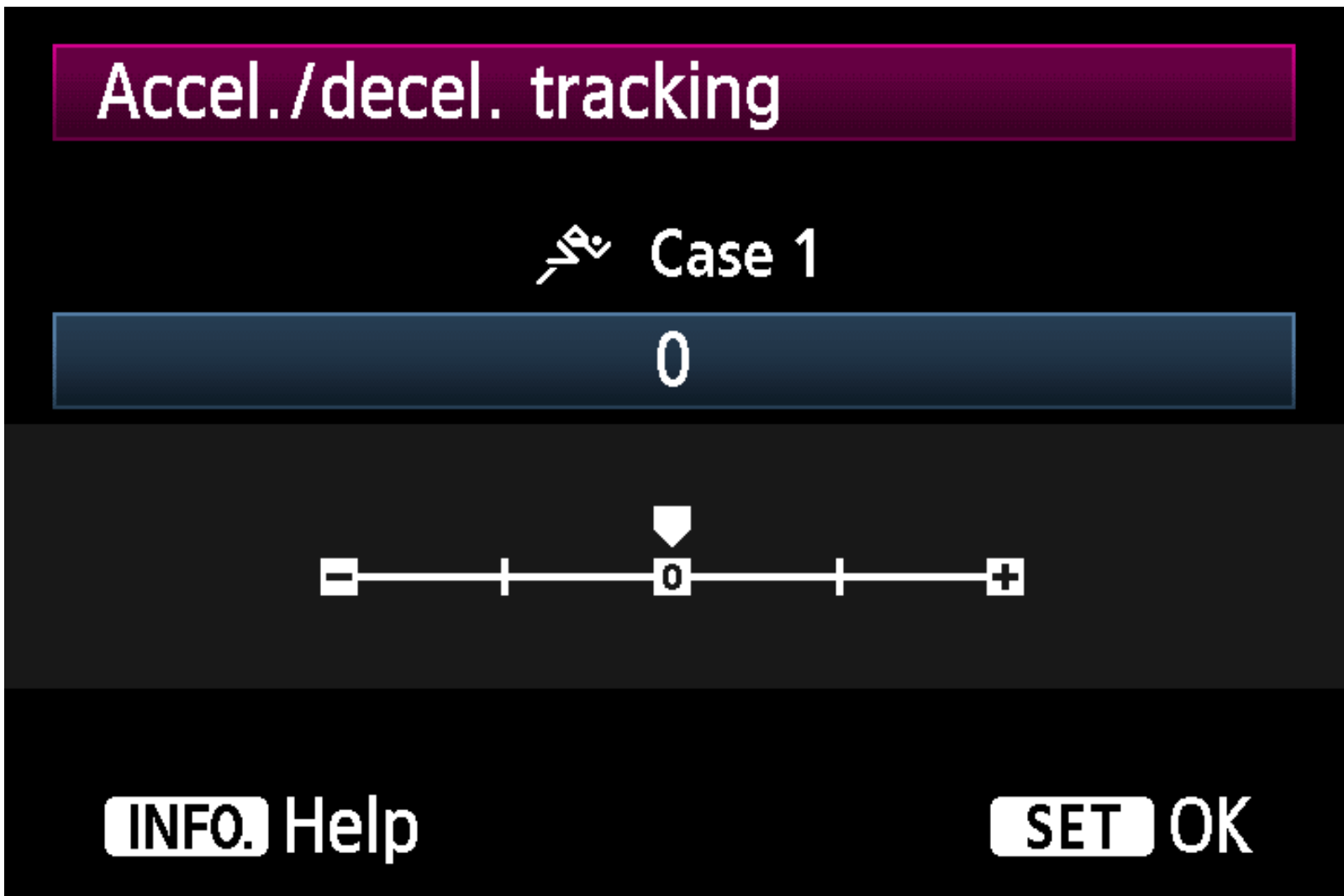
The EOS-1DX is equipped with a newly-developed 61-Point High-Density Reticular AF. By arranging the 61 AF points in a dense concentration, the level of freedom in composition, and tracking performance of quick-moving subjects is improved. In combination with AI Servo AF III, which incorporates a new algorithm ensuring, accurate focusing on a subject is possible. You can also effectively set AI Servo AF features using the AF Configuration Tool. Because you can choose from six different presets, the correct settings are always quick and easy, without all the trouble that comes from adjusting settings for individual parameters to match the subject or scene.





Firmware V2.0

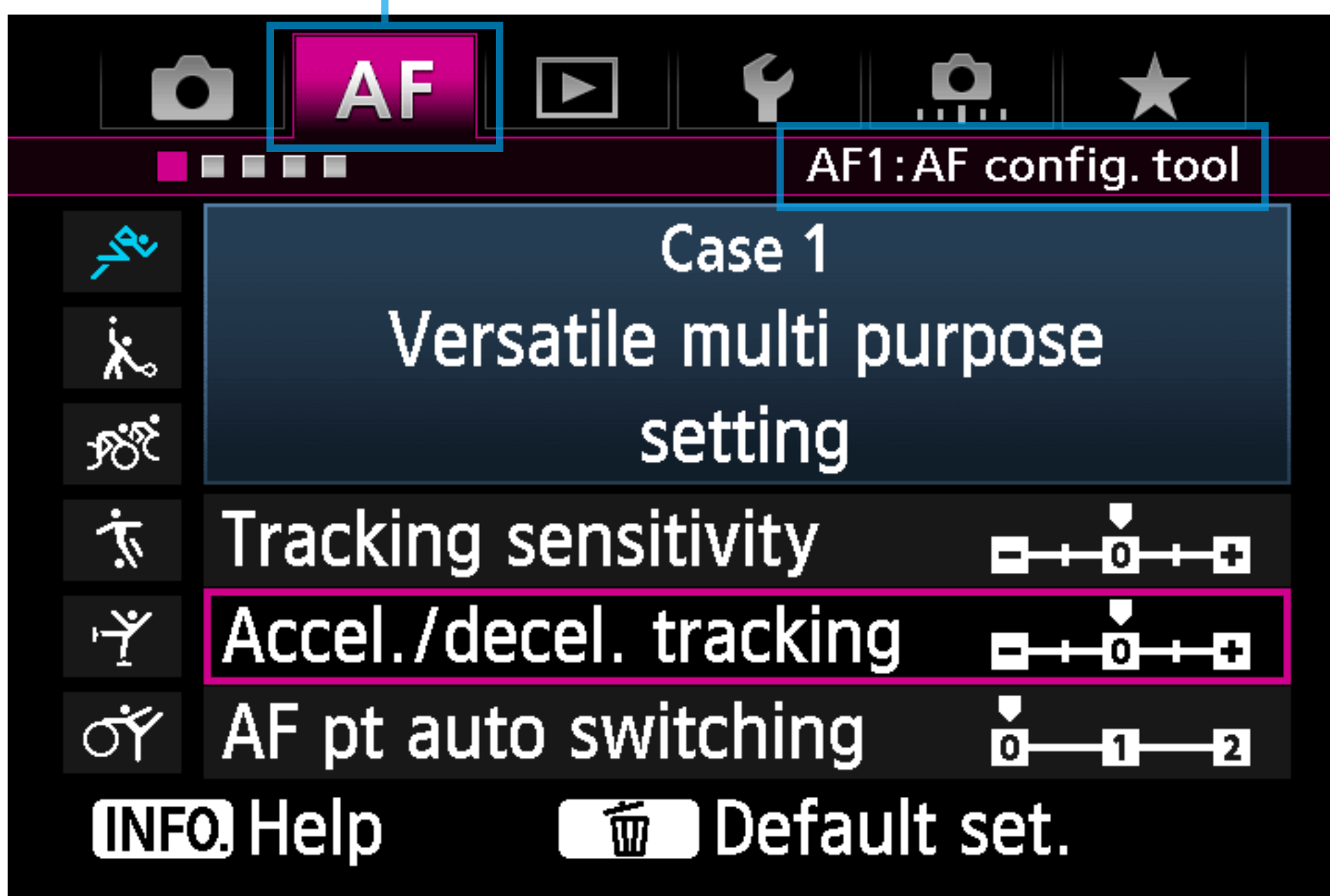
In the new EOS-1DX firmware V2.0, AF performance is even further improved and operability is expanded with a focus on AF. AF performance in low-light conditions is improved for the first shot of AI Servo AF, demonstrating its true ability when shooting subjects in dark locations. Additionally, this version incorporates numerous helpful features that assist in shooting moving subjects, such as newly-added special AF parameters to deal with speed changes in moving subjects, and additional functions that can be assigned to the button customization. This AF Setting Guidebook introduces effective settings to make full use of the EOS-1D X high-performance AF features including new functions of V2.0 of the firmware.



New AF Setting Operability

All AF-related menu functions now in a separate menu

AF-related setting items
in the AF menu



The AF1 tab includes
the AF Configuration Tool

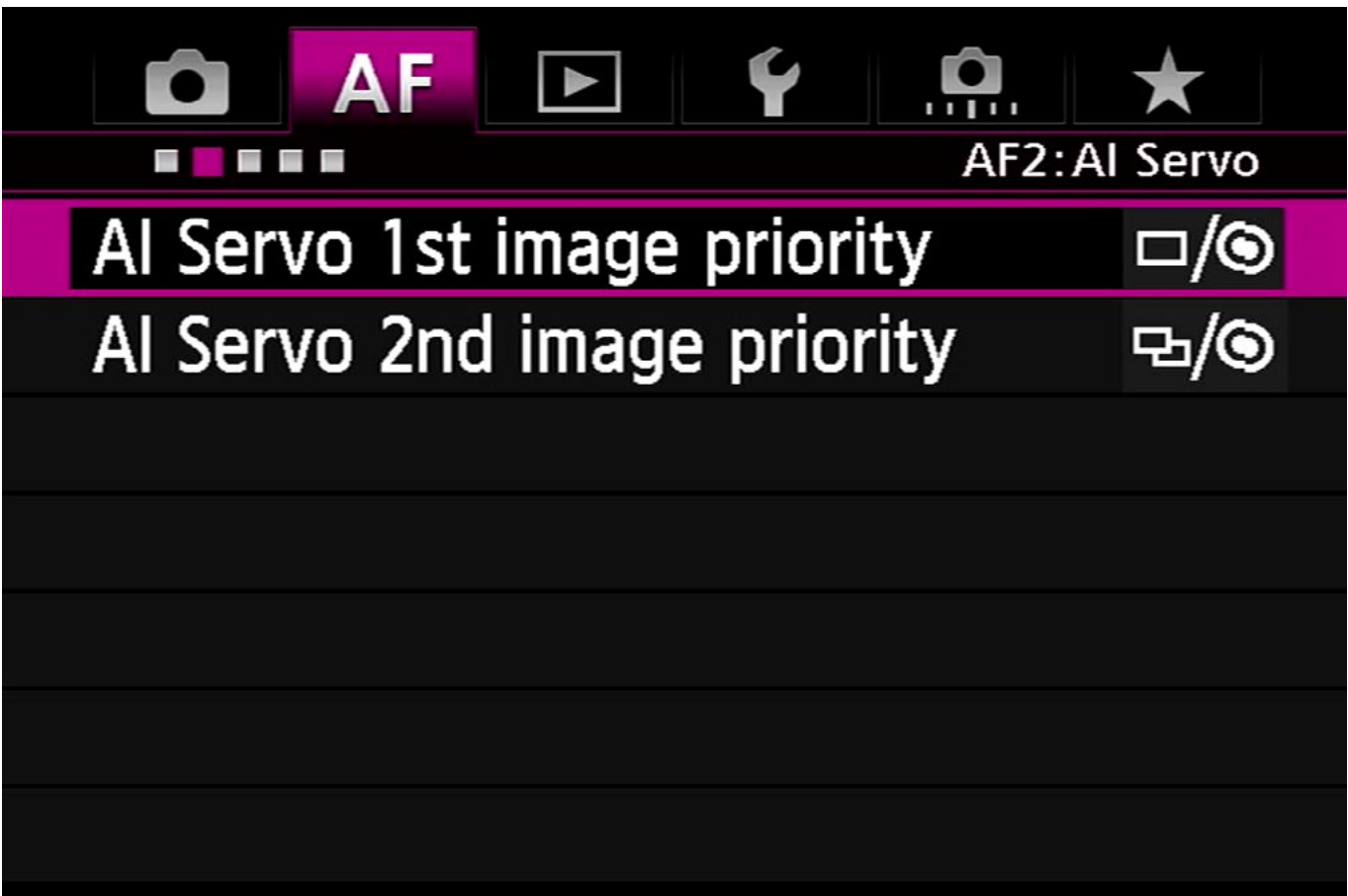
The AF1 tab is important when shooting moving subjects using the AI Servo AF of the EOS-1D X. It is possible to effectively set AI Servo AF characteristics by selecting the option that closely matches the scene with the AF Configuration Tool.

The Various AF-related functions are now incorporated into an AF menu tab

The various AF-related settings that were previously included in the custom functions (C.Fn) menu, have been incorporated into the new AF menu tab. This makes smooth access to AF-related settings possible. In particular, the AF Configuration Tool included in tab AF1 can be used to easily match settings with the AI Servo AF characteristics, making it an important feature that takes advantage of the advanced AF performance on the EOS-1D X. By selecting from six presets (Case 1 - Case 6), makes it possible to set the AI Servo AF characteristics to most accurately suit the subject's movement, and scene conditions. It is also possible for fine control to adjust each parameters separately.

(Refer to P. 9 – 47 for AF Configuration Tool details.) Tabs [AF 2] – [AF 5] include a variety of settings such as shutter-release timing settings, a setting for the number of AF points that can be selected and AF area selection method.

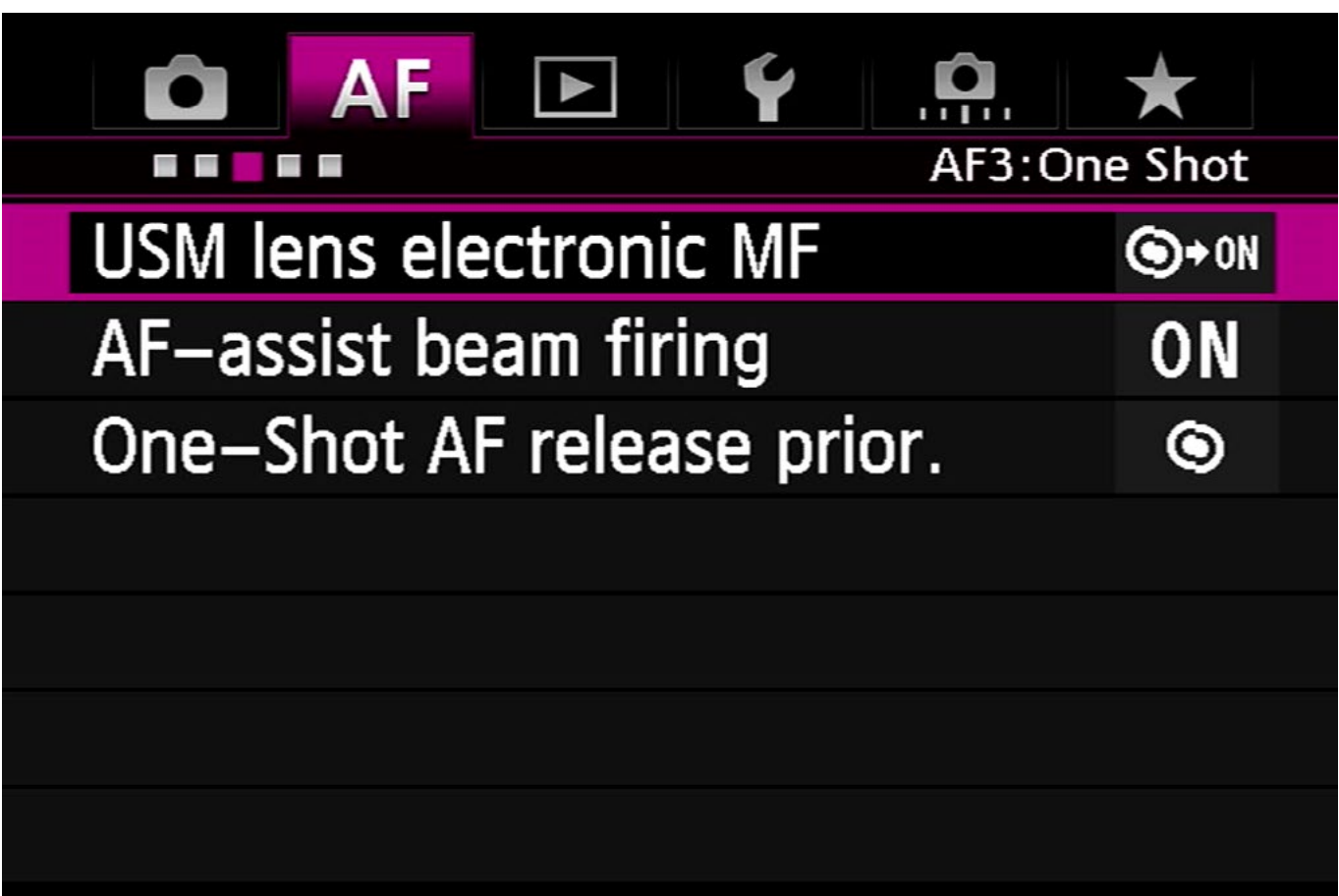
Various settings for AF-related features can be made with AF menus [AF2] - [AF5]



AF2 AI Servo

Settings related to the camera priorities when using AI Servo AF

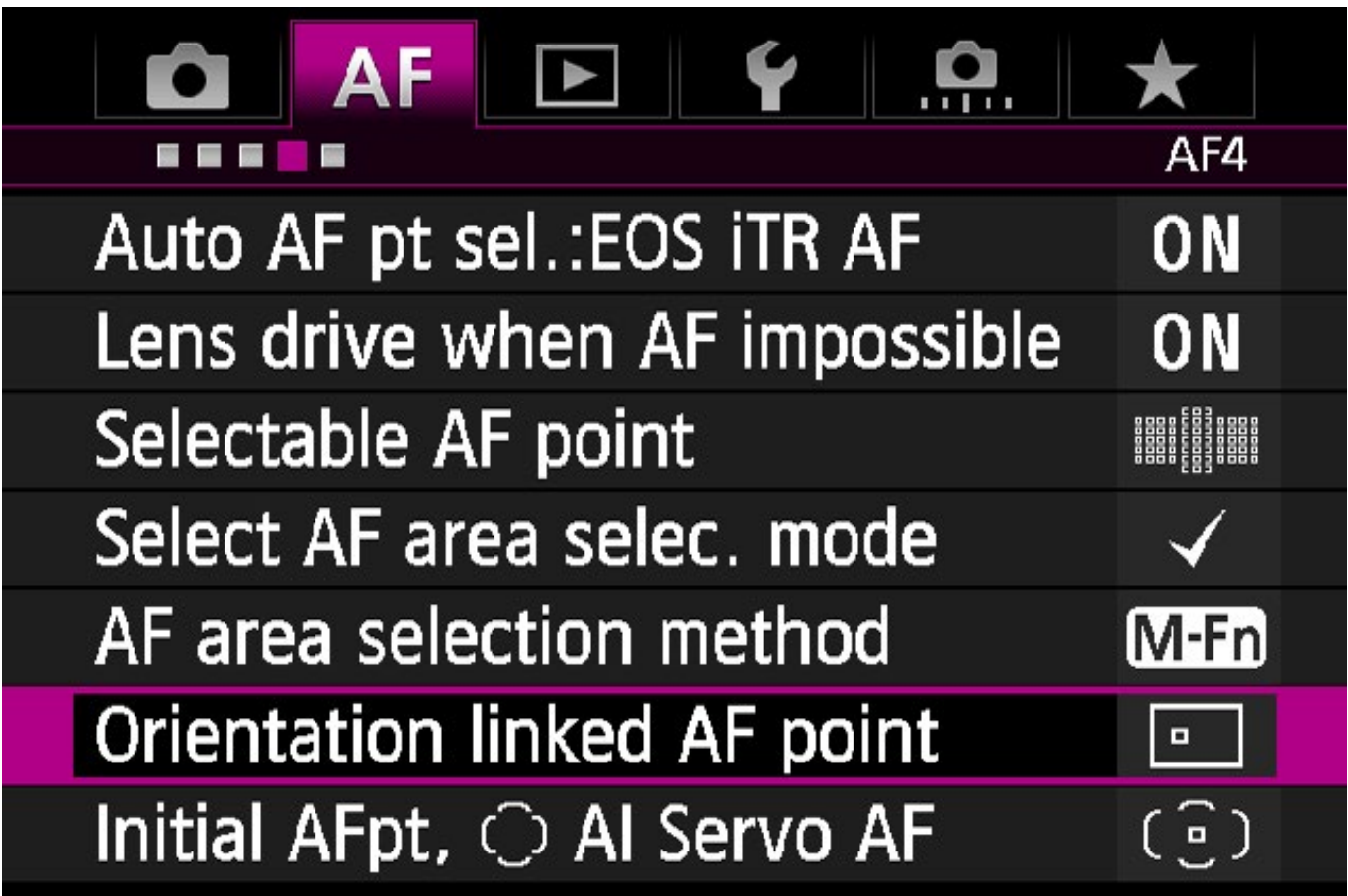
The [AF/2] tab includes settings related to cameras priority concerning shutter-release timing when using AI Servo AF. [AI Servo 1st image priority] and [AI Servo 2nd image priority] make it possible to make focusing the priority slowing the shutter-release timing, or prioritize faster shutter-release.



AF3 One-Shot

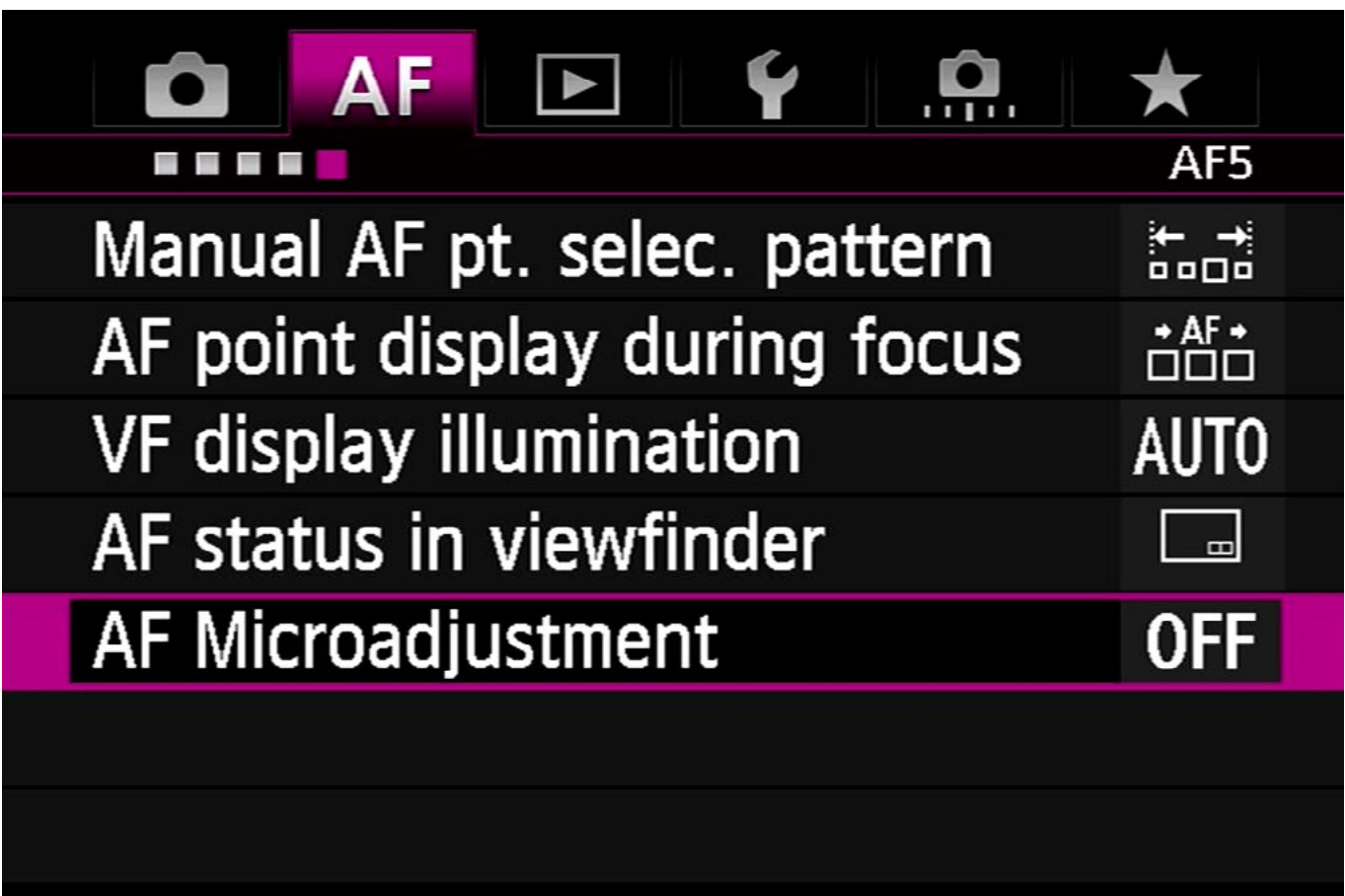
Settings related to focusing and shutter-release timing when using One-Shot AF release priority

Within the [AF3] tab, the [One-Shot AF release priority] settings related to focusing and shutter-release timing when using One-Shot AF release priority. The other options [USM lens electronic MF] and [AF-assist beam firing], control the manual focus operation of some lenses and the operation of AF assist function of attached Speedlites.



AF4
Includes general settings related to AF point selection

Select which and how AF points are selected. This menu includes settings related to [AF area selection mode] ([Automatic AF point selection criteria], [Selectable AF points], [AF area selection mode], [AF area selection method], and [Orientation linked AF point]). In addition there is the [Lens drive when AF impossible] option in this menu.



AF5
Includes general settings related to display of AF points, etc.

Within [AF5] tab are settings that control how AF points are displayed in the viewfinder such as ([AF point display during focusing], [VF display illumination], and [AF status in viewfinder]). With the (Manual AF pt. selec pattern) the AF point selection can stop at the peripheral AF point or instead loop back to the opposite side of the AF area. For those who need to make fine adjustments to the focus position [AF Microadjustment] is available.

AF Configuration Tool [Presets]

**Overview of AF Configuration
Tool [Presets]**

Case 1
Versatile multi-purpose setting

Case 2
**Continue to focus-track even
when the subject momentarily
moves from the AF points**

Case 3
**Focus instantly on subjects that
move into the AF points**

Case 4
**Focus track subjects that
accelerate or decelerate quickly**

Case 5
**Focus on subjects with erratic
movement**

Case 6
**Focus on subjects with erratic
movement and changes in speed**

Overview of AF Configuration Tool [Presets]

A combination of parameters to best suit the characteristics of subject movement have been used to create the presets from Case 1 – Case 6. By selecting the appropriate icon, the different AI Servo AF settings can be selected to suit the subject.



The best parameters for different subjects and shooting scenes are combined into presets from Case 1 - 6



- | | |
|---------------|---|
| Case 1 | Versatile multi-purpose setting |
| Case 2 | Continue to track subjects, ignoring possible obstacles |
| Case 3 | Instantly focus on subjects suddenly entering AF points |
| Case 4 | For subjects that accelerate or decelerate quickly |
| Case 5 | For erratic subjects, moving in any direction* |
| Case 6 | For subjects that change speed and move erratically* |

*This setting is not available with the Single-point Spot AF(Manual selection) and Single-point AF(Manual selection) modes

Select from Case 1 - Case 6 to match subject scenarios

When the [AF1] tab on the EOS-1D X is opened, [Case1 Versatile multi-purpose setting] a running man icon will be displayed. This is the default option for the AF Configuration Tool. Different presets to match the characteristics of the type of subject and its movement, and the shooting conditions, can be selected from Case 1 - Case 6. By simply selecting one of these cases, settings for the AI Servo AF characteristics that match the scene will be used.

These six presets are combinations of the following three parameters, [Tracking sensitivity], [Accel./decel. tracking], and [AF pt auto switching] (P. 32 - 47). Using the presets sets the parameters in the most effective way. However, if you wish It is also possible to manually adjust the parameters individually.

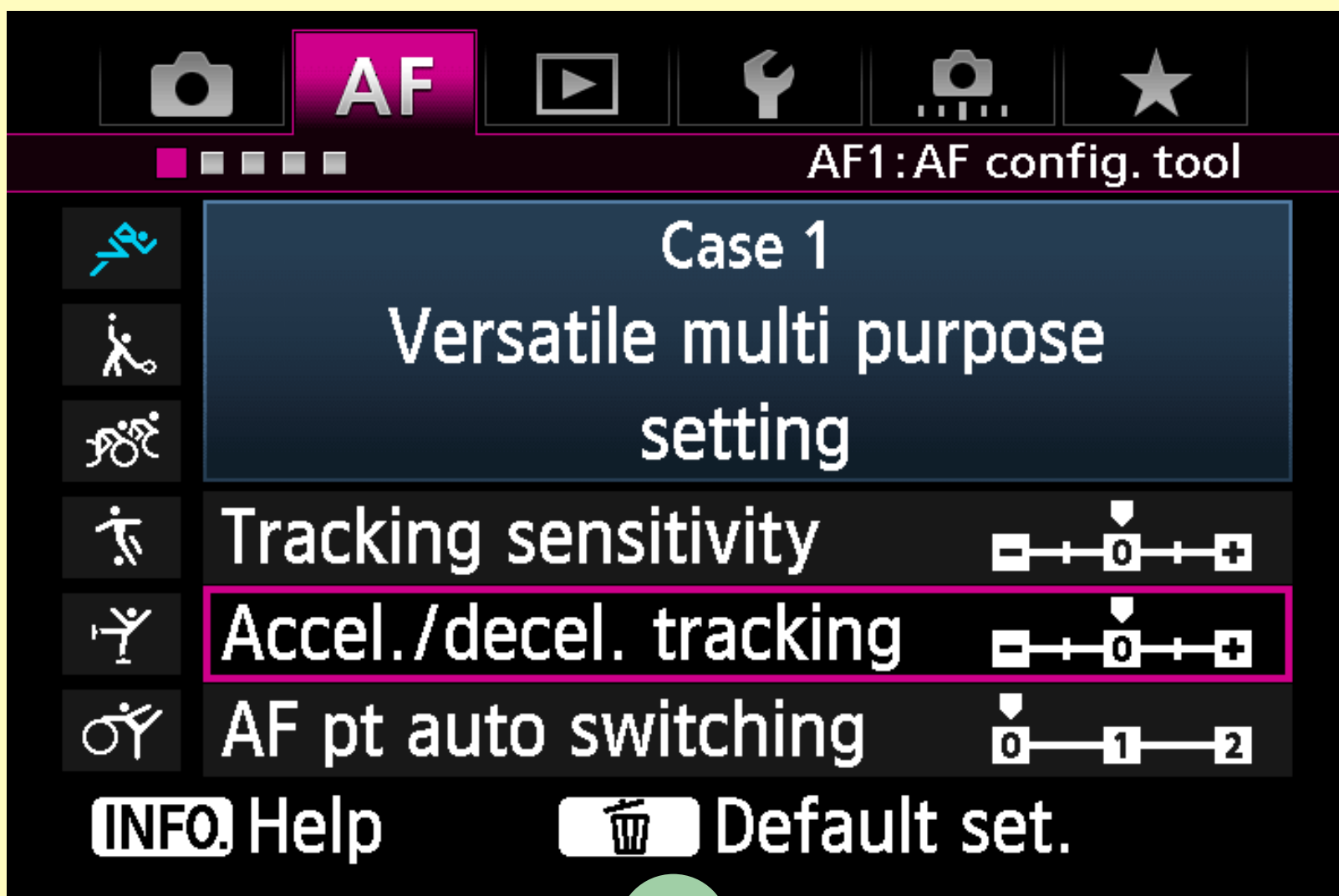


The AF Configuration Tool is a function for setting AI Servo AF characteristics. Therefore, it's settings will have no function when using [One shot AF].

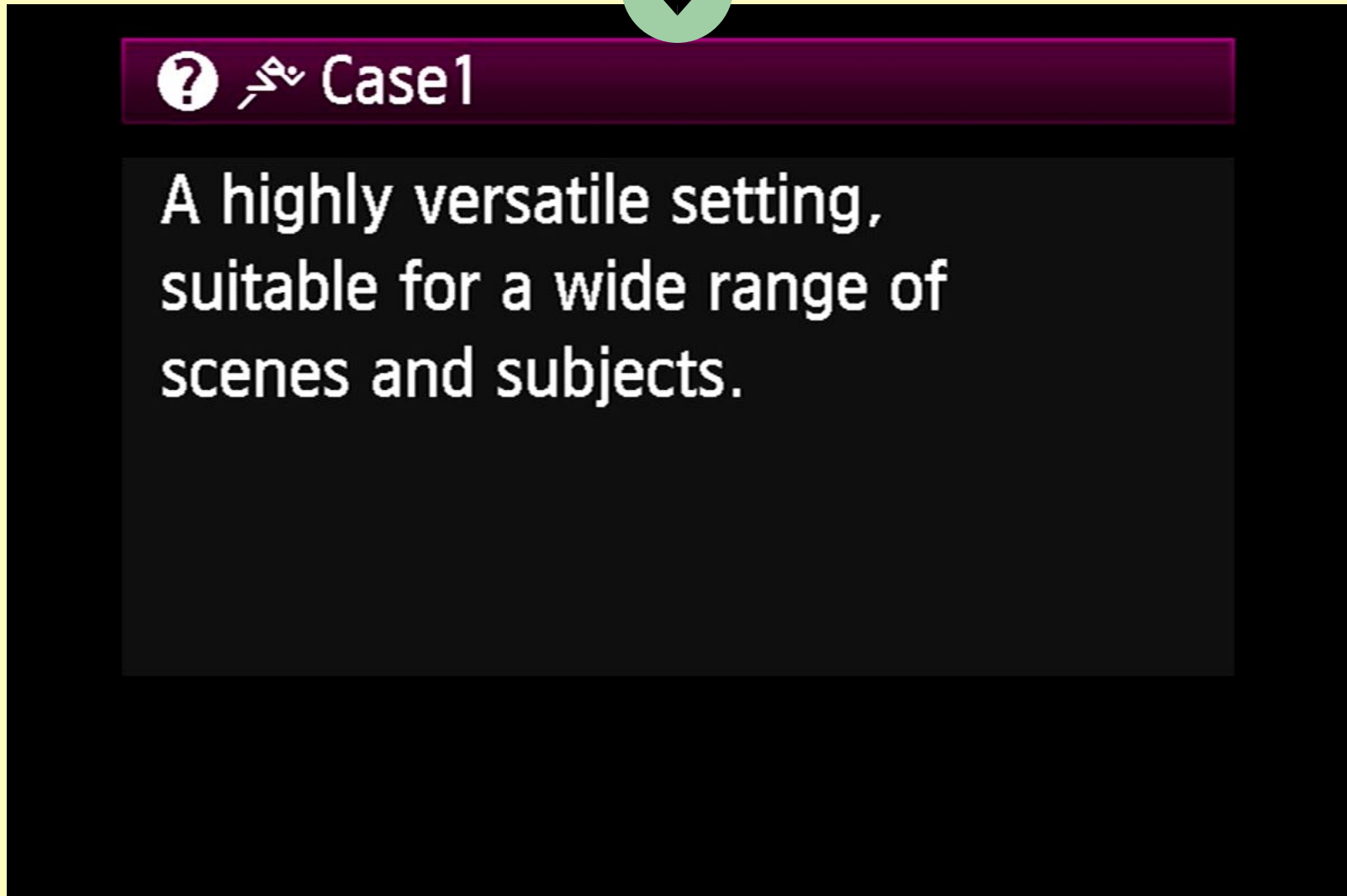
Hints & Tips

Pushing INFO. button while any of [Case] is indicated in display, then text information of AF Setting Characteristics or Shooting Scene Example is indicated.

Moving the purple square over Case 1 – Case 6 will display the name of each case, for example [Case1 Versatile multi-purpose setting]. If you want more detailed information, you can press the INFO button. This will display the help screen containing information about shooting scene examples and which settings to alter and when.



Press the INFO button



Content displays on the help screen

Case 1

Versatile multi-purpose setting

The [AF Configuration Tool] [Case 1] is the basic AI Servo AF setting on the EOS-1D X.



Precise and accurate focusing is possible for a wide range of subjects



Parameter default settings

Subject tracking sensitivity

[0]

Accelerate / decelerate Tracking

[0]

AF point auto switching

[0]

The [AF Configuration Tool] [Case 1] is the basic AI Servo AF setting on the EOS-1D X. As its name indicates, it is versatile and achieves a high level of tracking performance in a wide variety of scenes.

Equipped with AI Servo AF III, the EOS-1D X has improved flexibility in handling a variety of moving subjects, and superior prediction of movement for more accurate focusing. Even with a variety of difficult elements such as extremely fast movement, sudden changes in speed, and interruptions by obstacles, AI Servo AF III overcomes these and is able to capture the subject.

Case 1 is the recommend setting to start shooting with, Case 1 will provide great results when shooting a variety of sports and moving subjects. When more specific settings for individual cases are desired, please try Case 2 – Case 6 to match shooting conditions.

Case 1

Photo

View large
image by
touching



Case 1 can be used to great advantage when shooting moving subjects, making it possible to accurately capture fast subject.



Single-Point

AI Servo AF III makes it possible to carry out precise focus for subjects in a wide variety of conditions

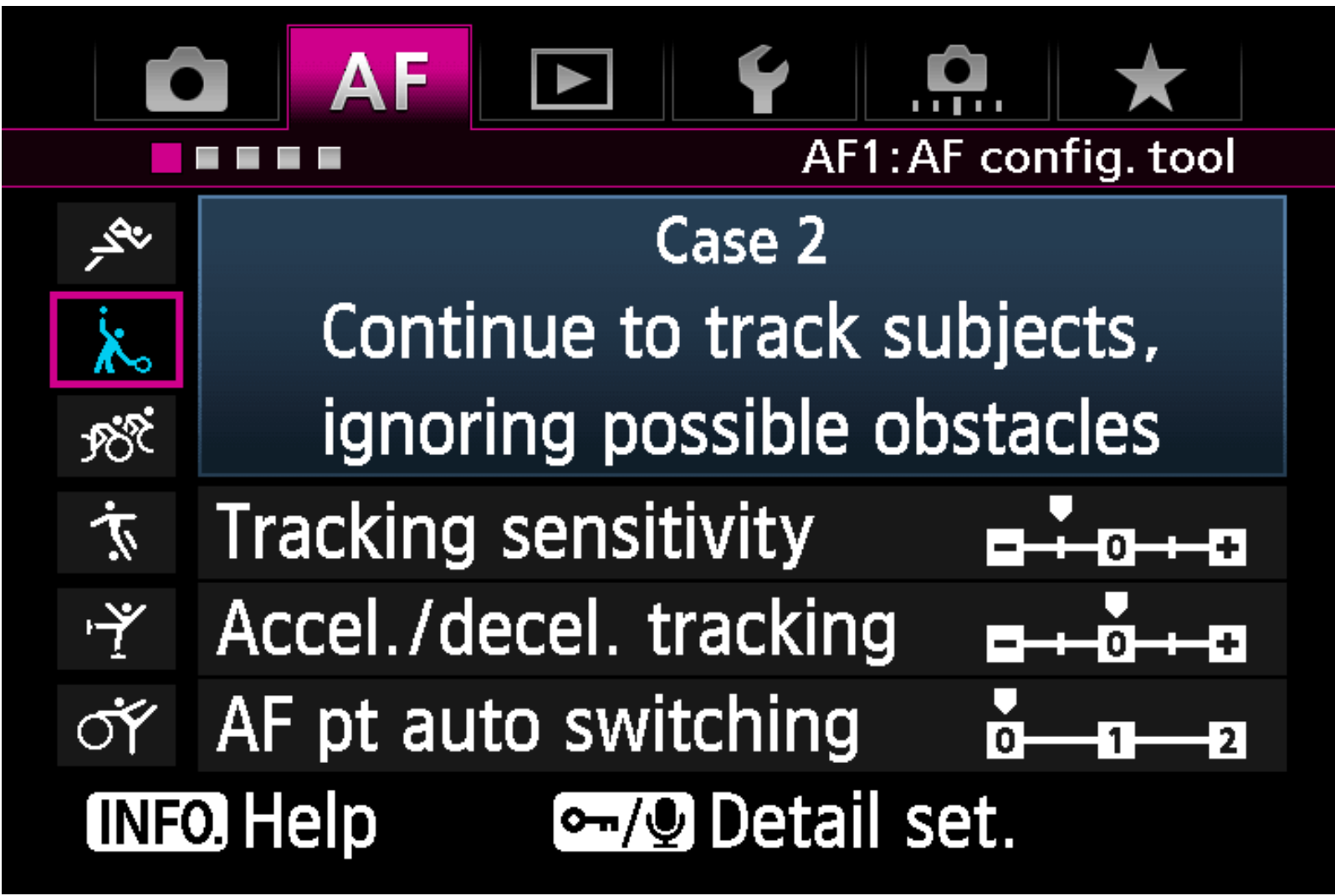
AF on the EOS-1D X is equipped with a new focus tracking algorithm, AI Servo AF III. It supports an even greater variety of subject movement than before, and by utilizing the high level tracking performance of the AI Servo AF III, and Case 1 configuration setting, it can handle many different shooting conditions.

Case 2

Continue to focus-track even when the subject momentarily moves from the AF points

Case 2 is an effective setting for shooting fast moving subjects when they move away from the selected AF point, or when obstacles may momentarily obscure the subject.

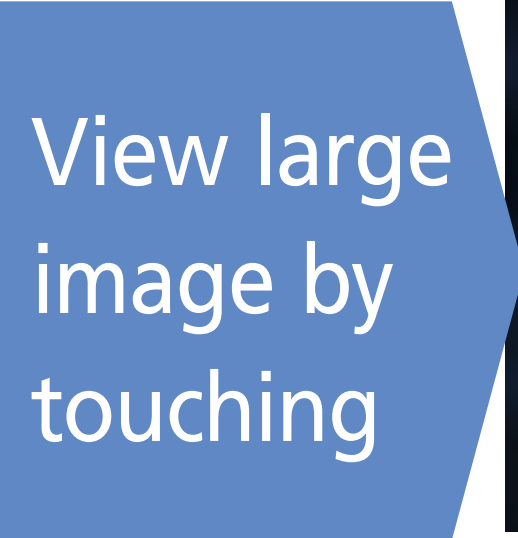
Effective when shooting scenes with fast moving subjects, or when an obstacle momentarily appears in front of the subject



Parameter default settings	[Locked on : -1]
Subject tracking sensitivity	[-1]
Accelerate / decelerate Tracking	[0]
AF point auto switching	[0]

Case 2 is an effective setting for shooting fast moving subjects when they move away from the selected AF point, or when obstacles may momentarily obscure the subject.

Sometimes when the subject moves from the selected AF point, focus can shift to the background (resulting in an out of focus subject), similarly when an obstacle obscures the subject, focus can shift to the obstacle. By selecting Case 2 in situations like these, focus will attempt to continue to track the desired subject. When a subject moves away from the AF points for an extended period (such as swimmers doing the butterfly stroke, or sports where the subject is hidden for intervals), even better performance may be achieved by manually setting the [Tracking sensitivity] parameter to [-2].



Try selecting Case 2 when shooting a tennis player with fast side to side movement. The subject will be tracked even when they move away from the AF points.



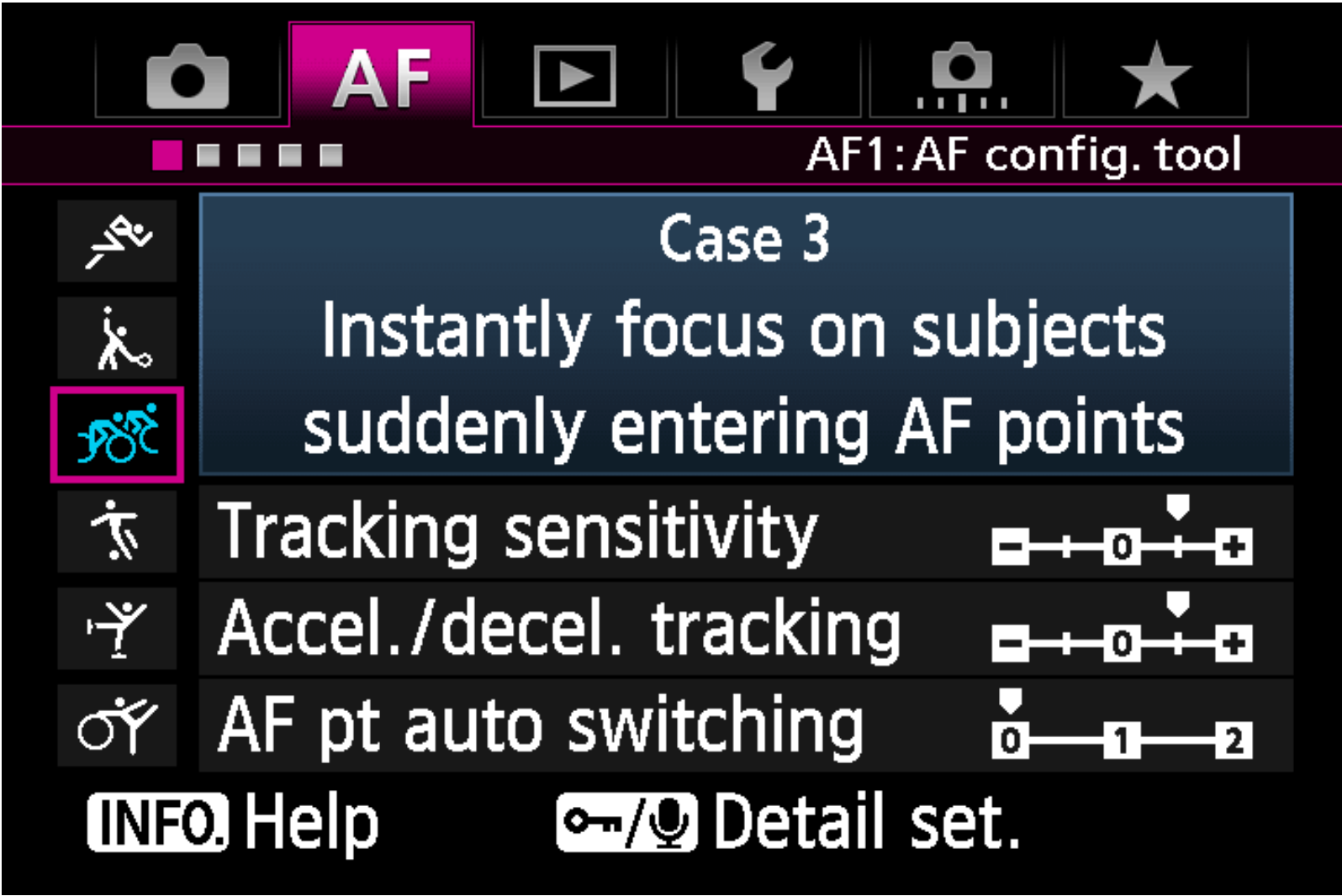
Example of a fast moving subject where the focus has shifted to the background (photo2). By selecting Case 2 for situations like this, it will be easier to focus track the subject.

Case 3

Focus instantly on subjects that move into the AF points

Case 3 is the ideal setting for situations when you want to focus quickly between subjects in the AF points.

Effective when you want to continuously photograph targeted athletes one after the other



Parameter default settings	
Subject tracking sensitivity	[Responsive: +1]
Accelerate / decelerate Tracking	[+1]
AF point auto switching	[0]

In Case 3, the [Tracking sensitivity] parameter is set to [+1]. As a result, subjects that come into the AF points will be focused on more quickly. This setting is most effective when subjects appear suddenly in the frame (for example photographing skiers in an alpine skiing downhill race,). Other shooting situations, this setting

can be extremely effective is when switching between different subjects you want to shoot (for example, at the start of a bicycle road race, when you want to shoot continuously and switch from cyclist to cyclist while focusing).

When set to Case 3, if the subject moves away from the AF points, the camera may quickly refocus on a different subject or background, in contrast to Case 2. Therefore, it is recommended that you use this setting only when you have a particular objective as indicated above.

Change the target in sequence and shoot continually

1. Shoot the whole group while focusing on the cyclist in the center



2. Focus on the lead cyclist



3. Focus on the right side cyclist



4. Focus on the left side cyclist



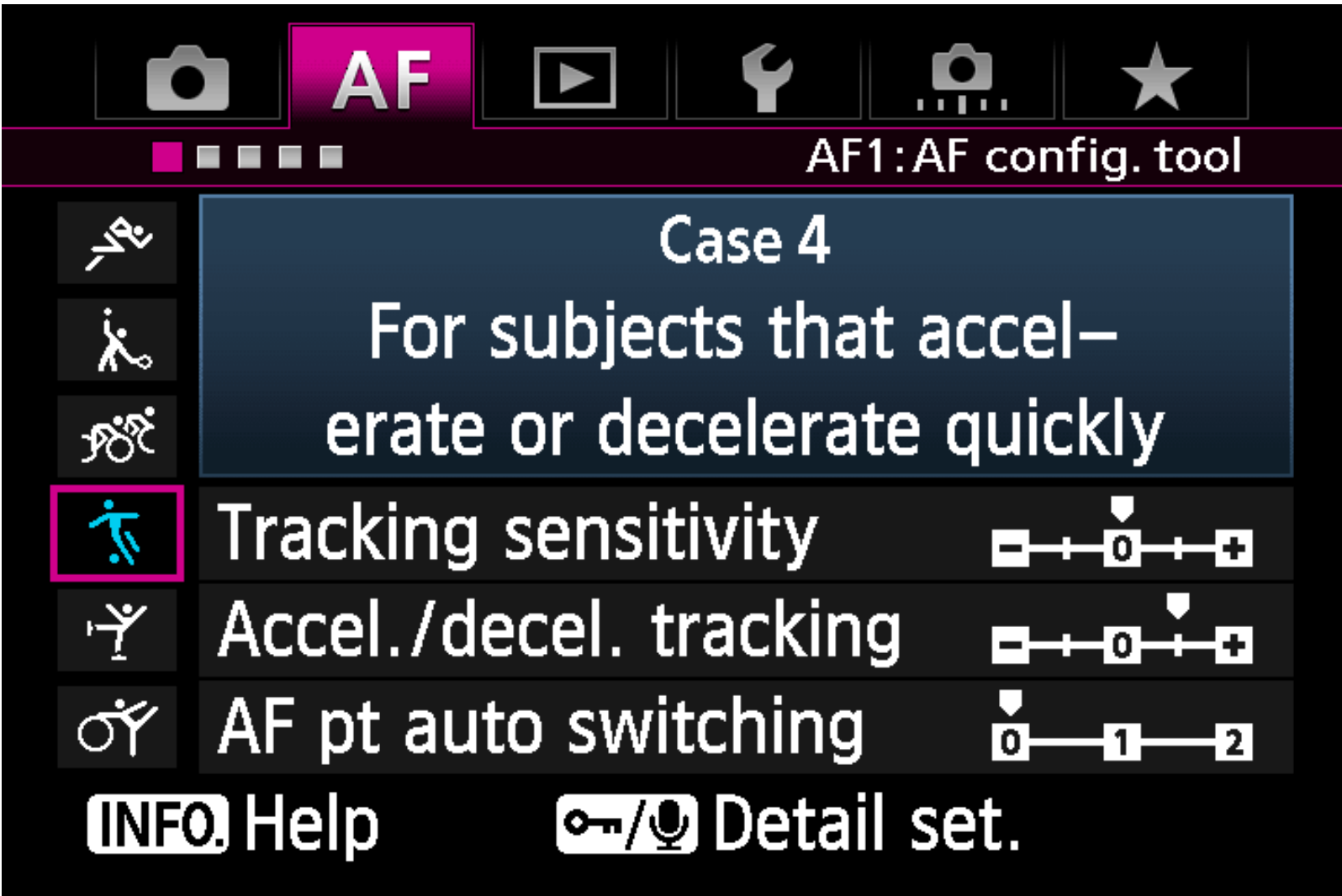
A scene with cyclists coming towards the camera. While focusing on the lead cyclist you may wish to switch focus to the other cyclists whilst continuously shooting. In this situation, by selecting Case 3, you can achieve the desired focus on each subject.

Case 4

Focus track subjects that accelerate or decelerate quickly

Subjects suddenly going from static to moving or sudden stopping can occur in various sports and situations and it can be difficult for the AF system to judge accurately, In these situations, Case 4 is most effective.

Effective when a subject's speed changes rapidly, or in sports where subjects stop or change direction



Parameter default settings	
Subject tracking sensitivity	[0]
Accelerate / decelerate Tracking	[+1]
AF point auto switching	[0]

When shooting sports, there are many situations where it will be necessary to deal with fast moving subjects. Subjects suddenly going from static to moving or sudden

stopping can occur in various sports and situations and it can be difficult for the AF system to judge accurately. In these situations, Case 4 is most effective. With the [Accelerate / decelerate Tracking] parameter set to [+1], the AI Servo AF will work to focus track any changes in speed, including sudden stops and acceleration. This makes Case 4 the most effective setting for shooting soccer, rugby, basketball or sports where there is a lot of running and stopping, as well as changes of direction. It is also effective for cornering during motor sports (sudden deceleration and acceleration).

Case 4 Photo

View large
image by
touching



For example in soccer. A player dribbling at high speed stops suddenly in front of a defender, changes direction and then begins to sprint again. By using Case 4 the AF system reacts to sudden changes in speed, allowing continuous and accurate focusing.

Continuously track players as they suddenly slow down and speed up



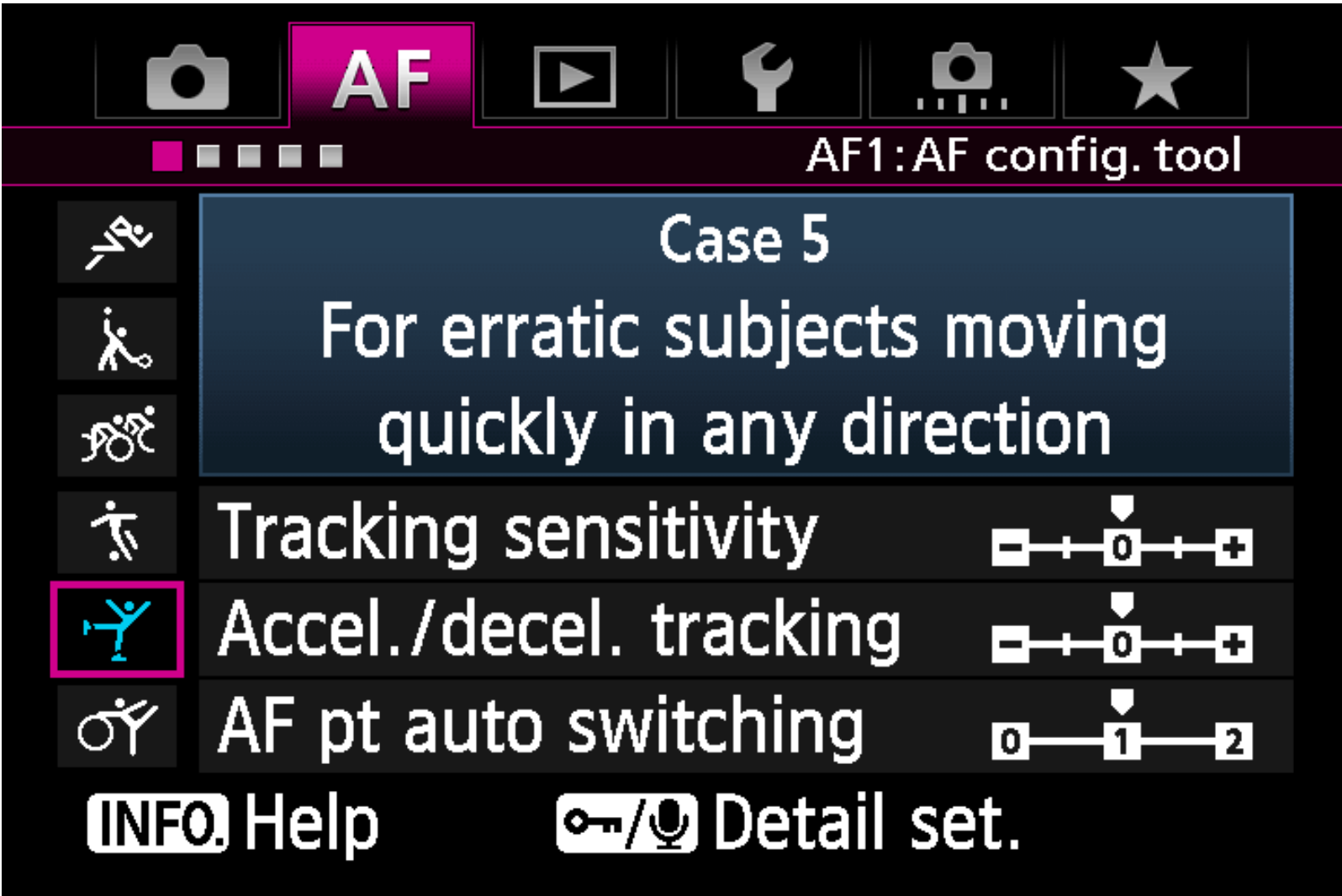
Case 5

Focus on subjects with erratic movement

Case 5 is most effective for subjects with large amount of movements which could occur in any direction. This setting works in 61-point automatic selection AF, Zone AF, and AF point expansion modes only.

.....

Suitable for sports and fast action where traditionally AF systems have difficulty tracking



Parameter default settings	
Subject tracking sensitivity	[0]
Accelerate / decelerate Tracking	[0]
AF point auto switching	[+1]

In Case 5, [AF pt auto switching] is set to [+1], when the subject moves away from the manually selected AF point (AF points focused on initially with Zone AF), focusing

automatically switches to other AF points that contain the subject. As a result, even when the subject continuously leaves the selected AF point, it is possible to increase the ratio of photos that are in focus. This setting is most effective when shooting subjects with erratic movement such as figure skating, skateboarding, and inline skating.

Case 5

Photo

View large
image by
touching



Using Case 5 when photographing a figure skater making a big jump (the AF area selection mode is set to [AF point expansion]). It is possible to track the skater's movements by letting the camera switch between AF points.

It is possible to focus on subjects that move erratically and could move in any direction



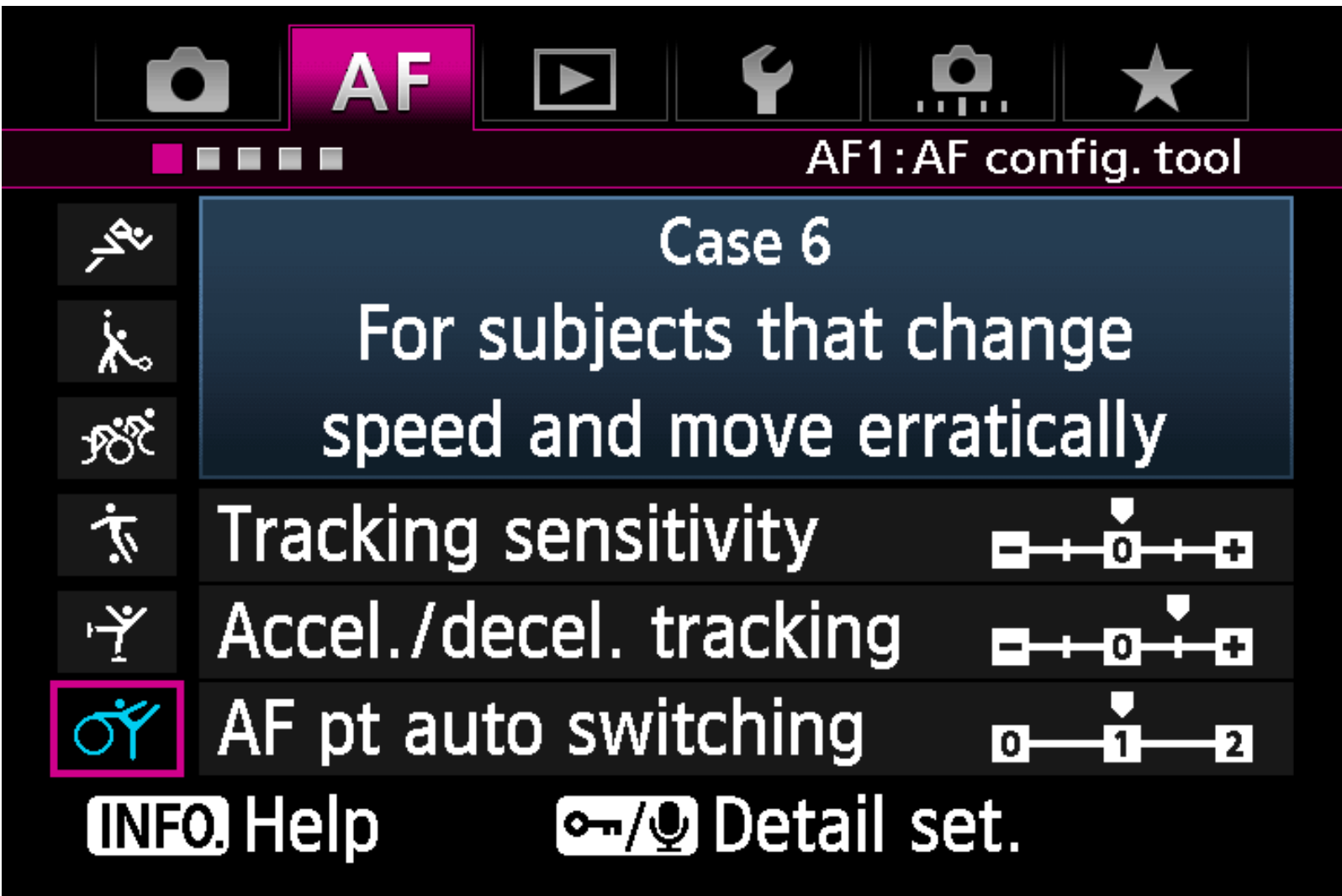
Inline skating on a half-pipe. Capturing the moments when the skater is jumping and twisting is easier with Case 5.

Case 6

Focus on subjects with erratic movement and changes in speed

Case 6 is a setting that combines features of both Case 4, and Case 5.

Effective when shooting sports that feature lots of quick movements



Parameter default settings	
Subject tracking sensitivity	[0]
Accelerate / decelerate Tracking	[+1]
AF point auto switching	[+1]

Case 6 is a setting that combines features of both Case 4 (support for sudden changes in speed), and Case 5 (support for erratic movement in any direction). [Accel./decel. tracking] and [AF pt auto switching] parameters are both [+1].

Therefore, Case 6 is an effective setting for subjects that stop and start suddenly, but also have erratic movement which could happen in any direction, it works during Auto selection 61-point AF, Zone AF, and AF point expansion only.

Shooting subjects that are most appropriate for this setting include rhythmic gymnastics which includes large movements with complete stops.

Case 6

Photo

View large
image by
touching



A rhythmic gymnast making sudden big jumps can be captured when shooting with Case 6 which can focus on subjects with sudden movement, and erratic movement. Continuous focusing is possible for large movements and changes in speed.



AF Configuration Tool [Parameters]

Subject tracking characteristics



Accelerate / decelerate Tracking characteristics



AF pt auto switching characteristics

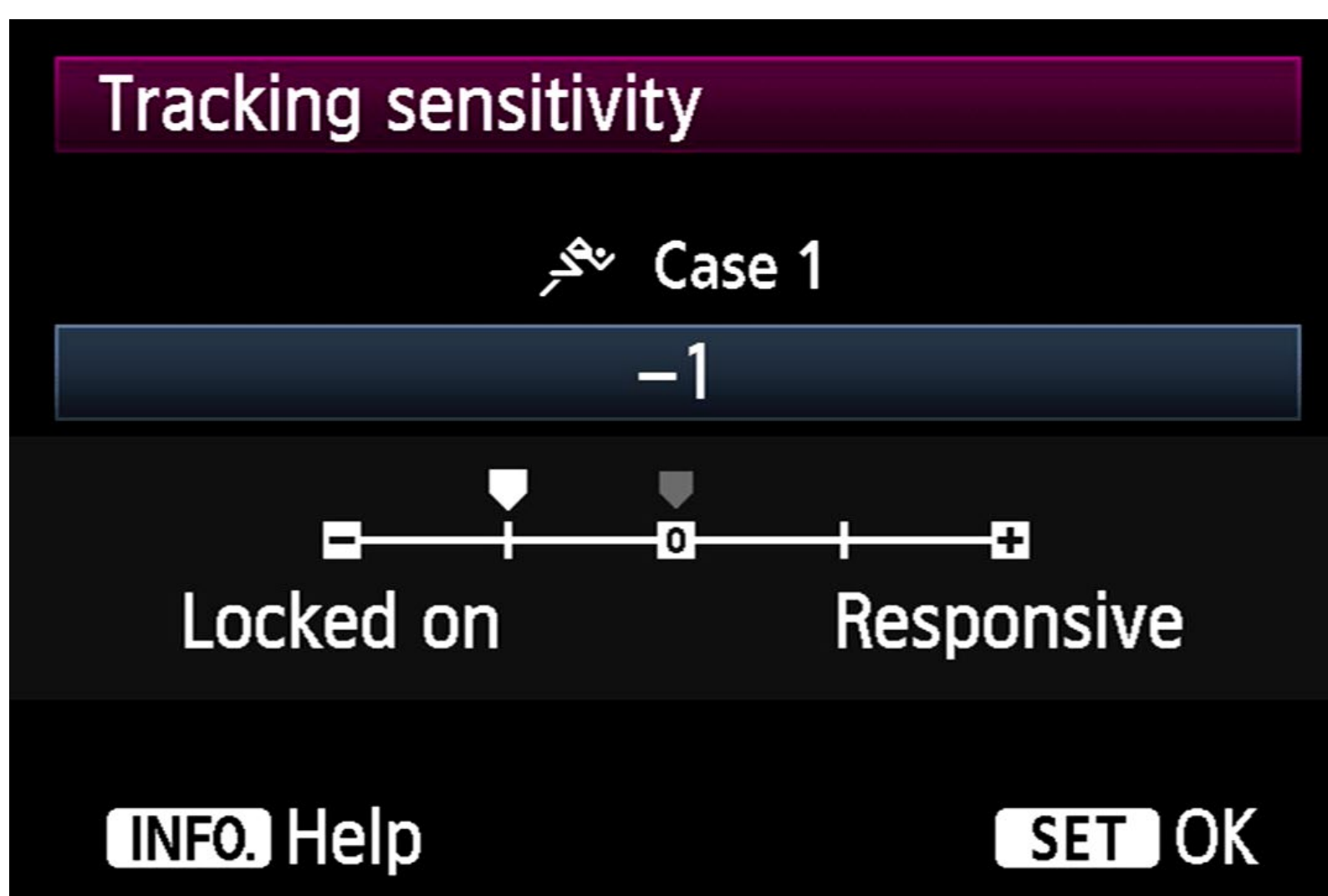


Subject tracking characteristics

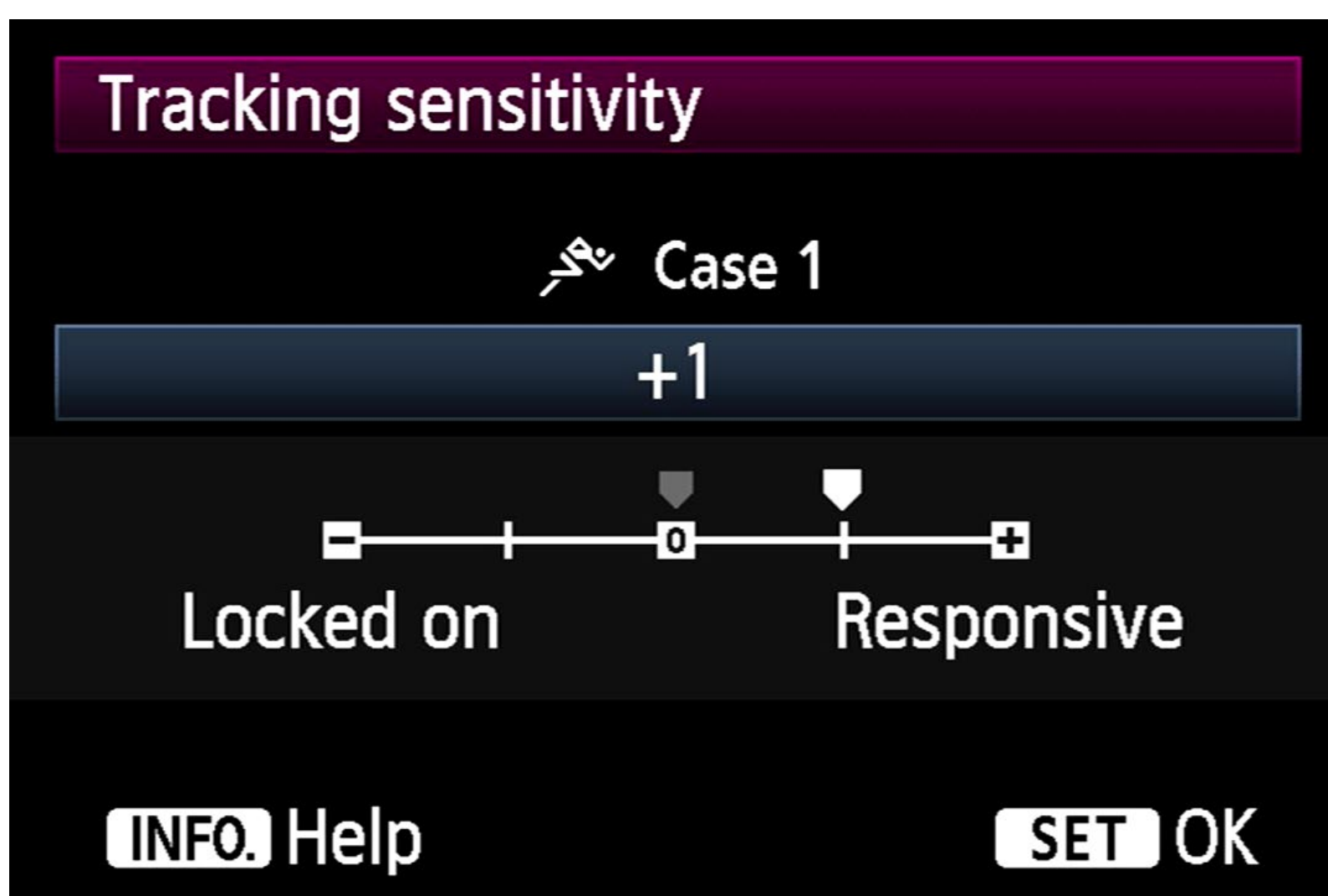
[Tracking sensitivity] is the parameter that can be set to track a subject that the AF point had been following until a different subject (or background) got in the way.

.....

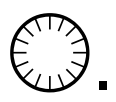
This setting allows obstacles that pass in front of the subject to be ignored, as well as focusing on new subjects



[Locked on : -]



[Responsive : +]

Choose any of [Case] and push  button for Tracking sensitivity, then adjust level by pressing SET and turning .

[Locked on] can be effective when an obstacle crosses in front of the subject and when focus jumps to the background,

With the AF Configuration Tool on the EOS-1D X, not only can you select from Case 1 - Case 6, but three parameters for each can be adjusted individually.

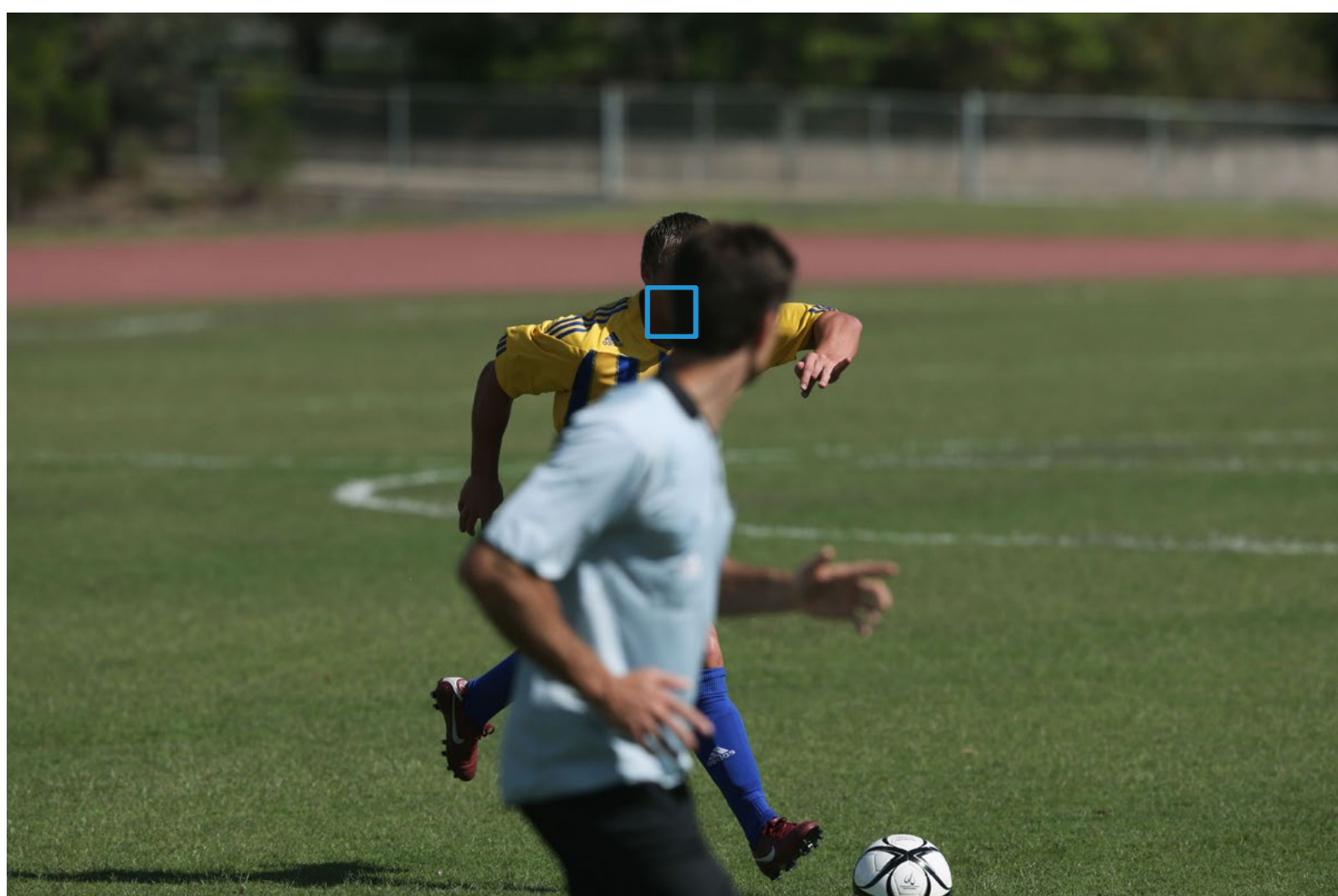
[Tracking sensitivity] is the parameter that can be set to track a subject that the AF point had been following until a different subject (or background) got in the way.

The [Locked on: -2/-1] setting excludes subjects that come into the AF point as obstacles, and continues to focus on the original subject . Selecting -2 results in the targeted subject being tracked for a longer time before focus changes to subject now in the AF point.

The [Responsive: +1/+2] setting determines that subjects that come into the AF point are new subjects to be focused, and quickly focuses. It is also effective when you want to quickly focus on subjects that are hidden and appear suddenly.

An example where [Locked on: -2/-1] is more effective

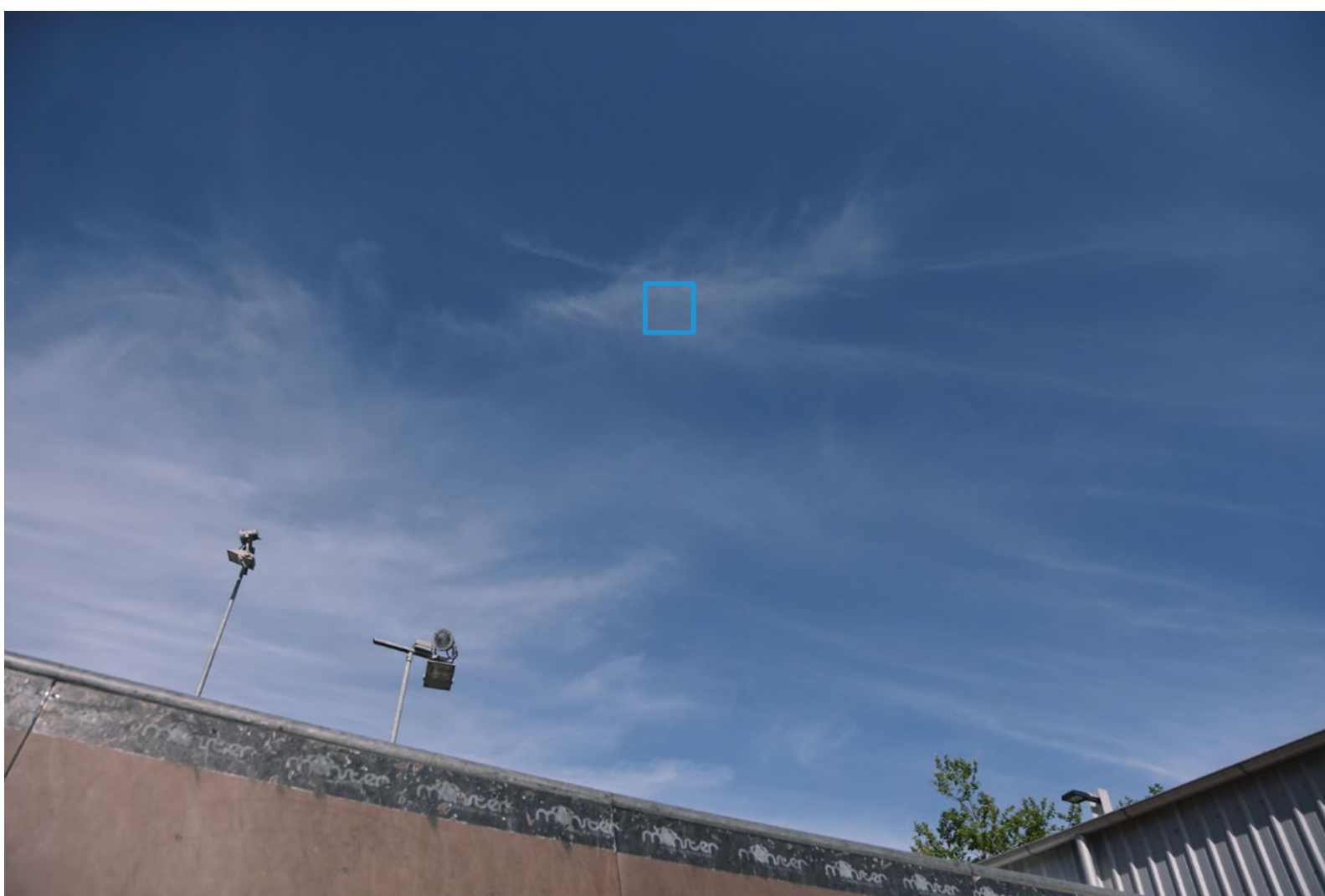
When another player, or a referee crosses in front of the subject and focus can shift to the foreground/background



Example where the referee momentarily appears in front of the player being tracked, then the player appears again. With the [Locked on: -1] setting, the referee in the foreground is not focused on, and the AF system continuously tracks the player.

An example where [Responsive: +1/+2] is effective

When you want to focus on an athlete who appears suddenly in the frame.



Example where a skateboarder appeared suddenly from the far wall. In a situation like this, setting to [Responsive: +1/+2] makes it possible to focus even quicker on the skater that just appeared. (Photo top left, shown to illustrate scene prior to the skateboarder appearing,)

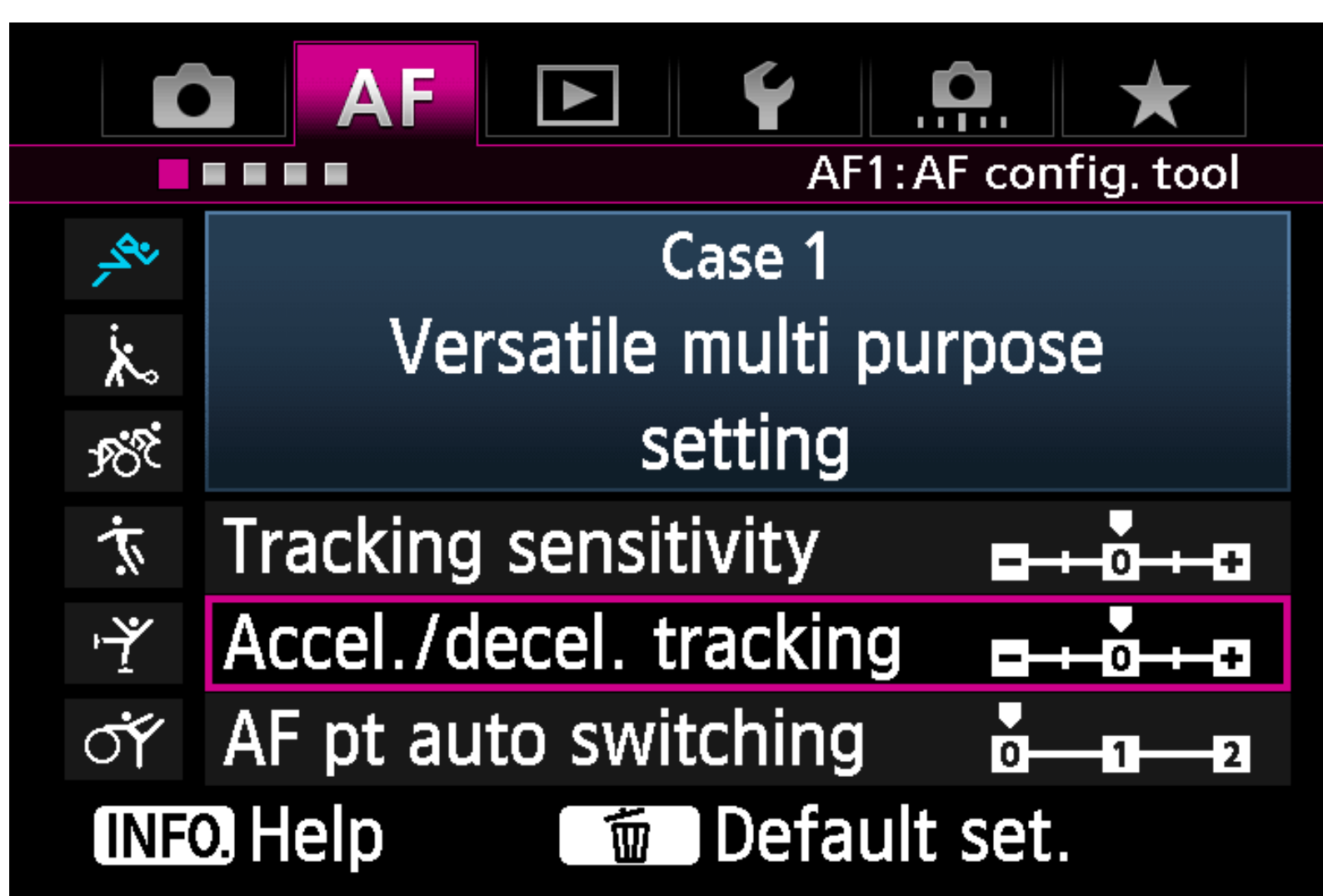
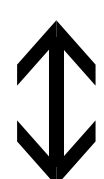
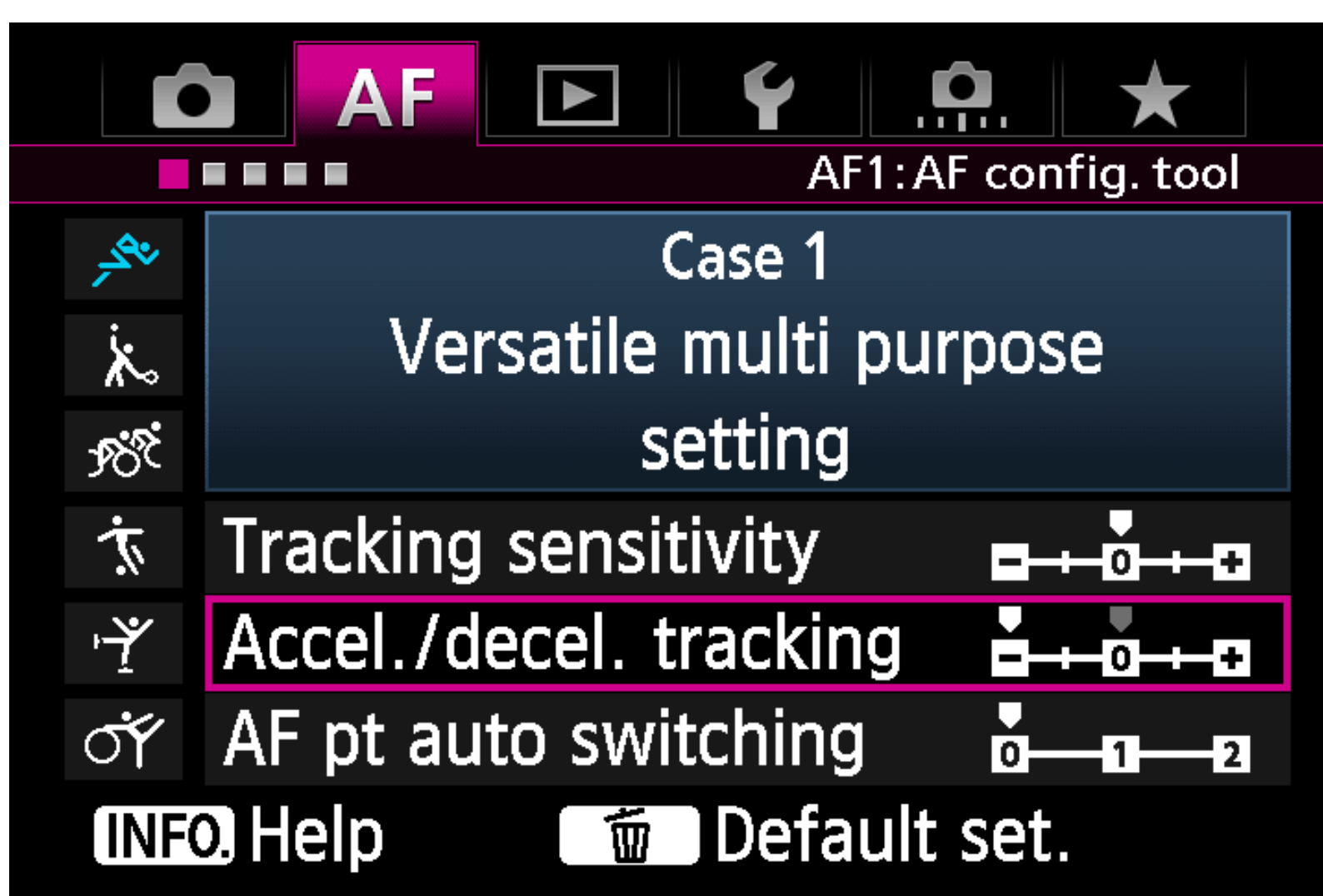


Accelerate / decelerate Tracking characteristics

[Accel./decel. tracking] is a tracking setting for subjects that experience changes in speed and move or stop suddenly.

.....

[-1/-2] is effective for subjects with minor speed changes



Choose any of [Case] and push button for, Accel./decel. tracking, then adjust level by pressing SET and turning .

A minus setting for subjects with a long shooting distance such as soccer provides more stable focus

The default setting is [0], which is best for shooting subjects that move at steady speeds, or do not experience significant changes in speeds.

[+1/+2] are best for shooting subjects that suddenly start or stop moving, or suddenly accelerate or decelerate. This setting enables the camera to continue focusing on the desired subject even when it experiences significant, split-second changes in speed. For example, the camera becomes less likely to focus behind an approaching subject that moves suddenly, and less likely to focus in front of a subject when it stops suddenly, which would result in a blurred subject. [+2] can handle greater changes in speed than [+1].

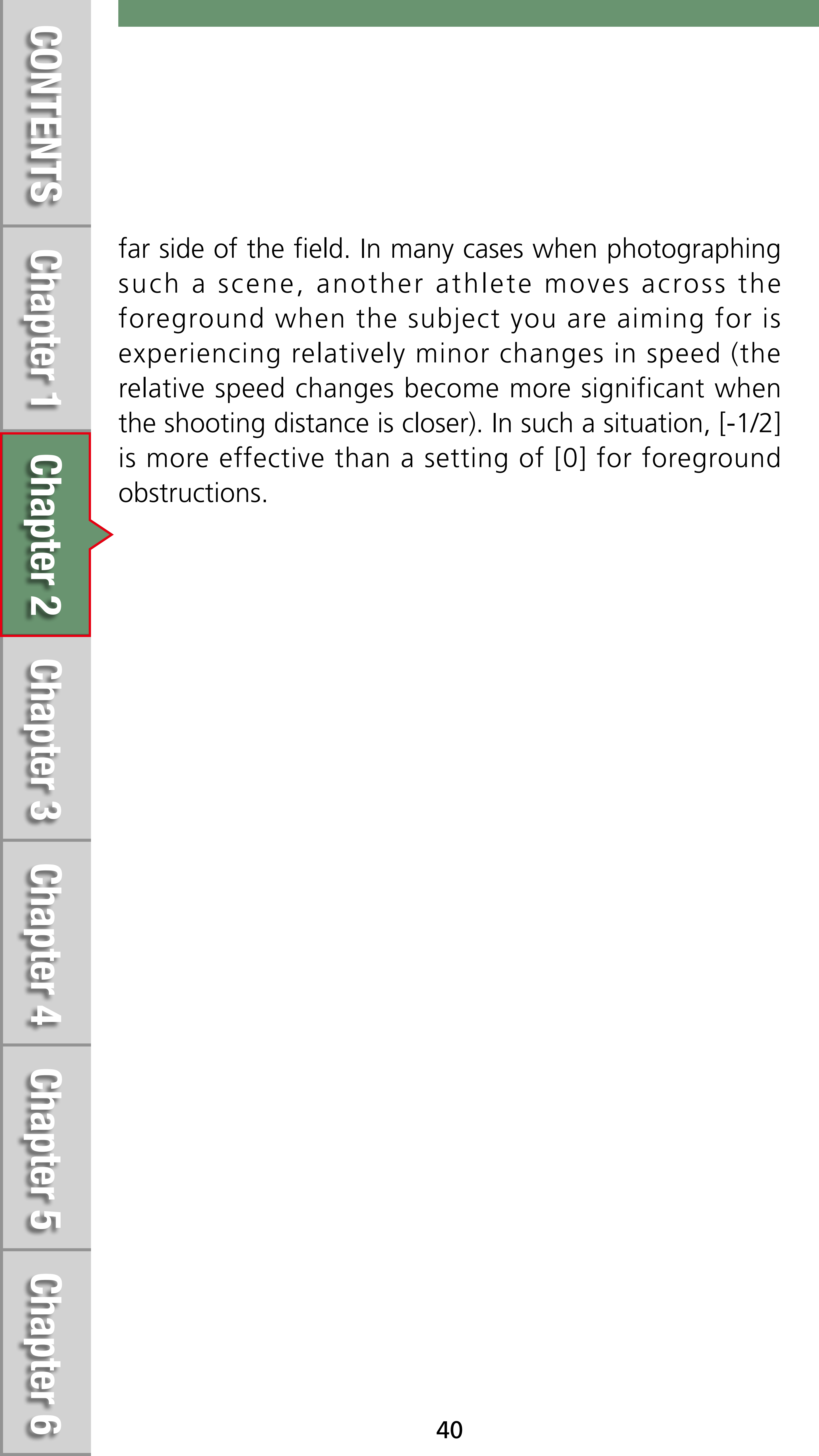
The newly-added [-1/-2] are effective for shooting far away subjects with small changes in speed when you want to focus on minimizing the effects of obstructions passing by in the foreground of the shot.

Examples where the [-] setting is more effective

Sports with far-away subjects that experience relatively minor changes in speed, and obstructions that often pass in front of the subject



[Accel./decel tracking] option [-1/2] is a new parameter for shooting in situations where far-away subjects experience minor changes in speed, and many obstructions pass by in the foreground. Specifically, this setting is effective for sports with wide playing fields, such as soccer, when you want to capture action on the

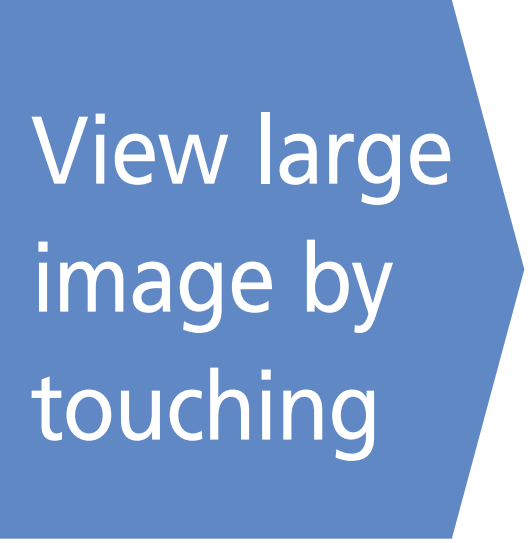
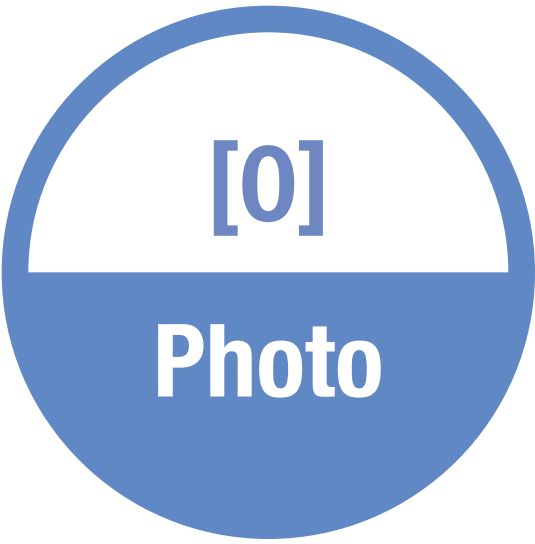
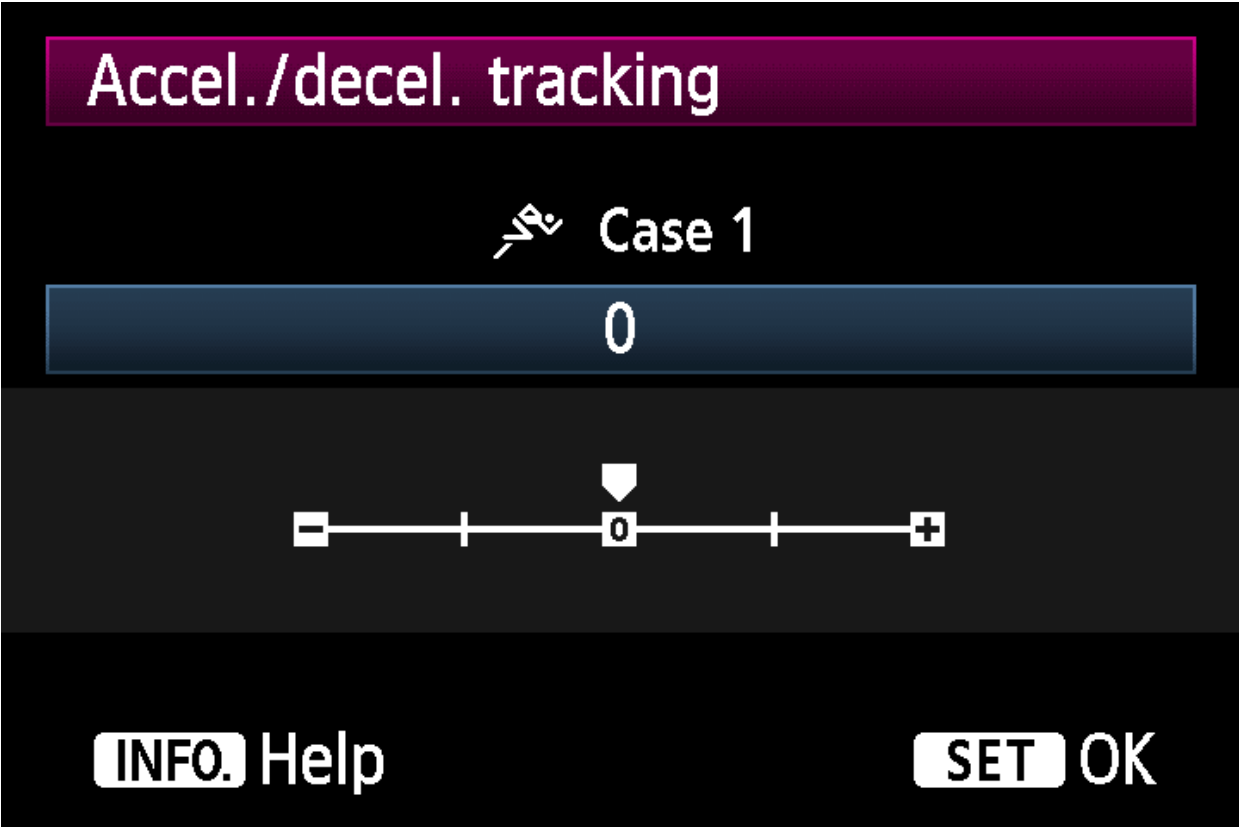


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far side of the field. In many cases when photographing such a scene, another athlete moves across the foreground when the subject you are aiming for is experiencing relatively minor changes in speed (the relative speed changes become more significant when the shooting distance is closer). In such a situation, [-1/2] is more effective than a setting of [0] for foreground obstructions.

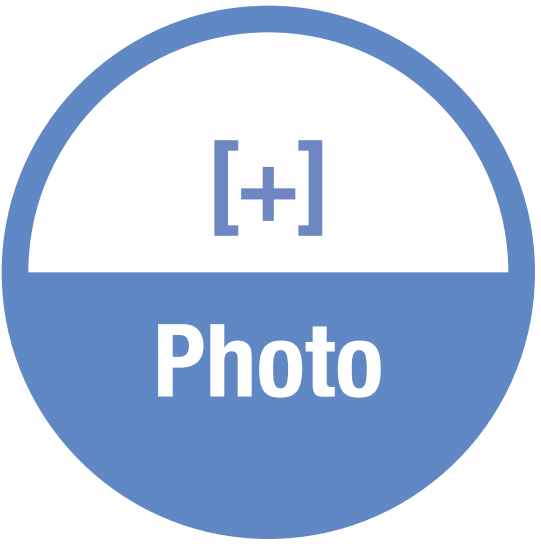
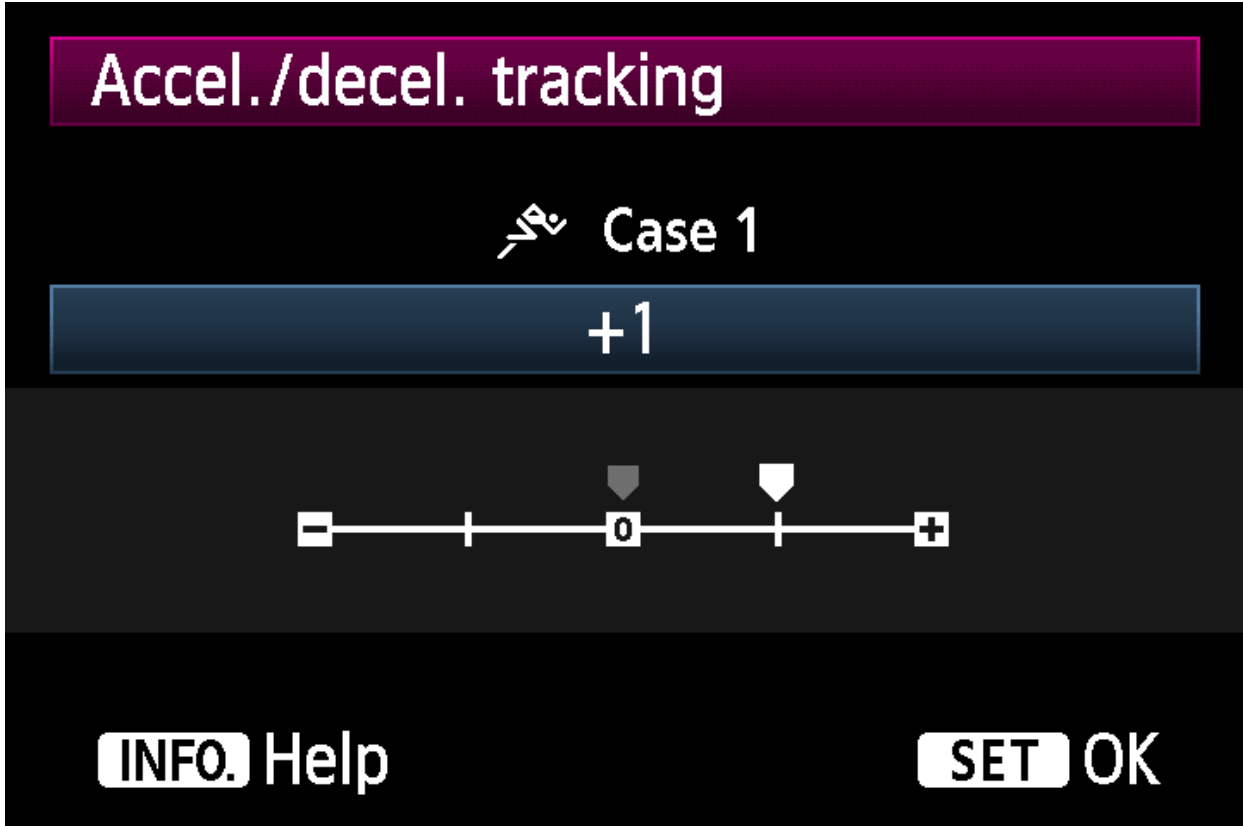
Examples where the [0] setting is effective

Track and field events where constant speed is common



A track and field example where an athlete is running directly towards the camera. [0] is most suitable for taking shots of subjects in this situation.

Examples where the [+]
Sports where athletes movement sudden stop
or start



View large
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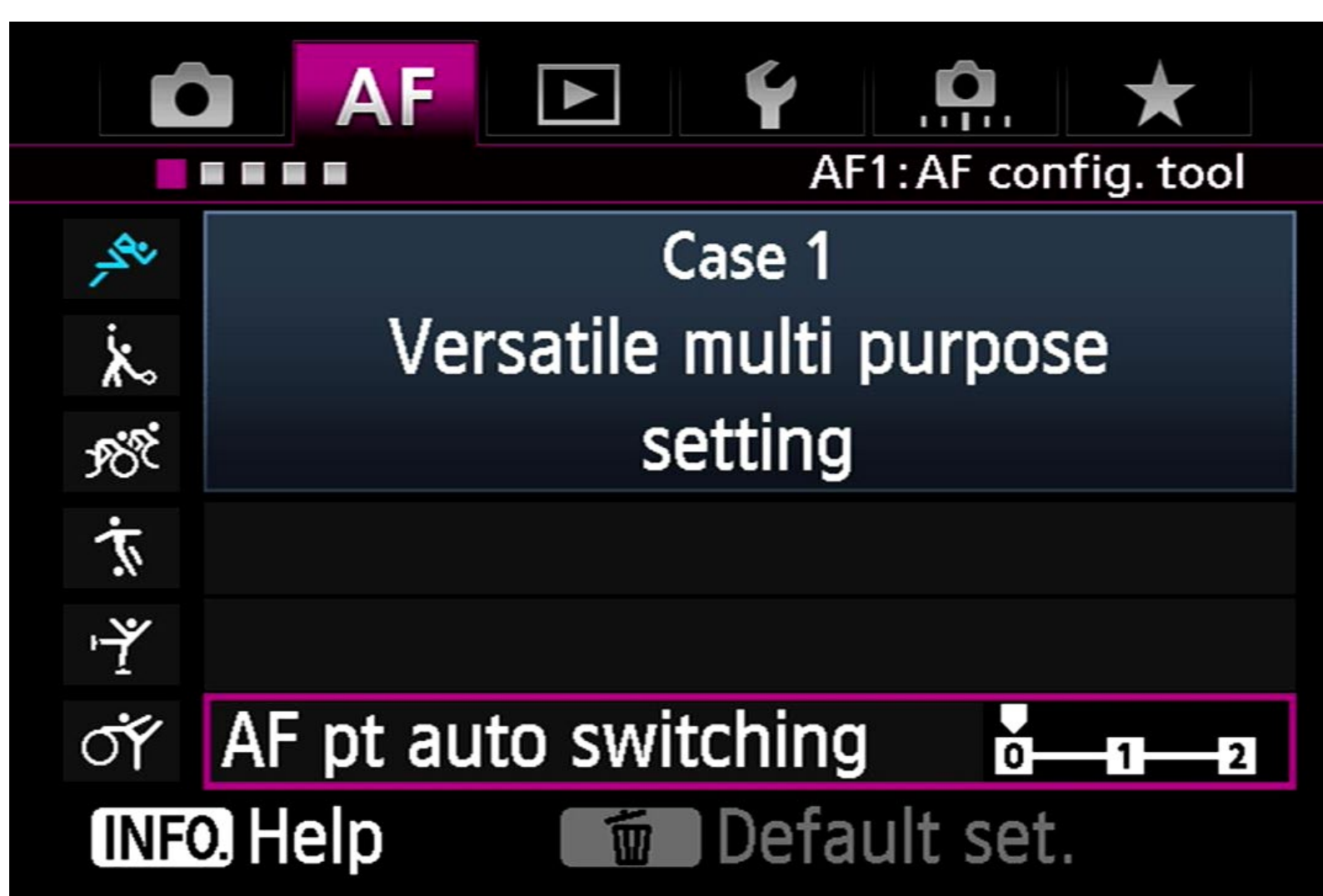
Example of a long-jump landing. As a result of the athlete suddenly decelerating as they land, a normal setting may not be able to capture it, however, it is possible to continue focusing on the athlete with [Accelerate / decelerate Tracking] set to [+1].

AF pt auto switching characteristics

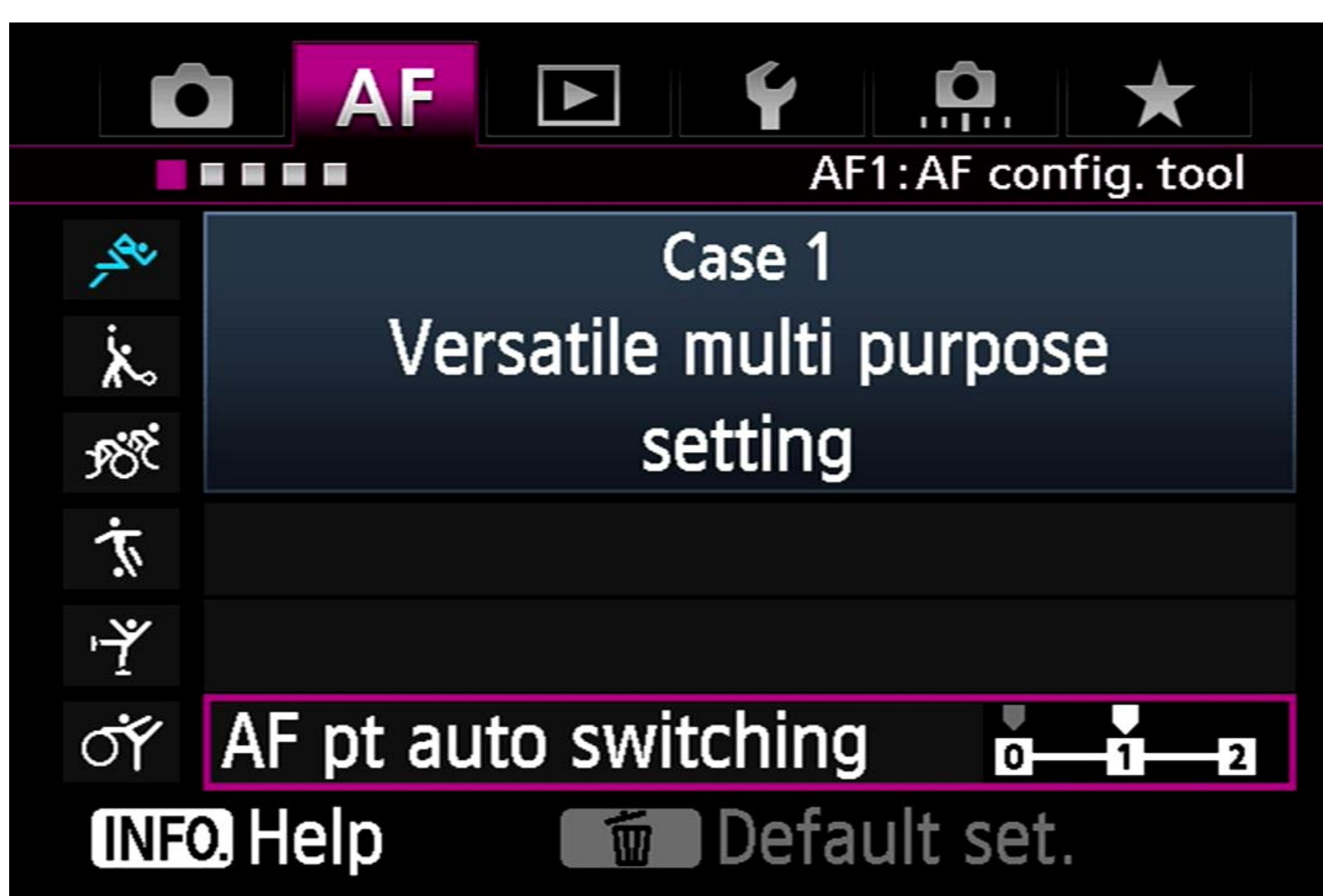
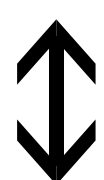
The [AF pt auto switching] parameter is used for setting characteristics of AF point switching when the subject has a lot of movements.

.....

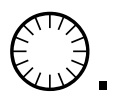
Set how rapidly the AF point switches to a new AF point for moving subjects



[0]



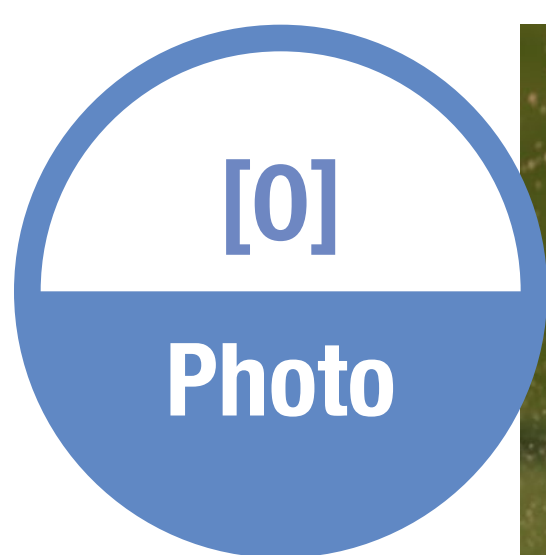
[+1]

Choose any of [Case] and push  button for AF pt auto switching, then adjust level by pressing SET and turning .

[+1/+2] setting is most effective for sports with lots of movement where the subject can easily move out of the selected AF point

The [AF pt auto switching] parameter is only for switching between multiple AF points, so it is unavailable when using AF area selection modes [Single-point Spot AF] and [Single-point AF]. The [0] setting is a standard setting for moderate switching of AF points. The [+1/+2] settings are used when shooting subjects with erratic movement which could happen in any directions. When a manually selected AF point (AF point being focused during Zone AF) leaves the subject, it will rapidly switch to surrounding AF points to capture the subject. Use the [+] setting when you want the camera to automatically decide (switch) to use a new AF point, and the [0] setting is used when you want to place emphasis on manually selected AF points to track the subject.

Examples where [0] is most effective, Sports with comparatively big movements, and are not very fast

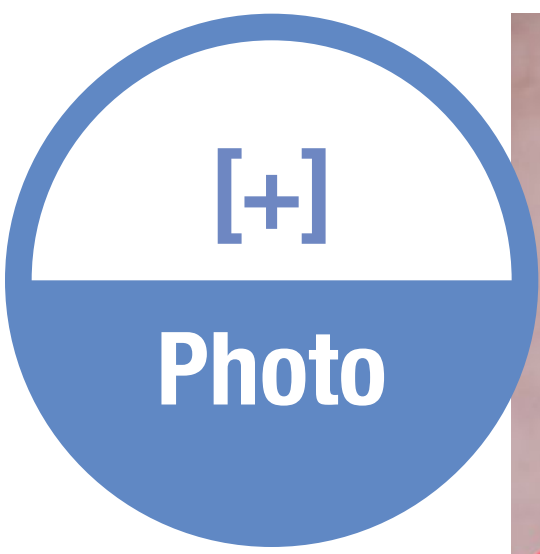


View large
image by
touching

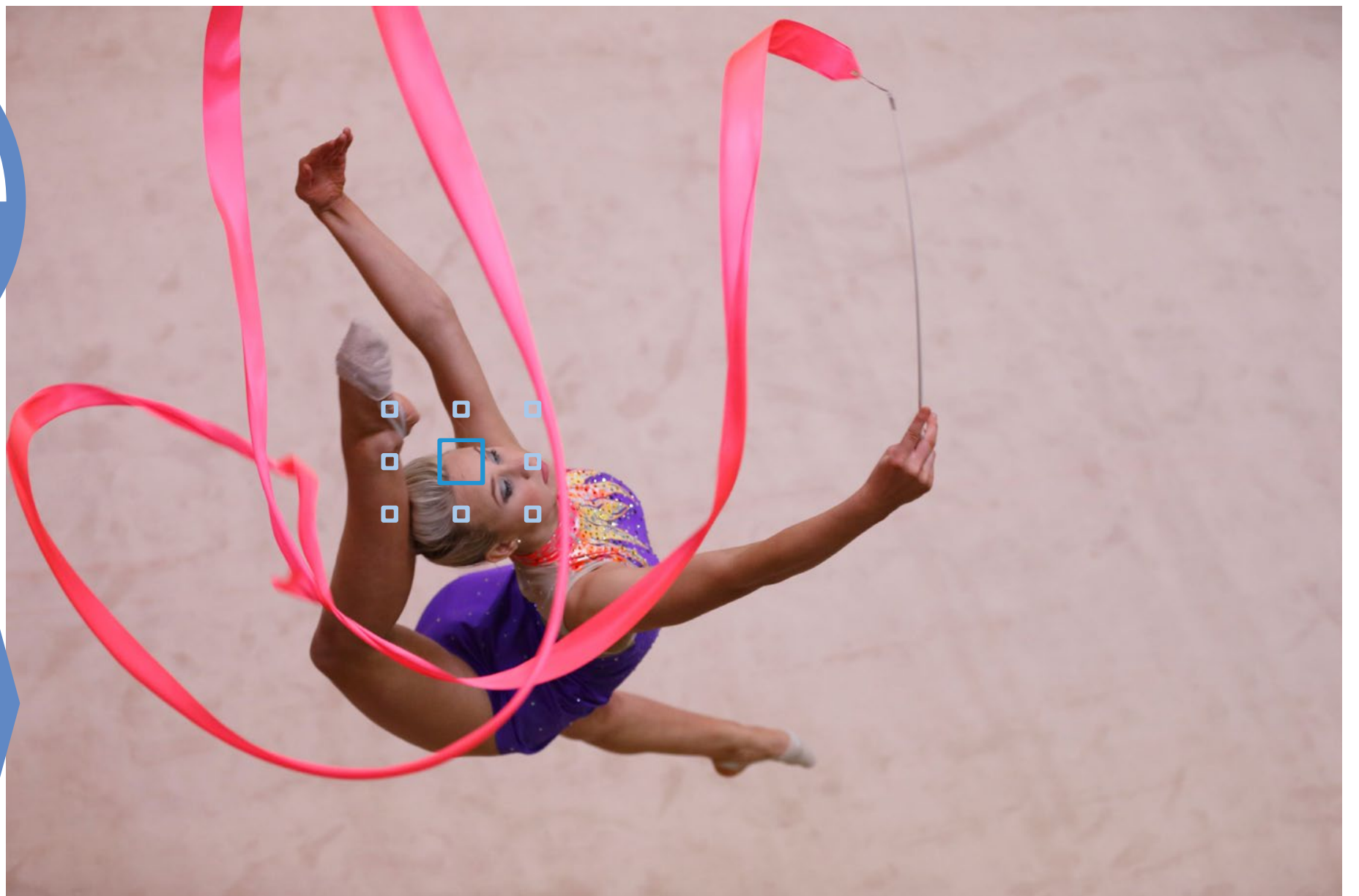


Example of a golf bunker shot. The [0] setting is recommended when shooting subjects that do not move significantly.

Examples where [+] is effective, fast moving sports with big movements, where the AF points can lose the subject easily



View large
image by
touching



A rhythmic gymnast showing lots of movements in all directions. Use the [+] setting in order to capture the movement by taking advantage of rapid shifting AF points.

Tip for AF setting

Change the level of “Accelerate / decelerate Tracking” and “AF point auto switching” for the appropriate for shooting result.

“Accelerate / decelerate Tracking” and “AF point auto switching” are part of the Camera's automatic functions. Therefore it is not always possible that these automatic functions reflect 100% of your intended idea. If you feel unhappy with shooting result, try to change the effect level of their functions.

AF area selection modes

Overview of AF area selection modes



Single-point Spot AF



Single-point AF



AF point expansion
(up, down, left, and right) (surrounding points)



Zone AF



Auto selection of 61 AF points

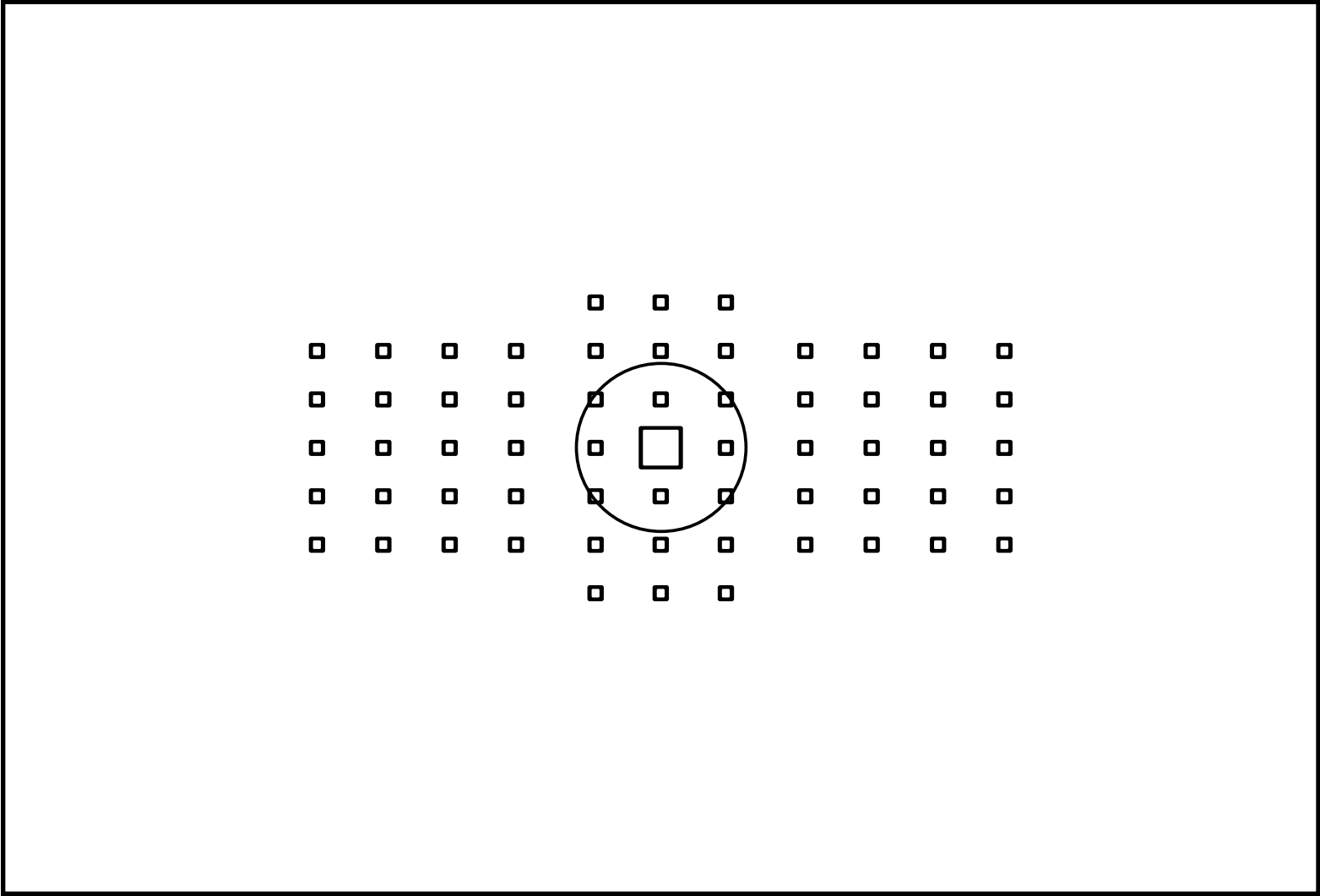


Overview of AF area selection modes

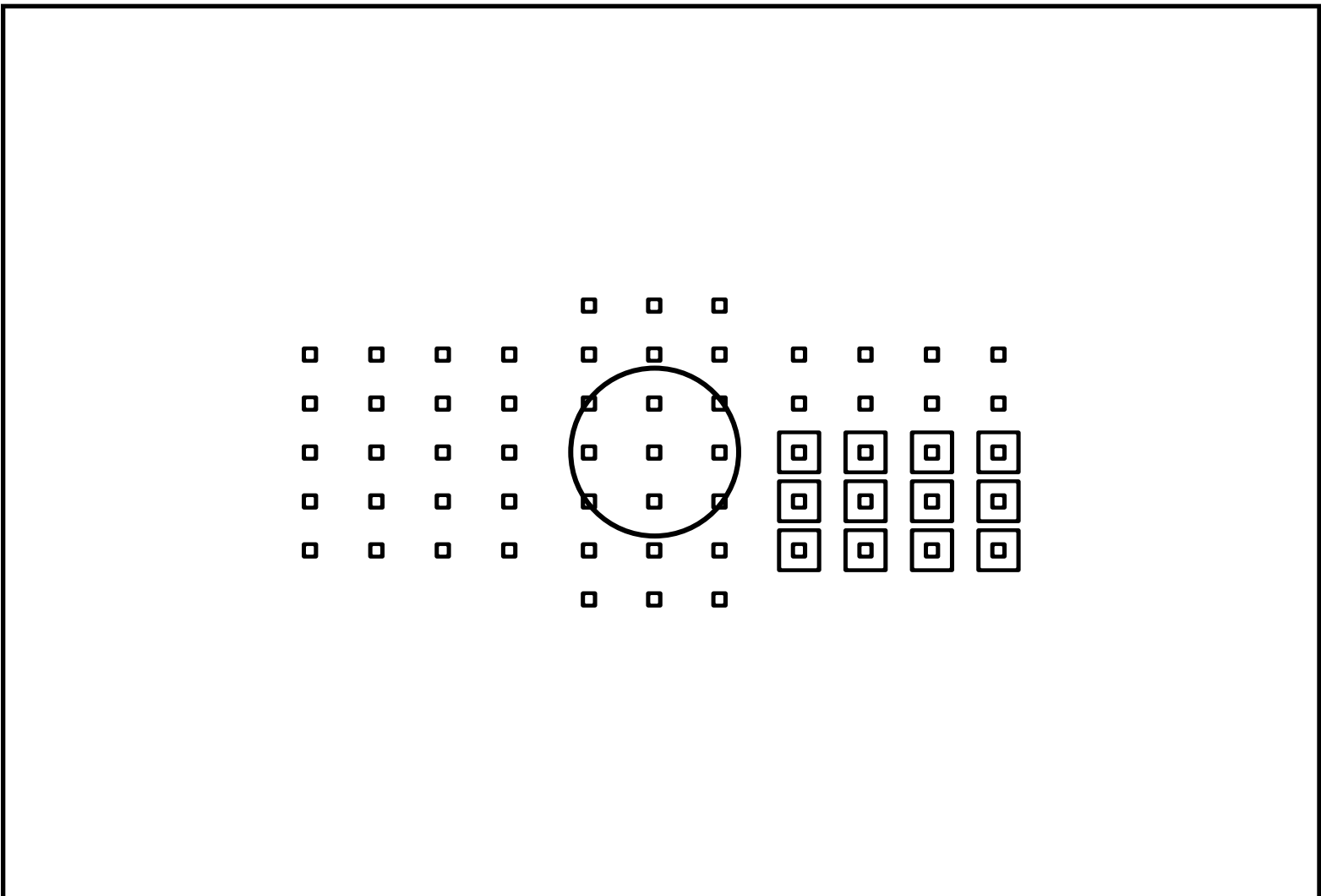
Change the AF point selection to match your the shooting style

.....

AF modes can be selected to match the subject and conditions



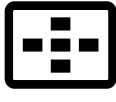
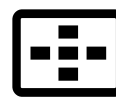
Using only one AF point



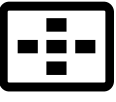
Using multiple AF points (zone)

The AF area selection modes make it possible to set how many of the 61-point AF are available to be used. Set the selection method of AF points that best matches the subject and shooting conditions.

How to set the AF area selection mode

After pressing the  button, each time the **M-Fn** button is pressed, the [AF area selection mode] changes. By setting the menu [AF4] tab's [AF area selection method] to [ -> Main Dial], after pressing the  button, you can switch the mode with the Main Dial if you prefer.



Press the  button



The mode is changed each time the M-Fn button is pressed

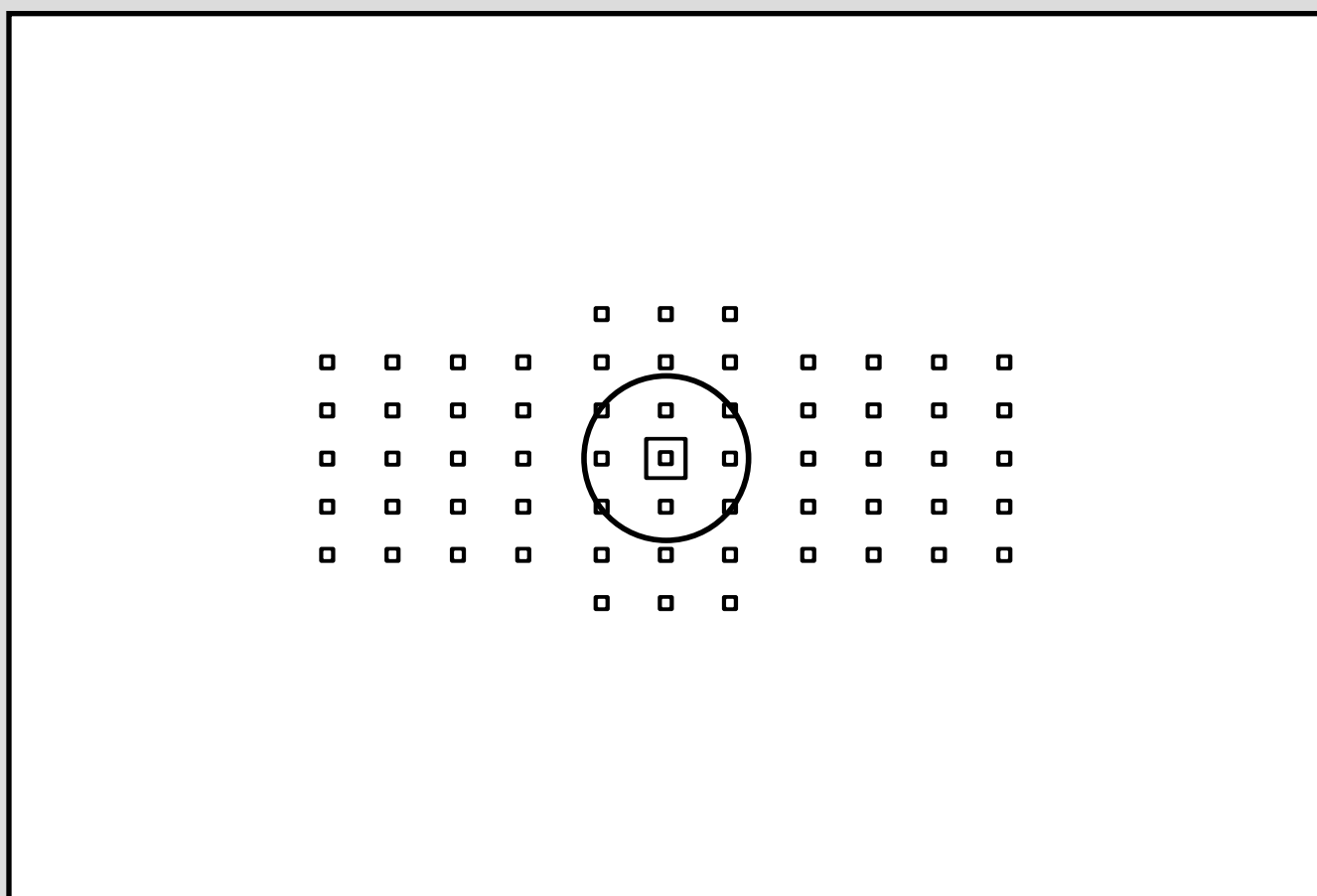
Choose whether only one AF point is used, or select from a vast array of AF selection options

The EOS-1D X is equipped with 61-point AF. Not only can all these AF points each be selected individually, but by also automatic switching between multiple AF points to track the subject, using all 61 AF points. The [AF area selection mode] setting allows the selection of these AF point modes.

The two types of modes that you can manually select a single AF point to focus with are [Single-point Spot AF] and [Single-point AF]. The four modes that can switch automatically between multiple AF points to capture moving subjects are AF point expansion (Manual selection, 4 points [Up, down, left, and right]), AF point expansion (Manual selection, surrounding 8 points), Zone AF, and Auto selection of 61 AF points (during AI Servo AF). Mode features are explained from P. 52 - 68, so you can select the mode best suited to your subject's characteristics and shooting scene.

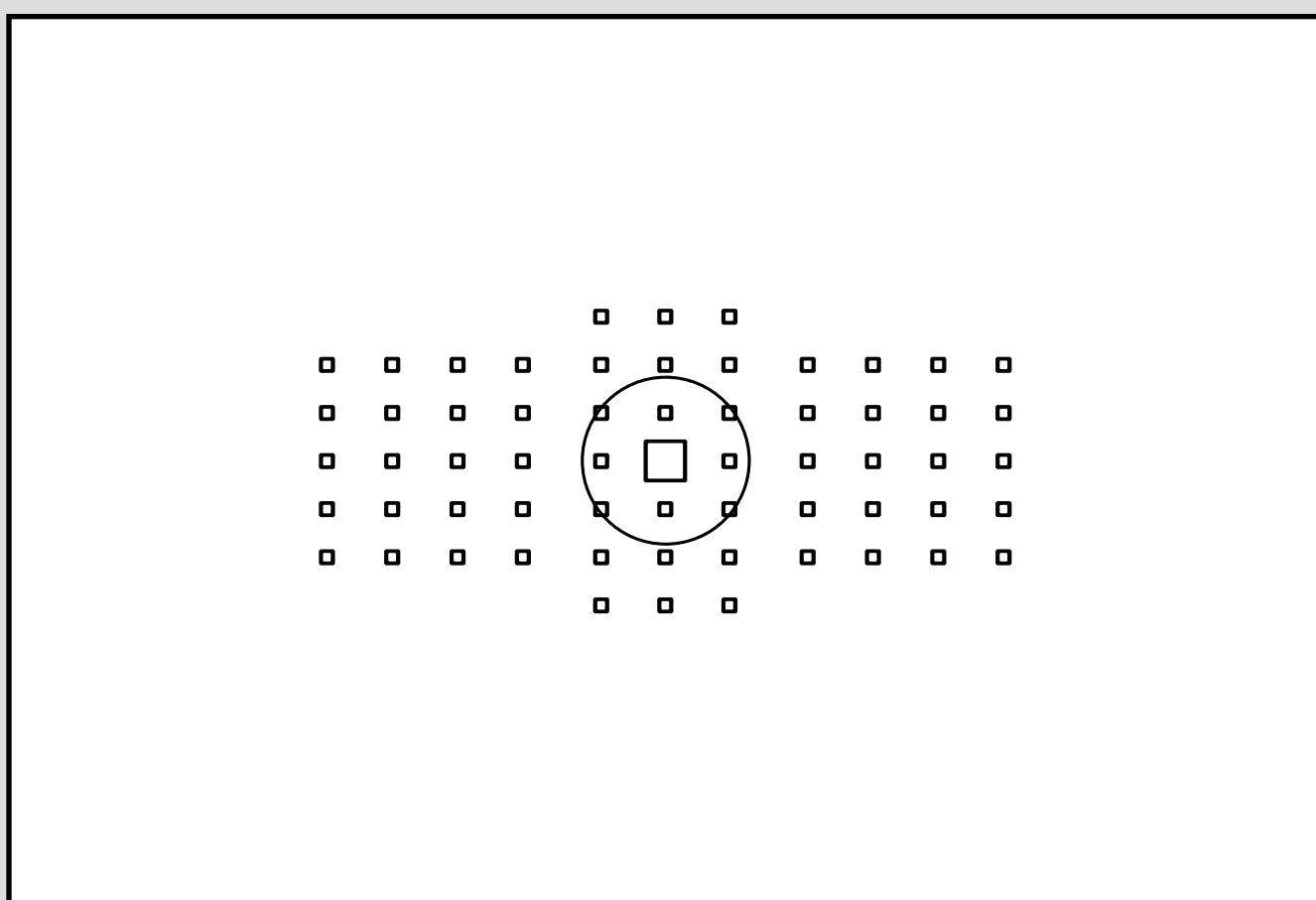
Single-point Spot AF

It is possible to focus on a very narrow areas with a single manually selected point.



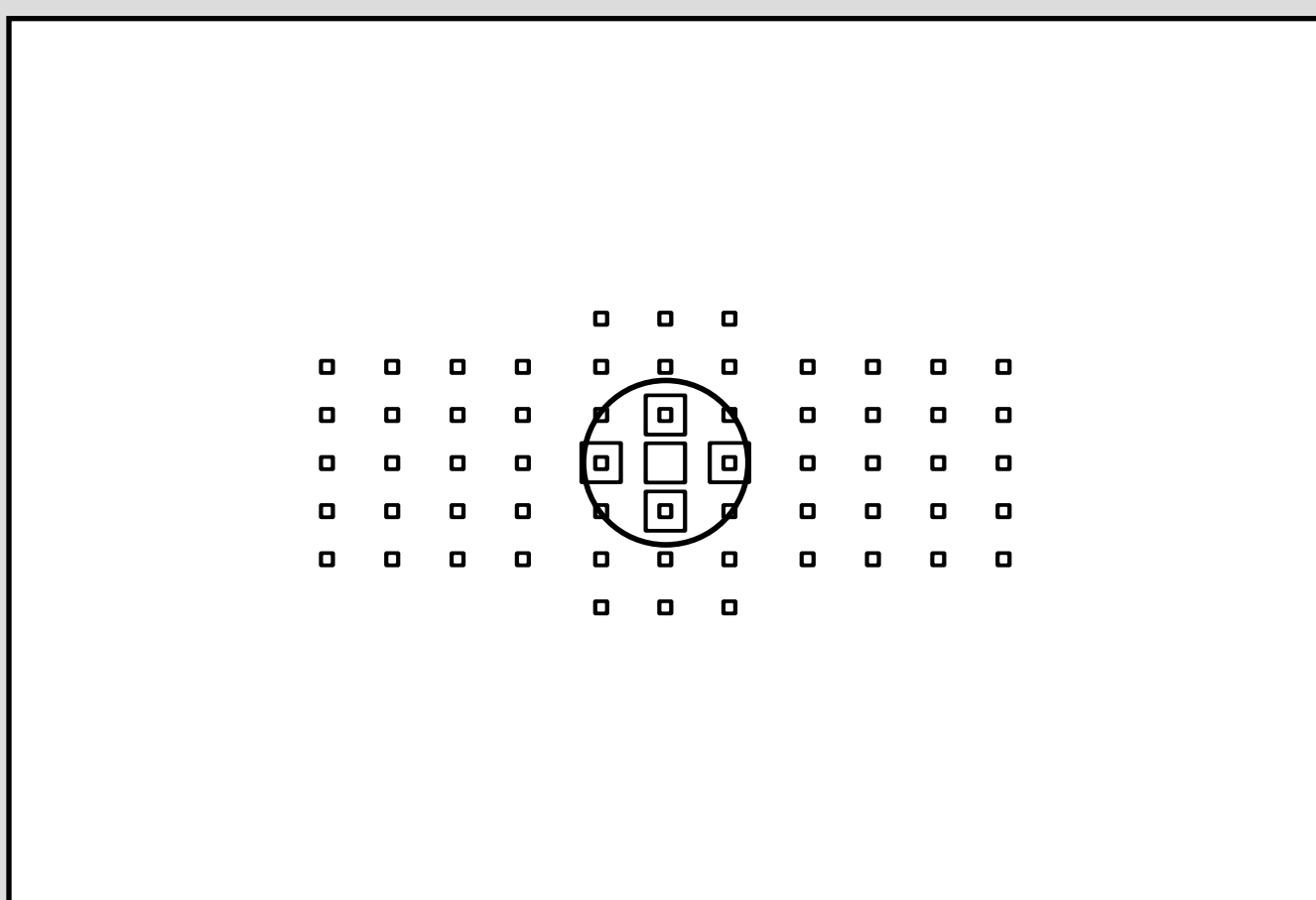
Single-point AF

The default setting. With this mode it is possible to focus with a single manually selected point.



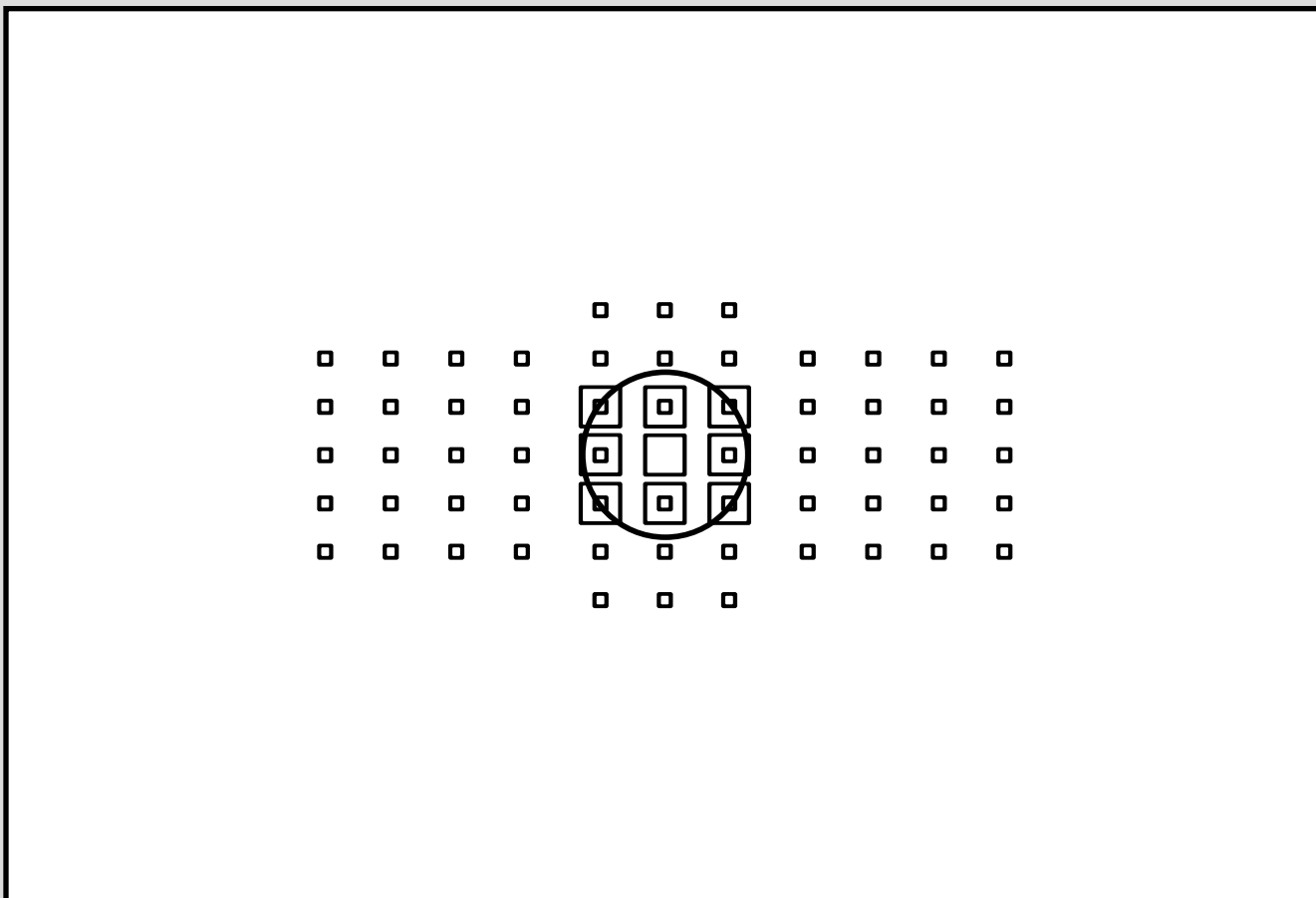
AF point expansion (four surrounding points)

Focus using one manually selected point assisted by 4 other AF points (up, down, left, and right).



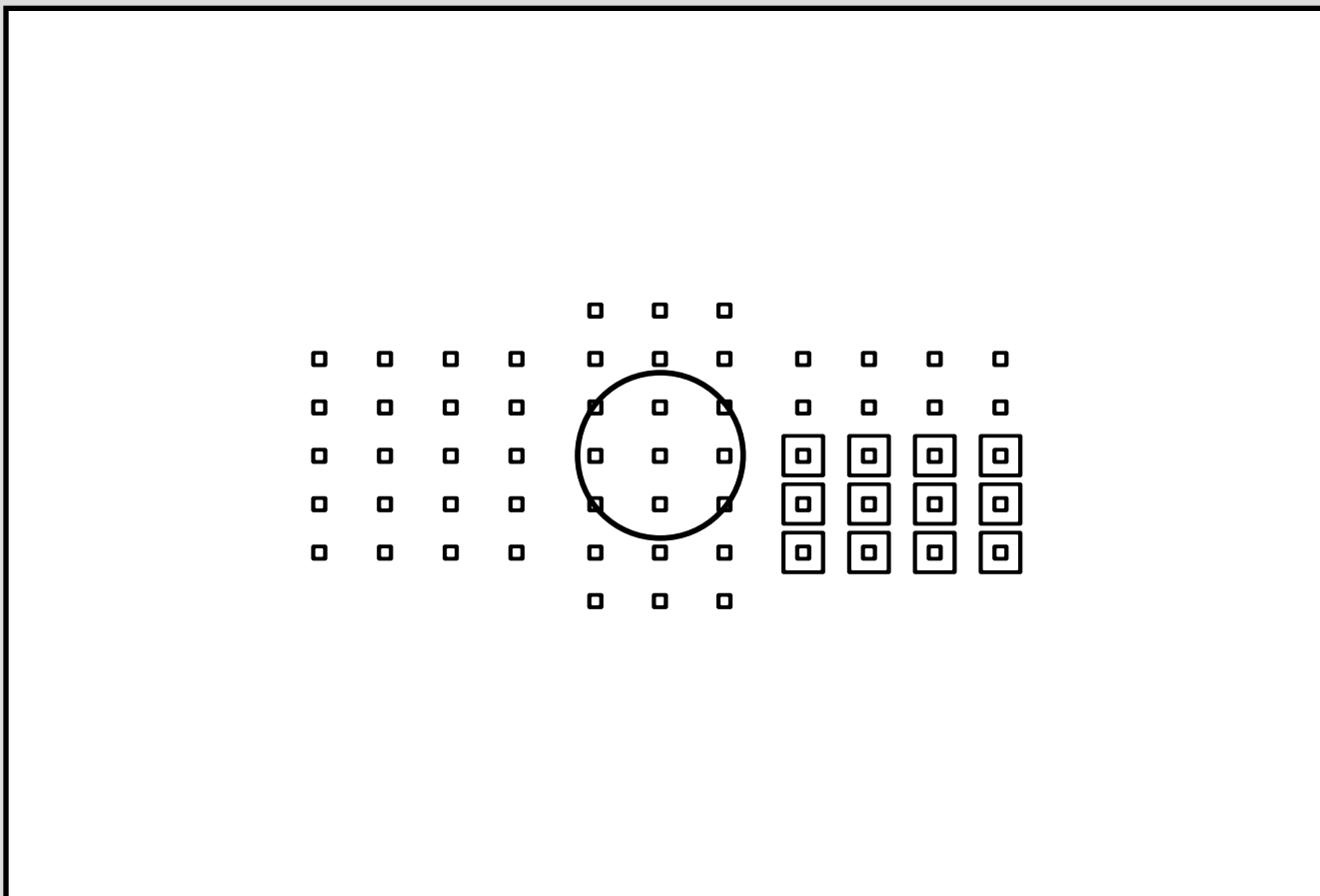
AF point expansion (eight surrounding points)

Focus using one manually selected point assisted by the surrounding points.



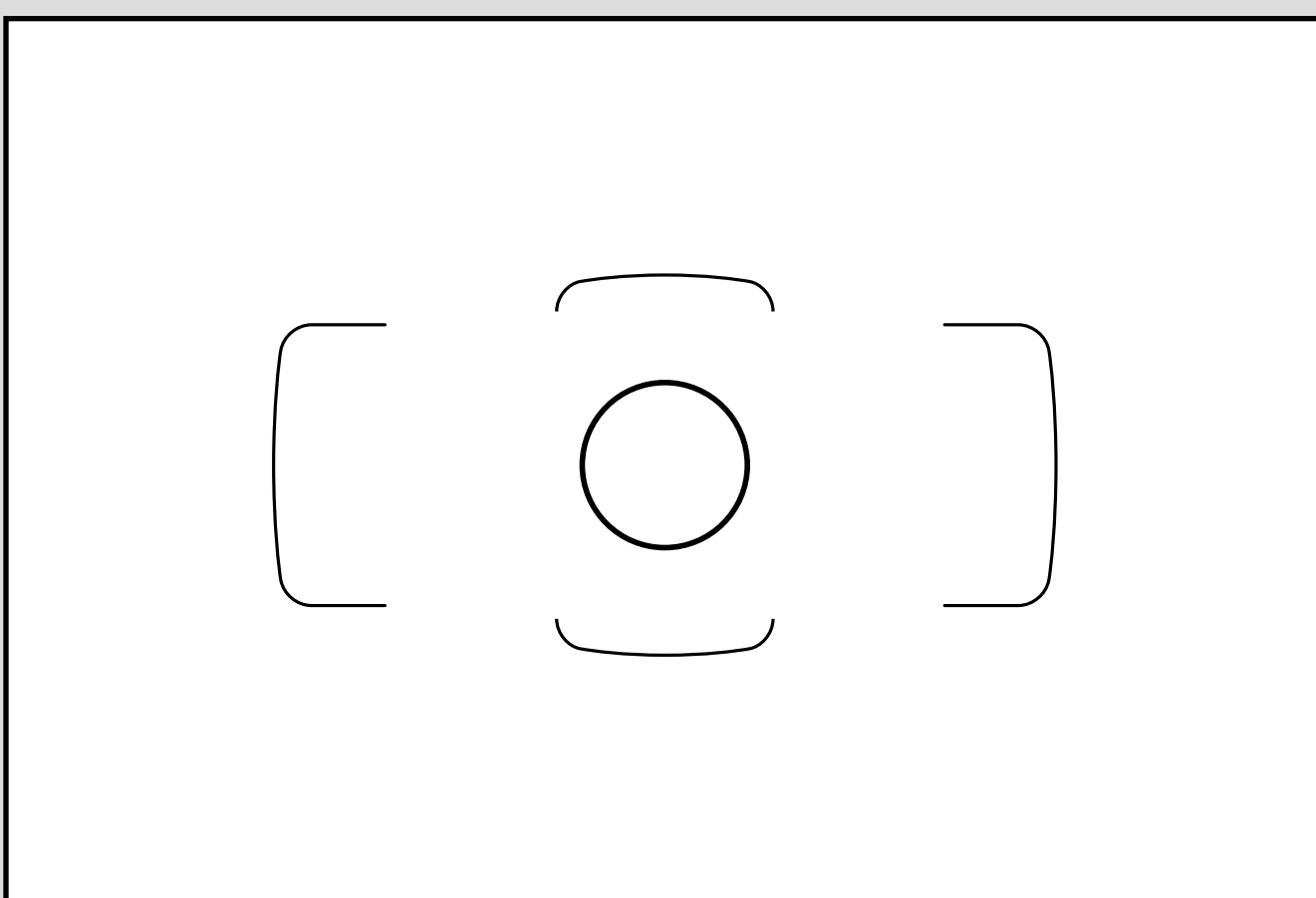
Zone AF

The 61 AF points are divided into nine zones, and focus is made with the AF points in the selected zone.



61-point automatic selection AF

All AF points are used with this mode, and the camera selects and focuses automatically.

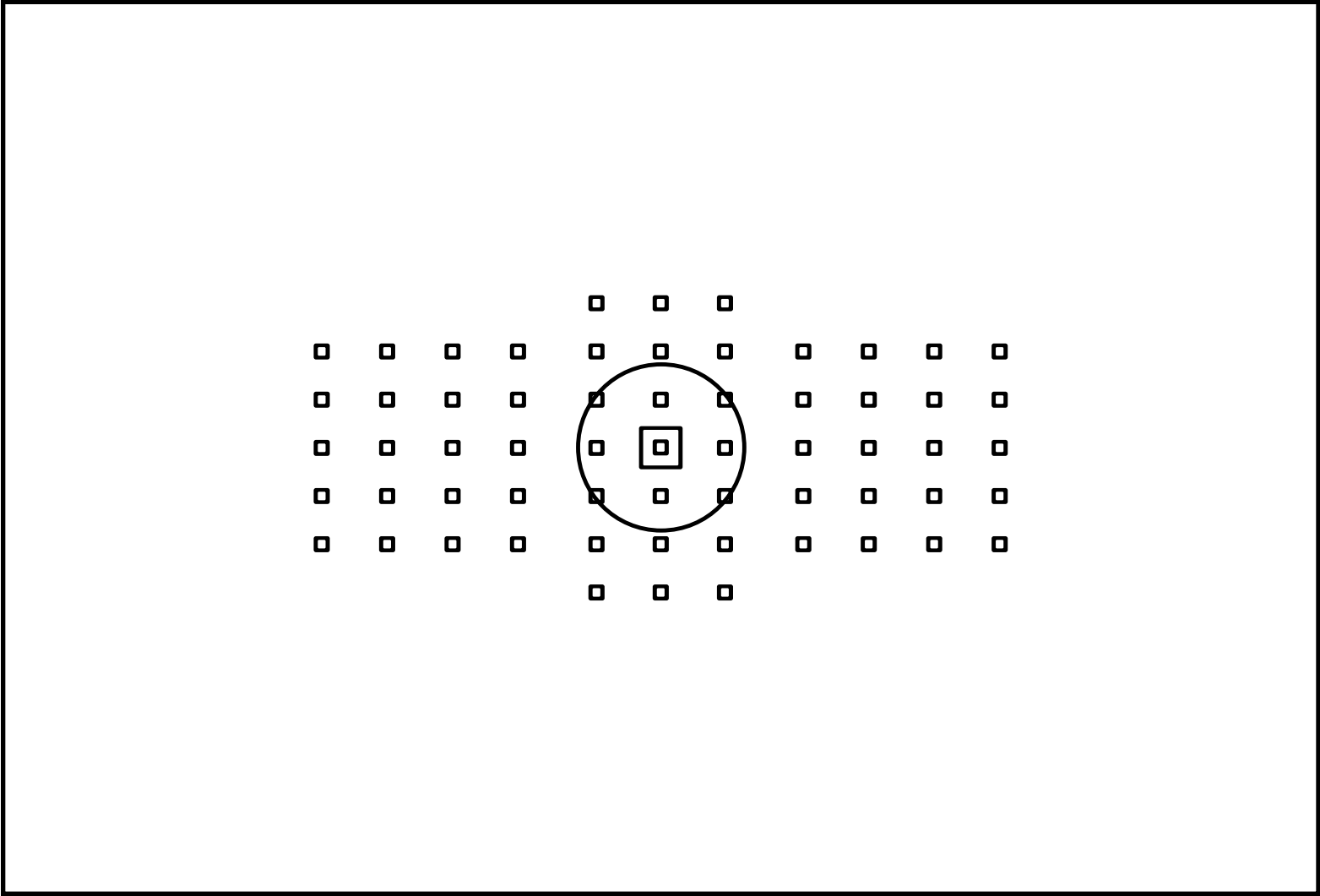


Single-point Spot AF

[Single-point spot AF] mode can be used to focus on a small area of the subject.

.....

Focusing on a small or narrow area



When set to [Single-point spot AF], a small rectangle is displayed inside the manually selected AF point.

[Single-point spot AF] mode makes it possible to focus on the exact area even when there is an obstacle near the area you want to focus on. A common example when shooting sports is when you want to focus on the eyes of a rider wearing a helmet. With normal settings, the AF point can easily get caught on the edge of the helmet near the eye, resulting in the camera focusing on this edge. In situations like this, [Single-point Spot AF] makes it possible to focus more accurately on the rider’s eye. As [Singlepoint Spot AF] only focuses on one very small area, it is not really suited to capturing fast moving subjects when set to AI Servo AF and may take longer to focus than other AF area selection modes.

Single-point
spot AF

Photo

View large
image by
touching



It is possible to focus on pinpoints such as the eye when a helmet is being worn

Snapshot of a BMX rider wearing a helmet. Focus was pinpointed on the eye using [Single-point spot AF].



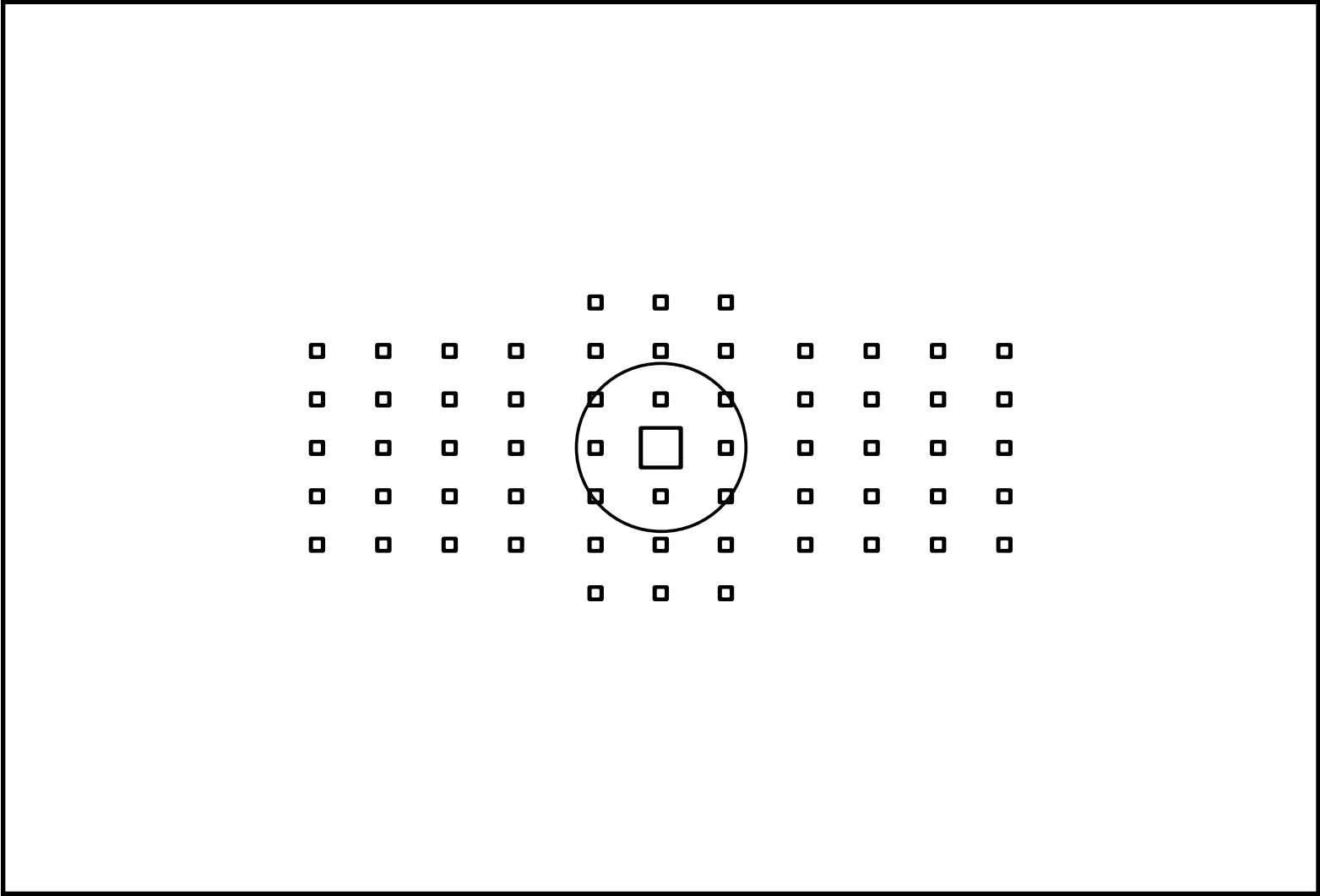
[Single-point spot AF] is effective when there is something like the edge of the helmet, or visor near the eye you want to focus on. With standard AF systems this can result in the AF system focusing on these edges rather than eye of the subject.

Single-point AF

Single-point AF is an easy to use mode for still life photos etc. in One-shot AF

.....

Single-point AF is a mode where one manually selected AF point is used to focus.



For experienced photographers or when it is easy to track the subject with a single AF point, AI Servo AF can be utilized when continuously shooting moving subjects, however, this mode is more effective for shooting still life and landscapes with One-shot AF mode.

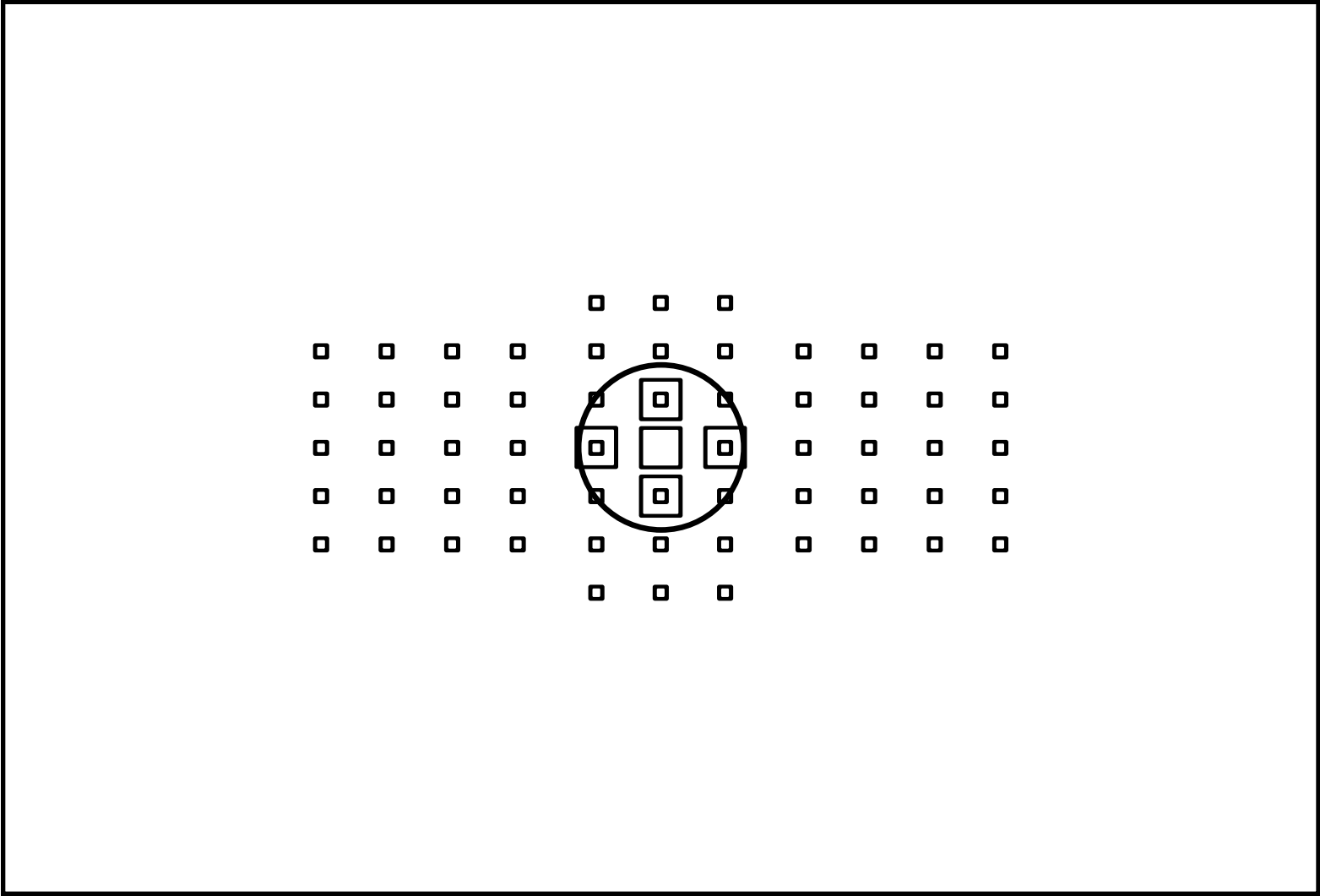
AF point expansion

(up, down, left, and right) (surrounding points)

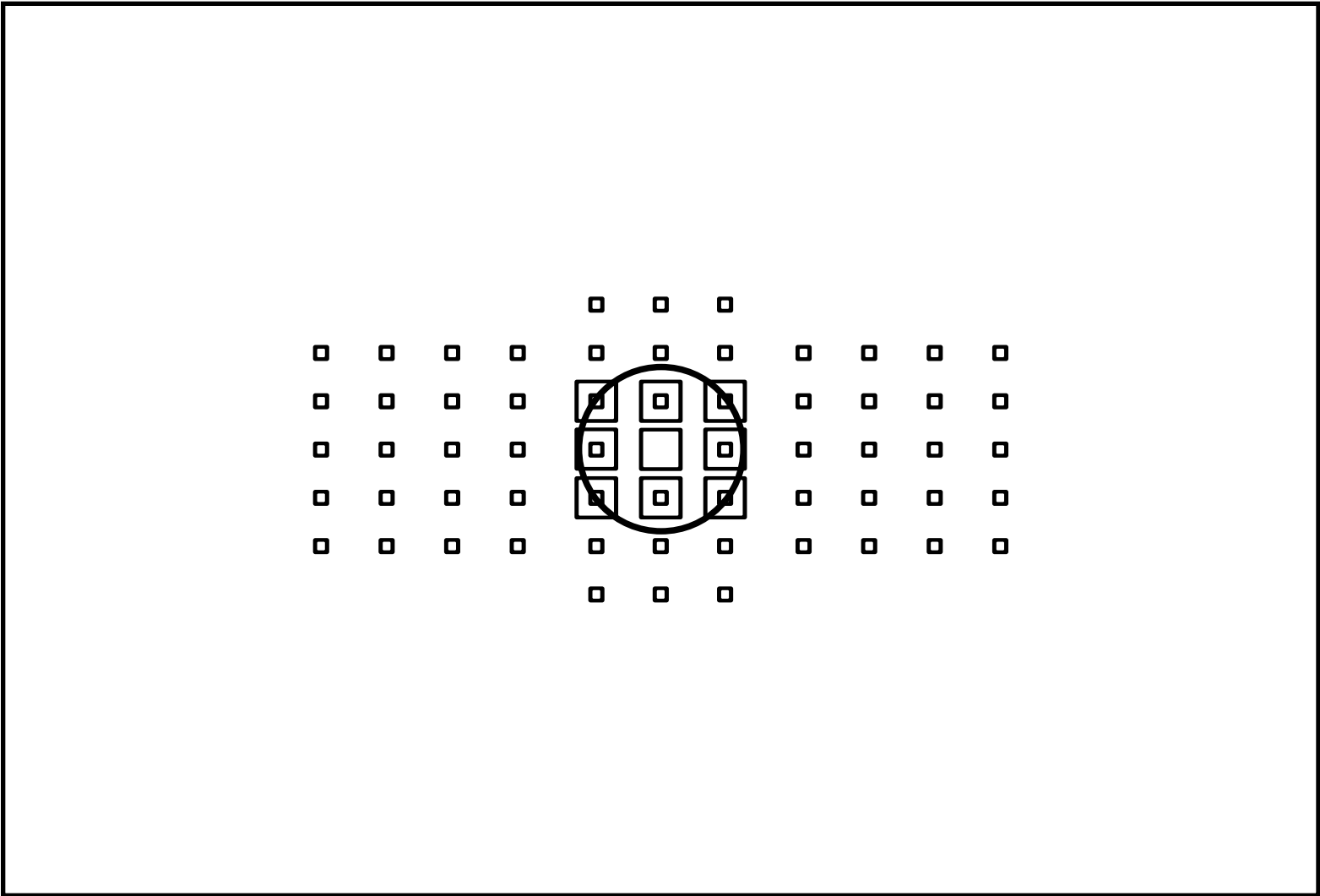
[AF point expansion] is an [AF area selection mode] that is best selected when shooting sports.

.....

For fast moving subjects that are difficult to track with a single AF point



Shooting with AF point expansion (up, down, left, and right)



AF point expansion (surrounding points)

Viewfinder display of [AF point expansion]. The manually selected AF point and surrounding points lights up.

Using this setting shifts the focus point used from a manually selected AF point, to an adjacent (up, down, left, and right, or surrounding) AF point, to aid focus tracking. When using this setting it is easier to obtain the desired composition as the subject is captured centering around the manually selected AF point. Based on the subject's movement characteristics, (i.e. likelihood of subject moving from the selected AF point) and the size of the subject within the frame, select either [AF point expansion] or [AF area selection mode]. In addition, when the subject has a lot of movement, setting Case 5 or Case 6 from the AF Configuration Tool is also recommended.

This mode is ideal for sports photography

AF point
expansion
(up, down, left, and right)

Photo

View large
image by
touching



[AF point expansion] mode can be used for a wide range of sporting events with erratic movement. [AF point expansion (Up, down, left, and right)] was able to accurately track the dribbling soccer player.

AF point
expansion
(surrounding points)

Photo

View large
image by
touching



As switching of the AF point takes place centered on the selected AF point with [AF point expansion], this mode makes it easy to obtain the desired composition. This high jump athlete was captured with [AF point expansion (surrounding)].

Hints & Tips

[Up, down, left, and right] and [surrounding] options can be selected according to the difficulty of reading the movement, and the relative importance to the central AF point

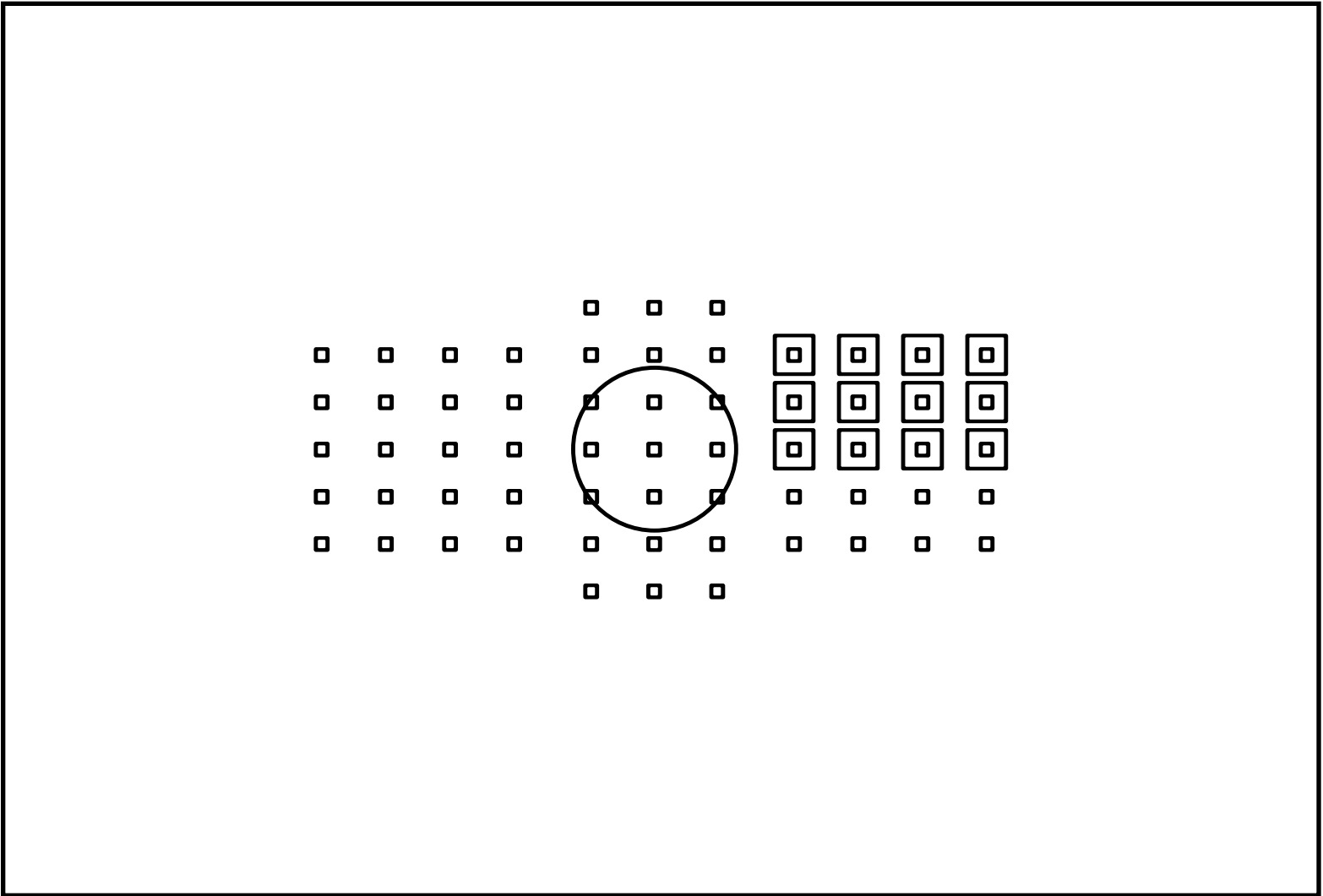
When shooting subjects which might be difficult to determine movement, select [surrounding] mode, and when you want to focus on the area covered by the central (manually selected) AF point it's best to select the [Up, down, left, and right] mode.

Zone AF

With the [Zone AF] mode, one of nine focusing zones can be selected, and the AF point is automatically selected from within that zone.

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Effective for capturing subjects within a known area

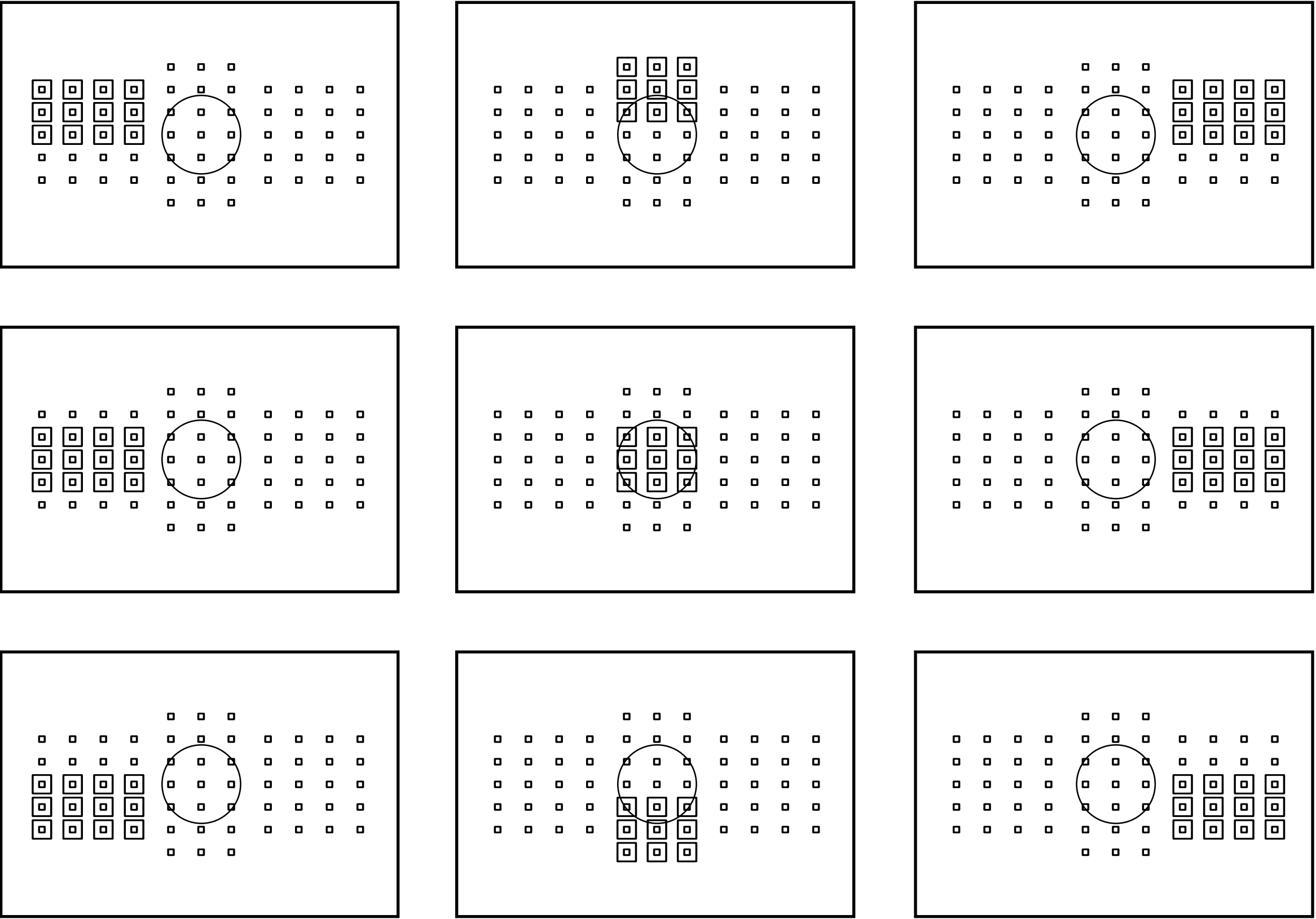


The selected AF points display in [Zone AF].

Zone AF differs from [AF point expansion] with it's manually selected AF point, which AF tracking is based around. With Zone AF the camera decides where to focus on the subject within the zone, rather than targeting the subject (area) that you want to follow closely. This is more suited for situations (the subject has no obstacles that may block the AF points). This mode is easy to use when you want to focus on areas of the subject that are a larger size, making it possible to easily capture the appropriate area.

Selection can be made from nine focusing zones

The 61 AF points are divided into three blocks, left, center, and right, and each has upper, central, and lower zones, and the desired location can be selected from these nine zones.

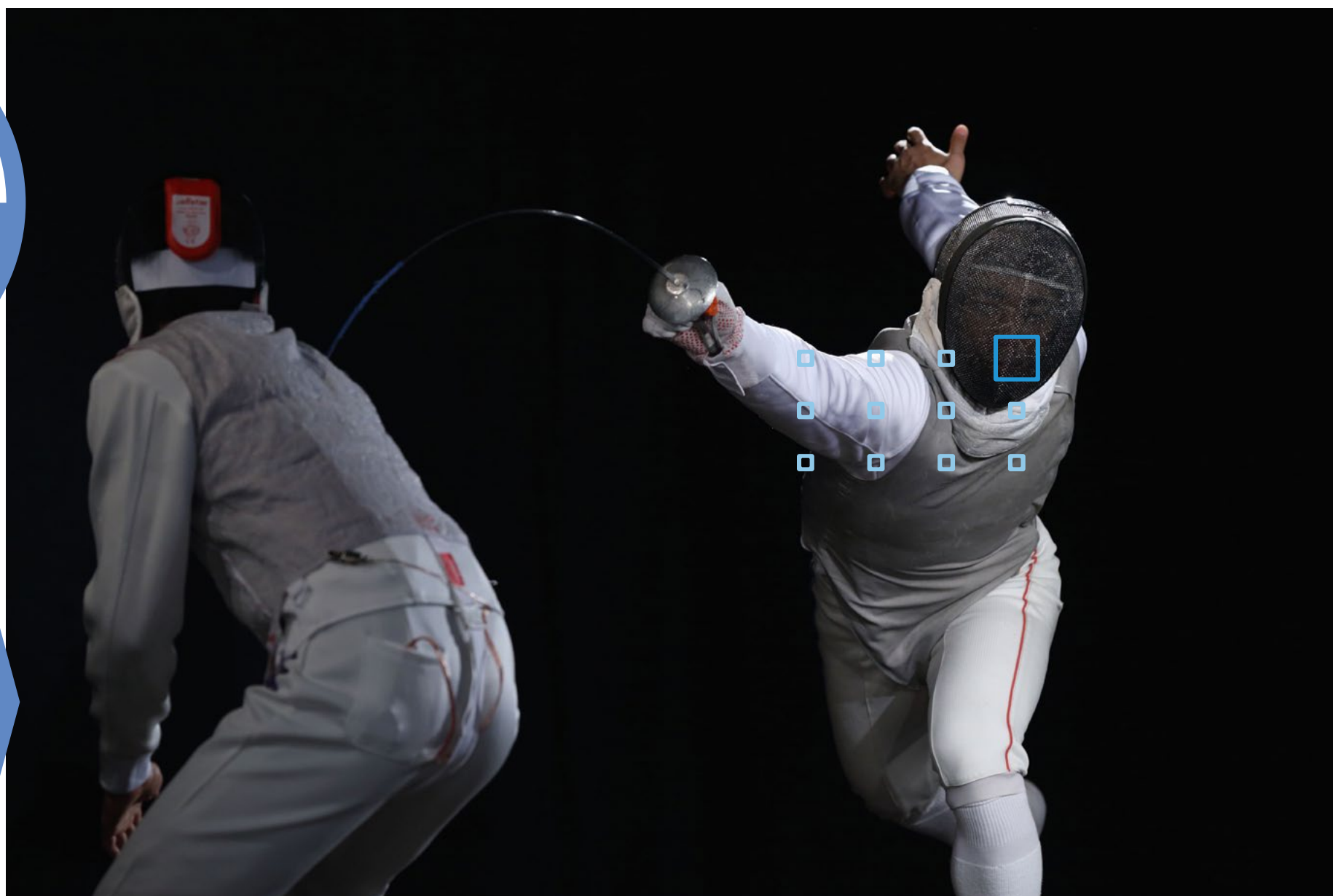


For larger subjects or subjects that move over a larger area

Zone AF

Photo

View large
image by
touching



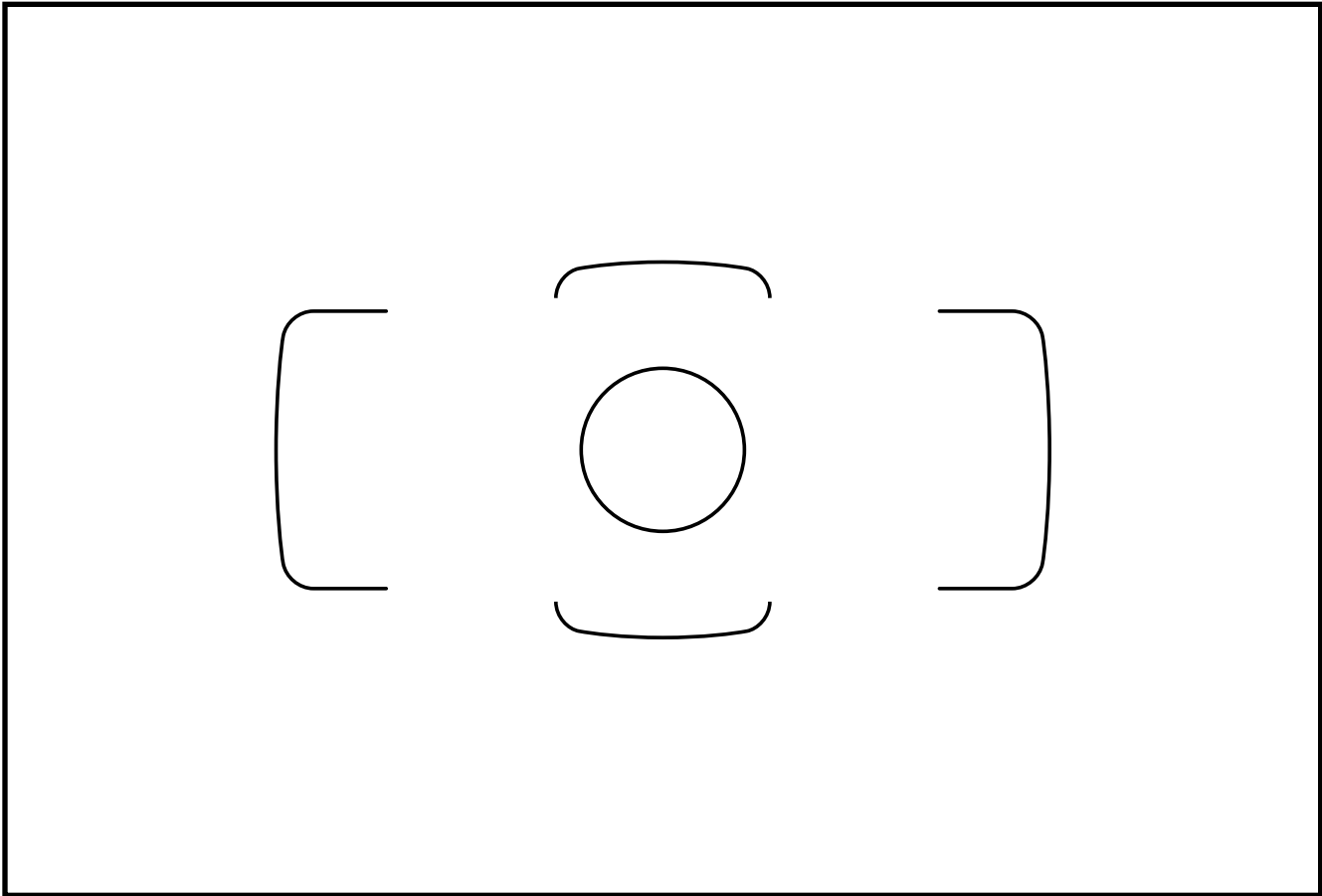
A photo of a moment of action in fencing shot with [Zone AF]. In order to focus on the fencer's facial area, this shot was taken by selecting the upper right zone.

Auto selection of 61 AF points

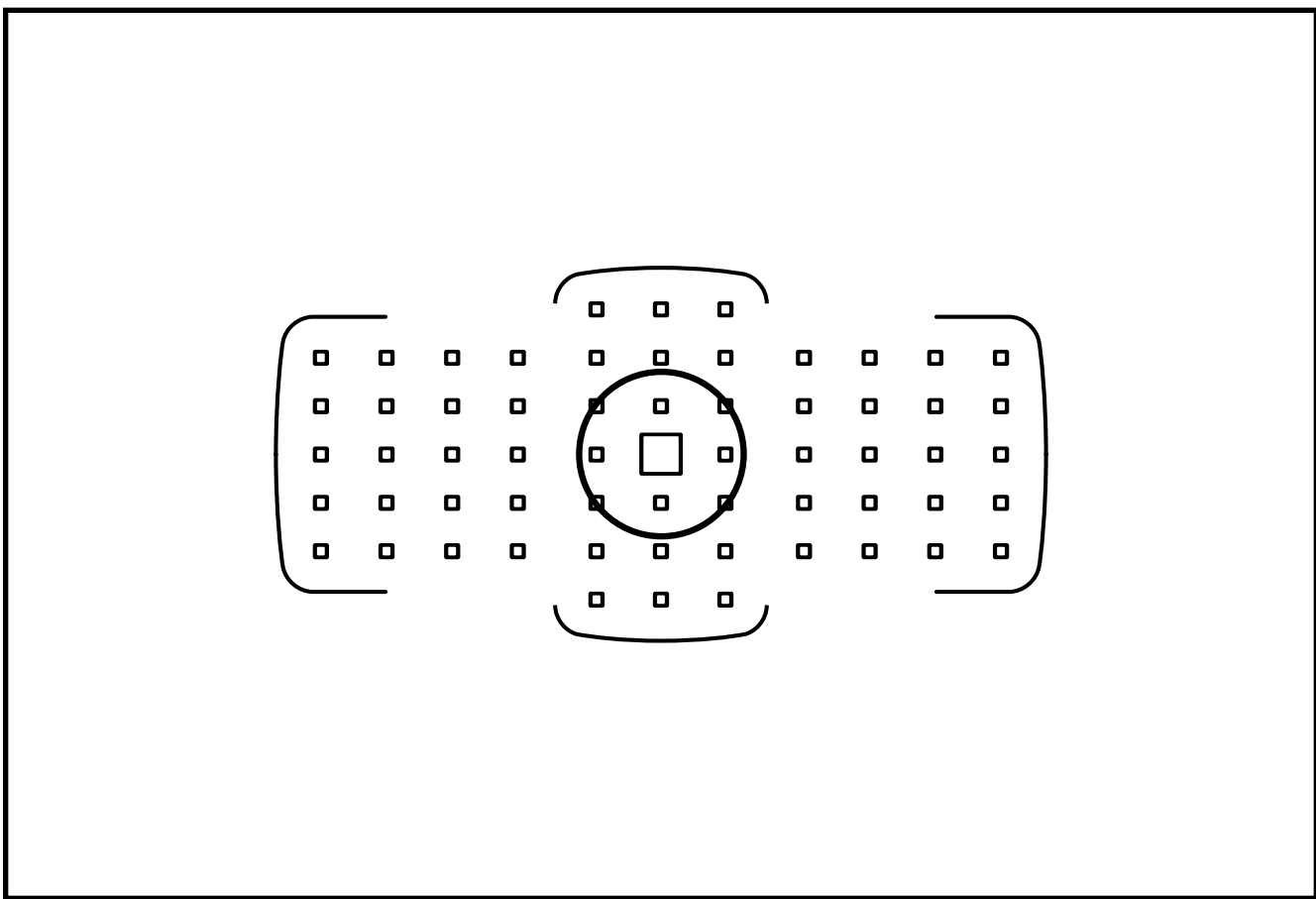
When using [Auto selection of 61 AF points] during [AI Servo AF], focusing will start from the manually selected AF point, the camera will the automatically change the AF point selecting from all 61 points as the subject moves.

.....

AI Servo AF with all 61 points used for automatic tracking



One-Shot AF



AI Servo AF

When using [One-Shot AF], a single AF point is selected automatically from the 61 points. When using [AI Servo AF], AF starts from the manually selected AF point and then selects the most appropriate from all 61 points.

The AF points are arranged in a wide area so it is useful for capturing and tracking of subjects, however, depending on the shooting conditions or if the subject is small, tracking may not be possible so caution is necessary. [Auto selection of 61 AF points] is effective when shooting subjects with movements that cannot be captured with [AF point expansion] or [Zone AF] (figure skating jump scenes for example). Another effective use is when you want to take action images for publication/articles with lots of space in the composition for text etc. In the examples above shooting began by capturing the targeted cyclist first with a manually selected AF point (in the center etc.). From there, while continuous shooting and moving the camera (lens) to the left or right, it is possible to position the lead cyclist off to one side and include a lot of background (focusing continues to track the cyclist by automatically switching AF points).



Capture the subject with an AF point near the center, and then by moving the camera to the left, you can compose a photo with space on the left side of the frame.

Shooting started by pinpointing focus on the leader of a cycling road race with a manually selected AF point. While taking continuous shots, the camera was moved to the left so the following cyclists on the left of the leader are rendered beautifully out of focus in the background.

Ideal for moving subjects that the old AF systems struggle with

Auto selection of 61 AF points

Photo

View large image by touching



Hints & Tips

With "AI Servo AF" mode, it is possible to start shooting using a manually selected AF frame covering the subject. This makes continue tracking of the subject easy. For convenience it is possible to select the same start position for Single Point AF and 61 Point automatic selection AF and switch between the two as required.

EOS-1D X 61-Point High-Density Reticular AF

Overview of EOS-1D X 61-Point High-Density Reticular AF



61-point AF (1)

The number and placement of cross-type points used by the f/2.8 lenses



61-point AF (2)

The number and placement of cross-type points used by the f/4 lenses



61-point AF (3)

The number and placement of cross-type points used by the f/5.6 lenses



61-point AF (4)

The number and placement of cross-type points used by the f/8 lenses



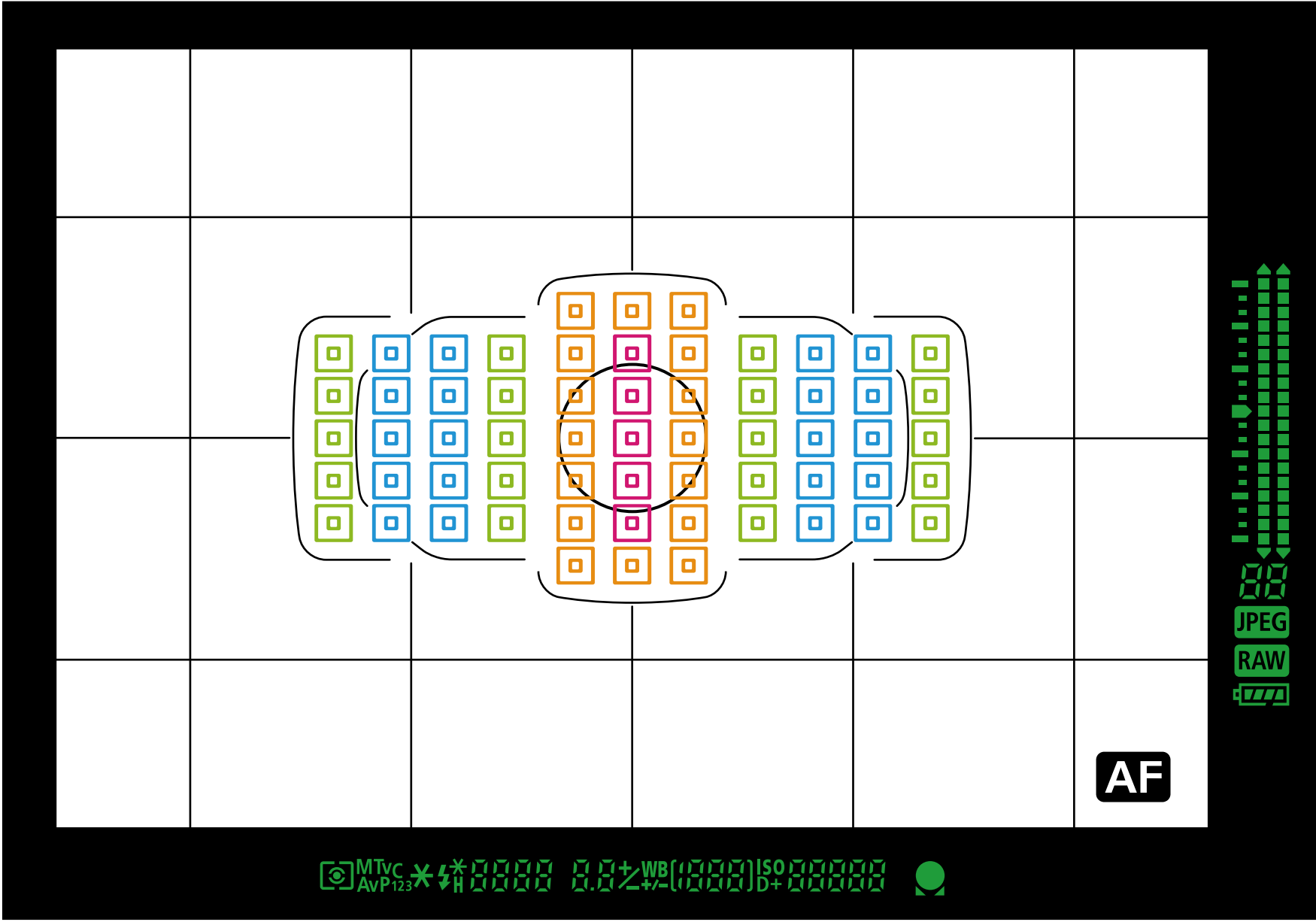
Overview of EOS-1D X 61-Point High-Density Reticular AF

The 61-point AF has numerous cross-type points for great tracking performance

.....

Up to 41-point cross-type AF with f/4 lenses, enabling superior tracking performance with most lenses

This diagram shows the distribution of the 61-point cross-type AF points in the EOS-1D X. The five AF points at the center operate as dual cross-type AF points at f/2.8, 41 cross-type AF points are available for f/2.8-f/4 lenses and the centre 21 AF points serve as cross-type with f/5.6. This makes it possible to focus with high precision and high tracking performance with the many AF points.

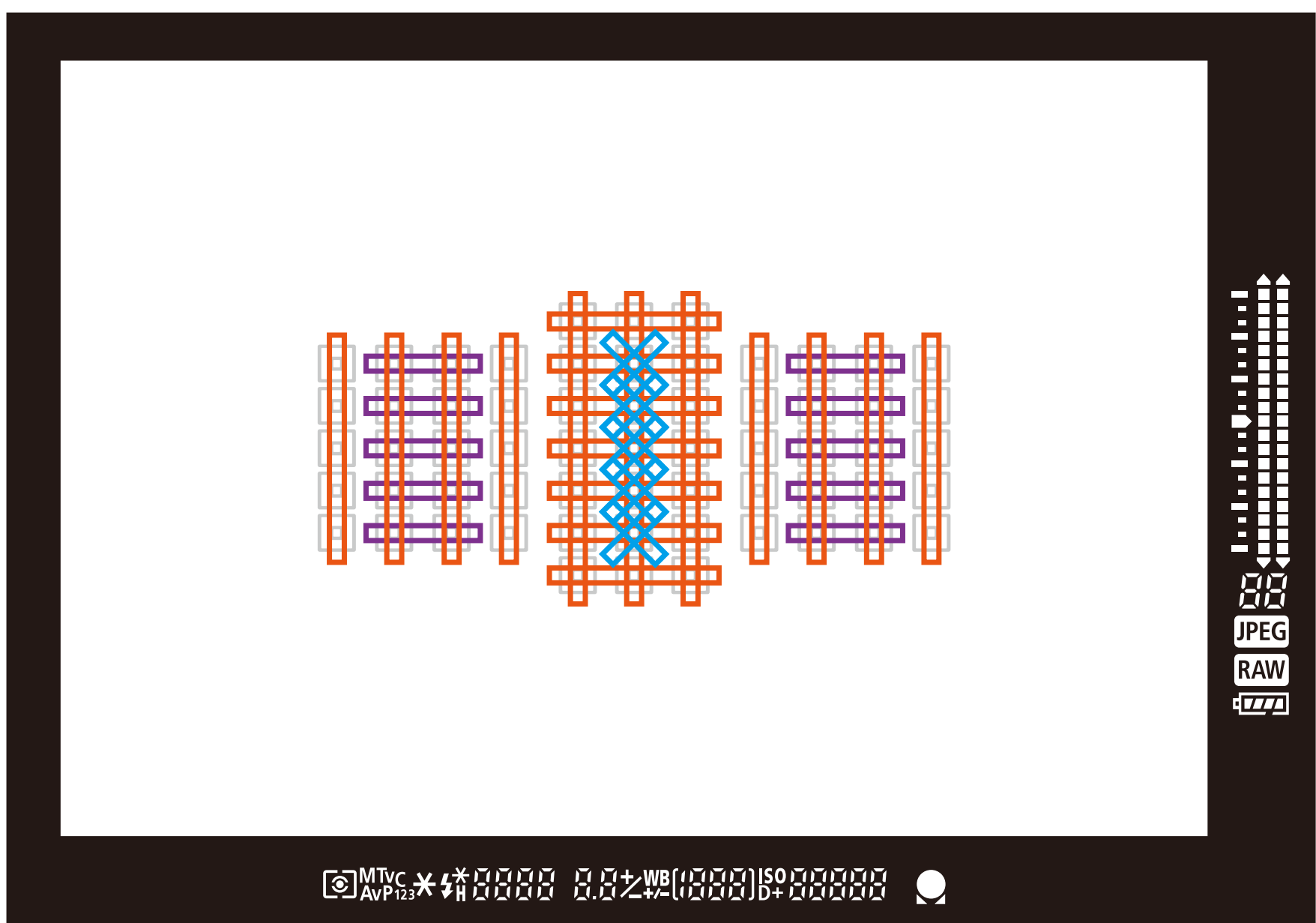
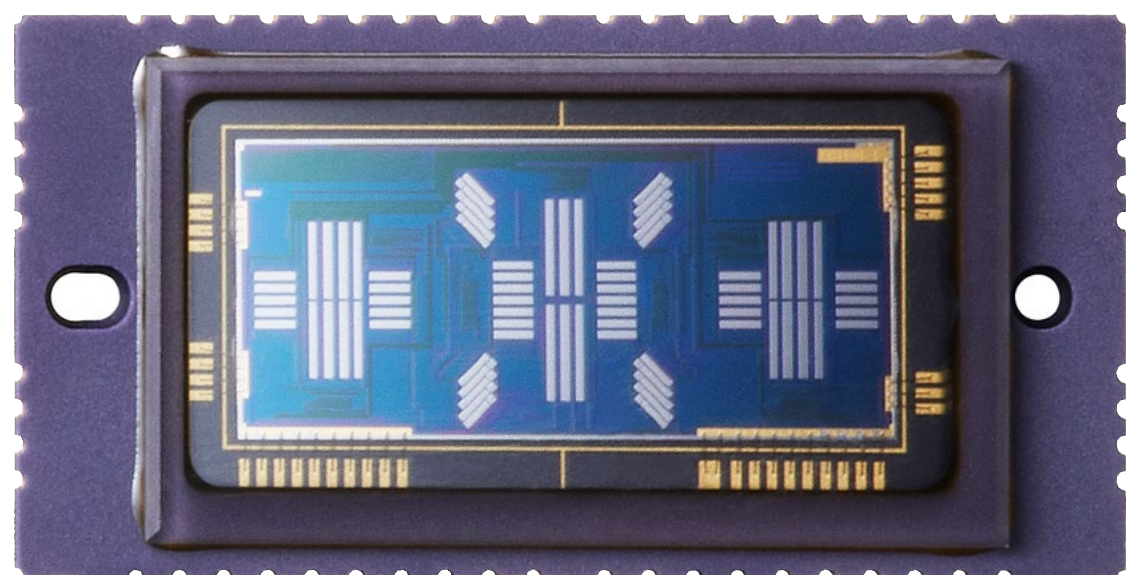


*The colored AF points are for illustrative purpose only. This does not represent the actual viewfinder display.

-  **f/2.8 and f/5.6 cross-type AF (dual-cross AF)**
-  **f/5.6 cross-type AF**
-  **f/4 (vertical-line focusing) + f/5.6 (horizontal-line focusing) cross-type AF**
-  **f/5.6 (horizontal-line focusing) AF**

Newly developed 61-point AF sensor

By increasing number of AF points greater freedom of composition is possible. The large number of cross-type AF points improves tracking performance. And as a result of two-line AF sensors in a zigzag pattern, tracking performance is improved for low contrast subjects as well.



✕ f/2.8 cross-type AF

— f/4.0 vertical-line focusing AF

— f/5.6 vertical-line focusing AF

— f/5.6 horizontal-line focusing AF

Multi-point cross focusing is possible even using lenses with a maximum aperture f-number of f/4

The AF system of the EOS-1D X has many attractive features such as the high level of composition freedom with 61 different AF points, AF area selection modes that utilize the merits of the multi-point AF system, and implementation of the AF Configuration Tool which takes advantage of the improved AI Servo AF. In addition to these, is the high precision and improved tracking performance of each AF point to capture the subject. With the EOS-1D X AF focusing system, most f/2.8 - f/4 lenses can utilize the high-performance 41-point cross-type AF points. As Canon produce a large number of high performance f/2.8 and f/4 AF points, this makes it possible for larger aperture lenses to achieve an even higher level of focusing precision with these AF points than ever before.

61-point AF (1)

The number and placement of cross-type points used by the f/2.8 lenses

41-point cross-type AF points and 5 Dual Cross-f/2.8 AF points can be used with many lenses

Most large-aperture lenses with a maximum aperture of f/2.8, (or lower f-number values) are in Group A. With this group, the five f/2.8 dual-cross AF points, and the left and right f/4 and f/5.6 cross-type AF points (20 points) can be used. There are a total of 41 cross-type points including the f/5.6 cross-type points. Lenses with a maximum aperture of f/2.8 in Group B, will only have a single f/2.8 dual-cross AF point in the center.



EF400mm F2.8L IS II USM

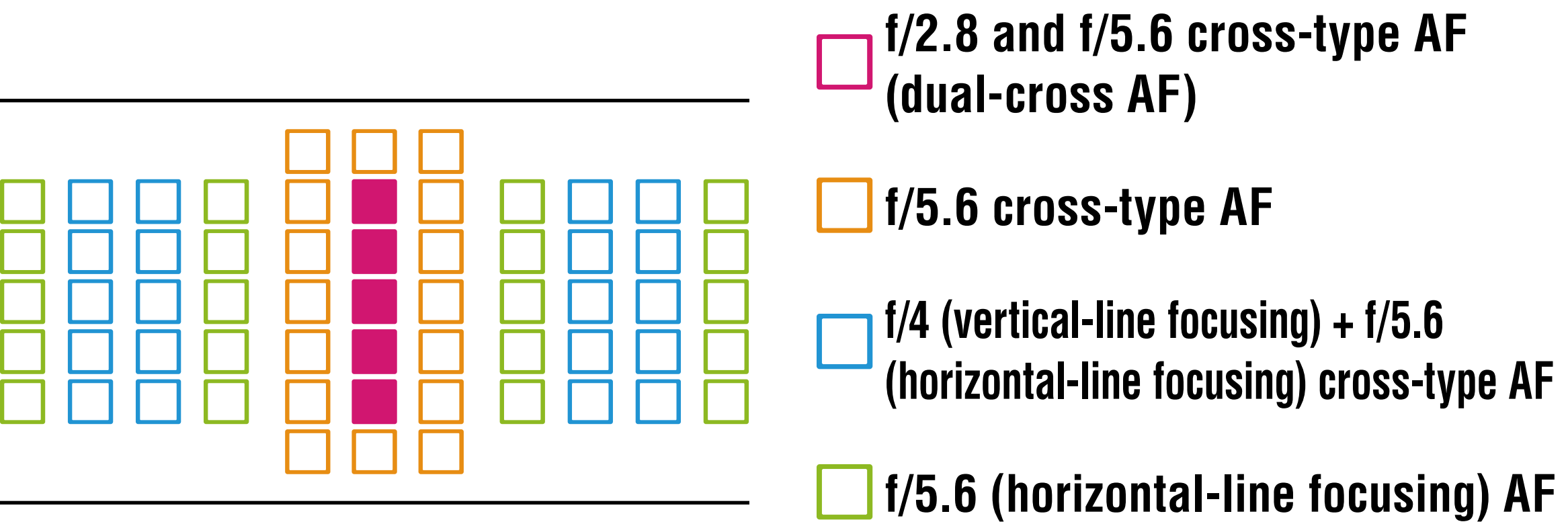


EF85mm F1.2L II USM

Group A

41-point cross-type AF, with five f/2.8 dual-cross AF points at the center

AF focusing is possible with 61 points. All AF area selection modes can be chosen.



Major lenses

EF24mm F1.4L USM	EF24mm F1.4L II USM
EF35mm F2 IS USM	EF28mm F1.8 USM
EF35mm F1.4L USM	EF35mm F2
EF50mm F1.0L USM	EF50mm F1.2L USM
EF50mm F1.4 USM	EF50mm F1.8
EF50mm F1.8 II	EF85mm F1.2L USM
EF85mm F1.2L II USM	EF85mm F1.8 USM
EF100mm F2 USM	EF135mm F2L USM
EF135mm F2L USM + Ext EF1.4x	EF135mm F2.8 (with soft focus)
EF200mm F1.8L USM	EF200mm F1.8L USM + Ext EF1.4x
EF200mm F2L IS USM	EF200mm F2L IS USM + Ext EF1.4x
EF200mm F2.8L USM	EF200mm F2.8L II USM
EF300mm F2.8L USM	EF300mm F2.8L IS USM
EF300mm F2.8L IS II USM	EF400mm F2.8L USM
EF400mm F2.8L II USM	EF400mm F2.8L IS USM
EF400mm F2.8L IS II USM	TS-E45mm F2.8*
TS-E90mm F2.8*	EF16-35mm F2.8L USM
EF16-35mm F2.8L II USM	EF17-35mm F2.8L USM
EF20-35mm F2.8L	EF28-70mm F2.8L USM
EF24-70mm F2.8L II USM	EF70-200mm F2.8L USM
EF70-200mm F2.8L IS USM	EF70-200mm F2.8L IS II USM

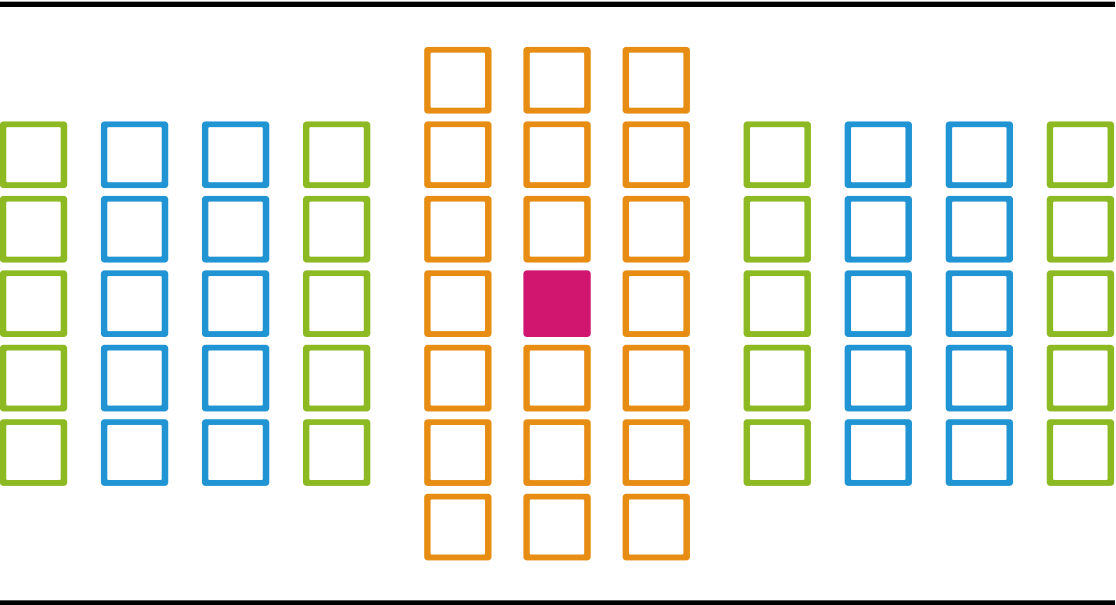
* Focus confirmation light works during manual focus (without any tilt or shift movements).

“Ext EF1.4x” is an abbreviation of various EF 1.4x Extenders.

Group B

41-point cross-type AF, with one f/2.8 dual-cross AF point at the center

AF focusing is possible with 61 points. All AF area selection modes are available.



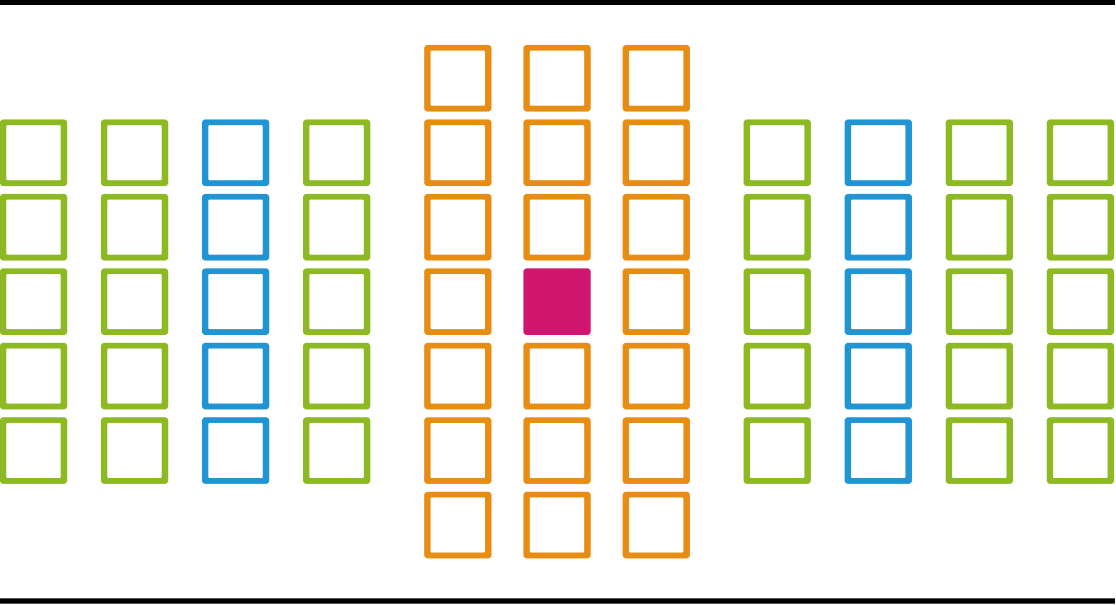
Major lenses

EF14mm F2.8L II USM
EF20mm F2.8 USM
EF24mm F2.8
EF24mm F2.8 IS USM
EF28mm F2.8 IS USM
EF24-70mm F2.8L USM

Group D

31-point cross-type AF, with one f/2.8 dual-cross AF point at the center

AF focusing is possible with 61 points. All AF area selection modes are available.



Major lenses

EF28mm F2.8
EF40mm F2.8 STM

61-point AF (2)

The number and placement of cross-type points used by the f/4 lenses

41-point cross-type AF points can be used

In Group C, 41-point cross-type AF points can be used with lenses having an f/4 maximum aperture (or f/2.8 maximum aperture lenses using the EF 1.4x Extenders). Of these, the 20 points on the left and right are f/4 and f/5.6 cross-type AF providing even higher precision focus in these areas than with previous cameras. Some macro lenses with a maximum aperture of f/2.8 are also included.



EF70-200mm f/4L IS USM

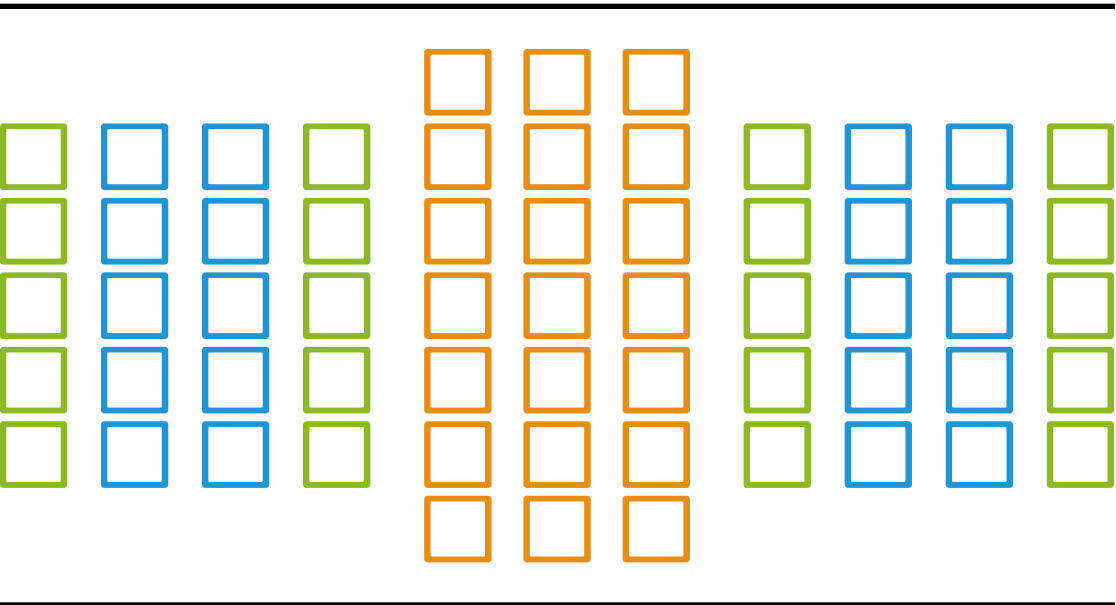


EF 17-40mm f/4 L USM

Group C

41-point cross-type AF points available, and they can be used with a high level of tracking performance

AF focusing is possible with all 61 points.
All AF area selection modes are available.



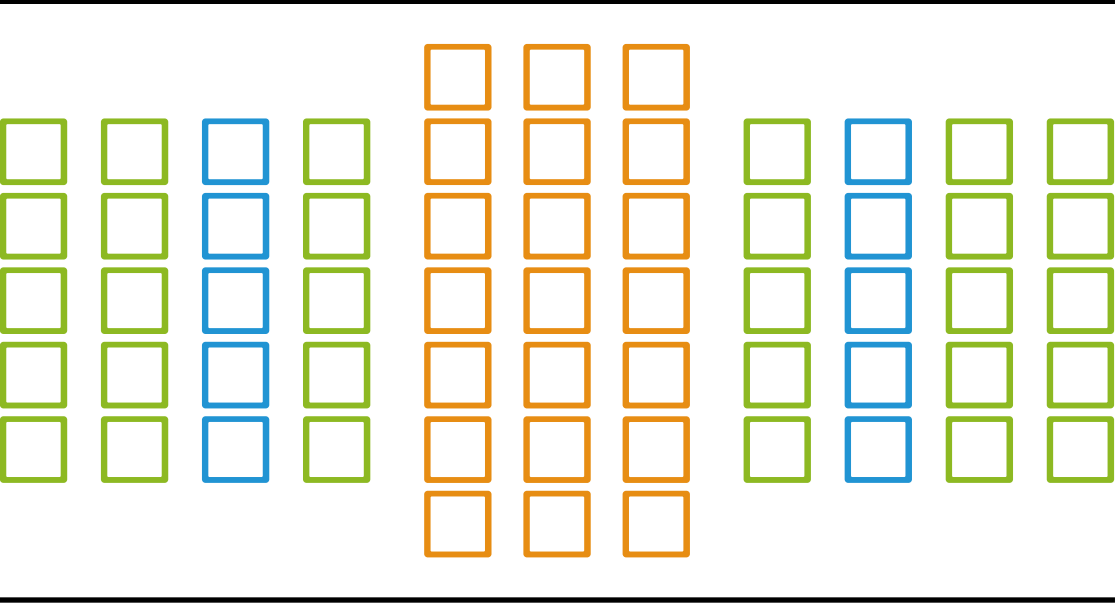
Major lenses

EF50mm f/2.5 Compact Macro	EF100mm f/2.8L Macro IS USM
EF300mm F4L IS USM	EF200mm F2.8L USM + Ext EF1.4x
EF200mm F2.8L II USM + Ext EF1.4x	EF300mm F2.8L USM + Ext EF1.4x
EF300mm F2.8L IS USM + Ext EF1.4x	EF300mm F2.8L IS II USM + Ext EF1.4x
EF400mm F2.8L USM + Ext EF1.4x	EF400mm F2.8L II USM + Ext EF1.4x
EF400mm F2.8L IS USM + Ext EF1.4x	EF400mm F2.8L IS II USM + Ext EF1.4x
EF135mm F2L USM + Ext EF2x	EF200mm F1.8L USM + Ext EF2x
EF200mm F2L IS USM + Ext EF2x	EF8-15mm f/4L Fish eye USM
EF17-40mm F4L USM	EF24-70mm F4L IS USM
EF24-105mm F4L IS USM	EF70-200mm F4L USM
EF70-200mm F4L IS USM	EF70-200mm F2.8L USM + Ext EF1.4x
EF70-200mm F2.8L IS USM + Ext EF1.4x	EF70-200mm F2.8L IS II USM + Ext EF1.4x
EF500mm F4L IS USM	EF500mm F4L IS II USM
EF600mm F4L IS USM	EF600mm F4L IS II USM

Group I

31-point cross-type AF points available 10 cross-type points supported f/4 + f/5.6

AF can be carried out using 61 points (cross-type focusing is possible with 31 points). You can choose all AF area selection modes.



Major lenses

EF200-400mm F4L IS USM +Ext x1.4
(When not using built-in Ext x1.4)

61-point AF (3)

The number and placement of cross-type points used by the f/5.6 lenses

Majority of lenses can make use of the central 21-point cross-type AF

With the exception of a small group of lenses (groups F and G), almost all lenses that have a maximum aperture of f/4 or greater are included in Group E, and can use the 21-point cross-type AF (f/5.6 cross-type) in the central area. Many f/2.8 maximum aperture large aperture telephoto lenses when used with the various EF 2x Extenders will fit into this group.



EF100-400mm f/4.5-5.6L IS USM

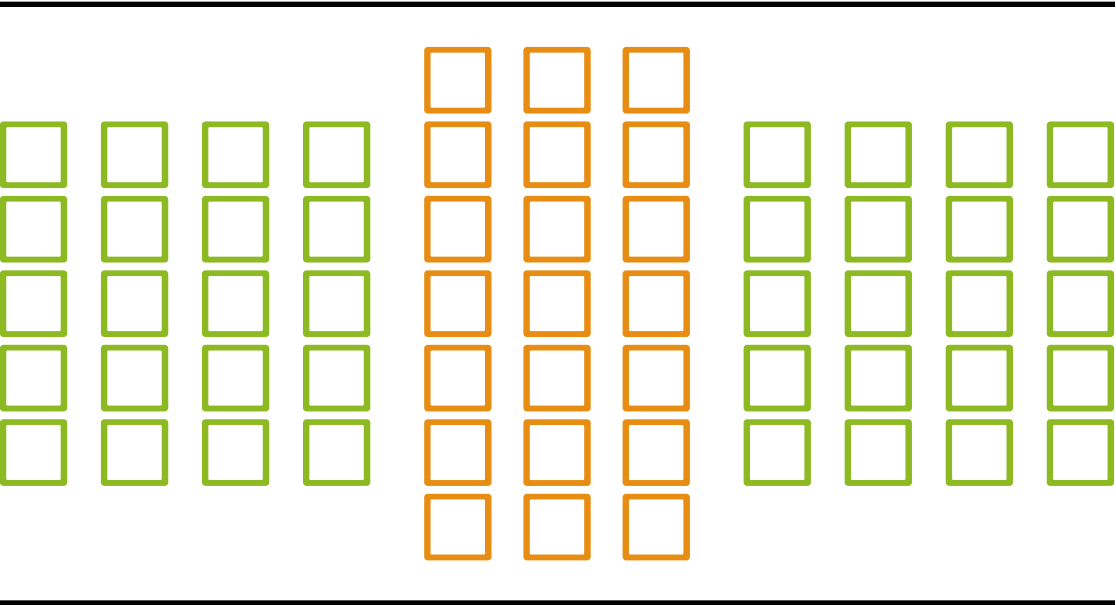


EF70-300mm f/4-5.6L IS USM

Group E

The central 21-point cross-type AF can be used

AF focusing is possible with 61 points. All AF area selection modes are available.



Major lenses

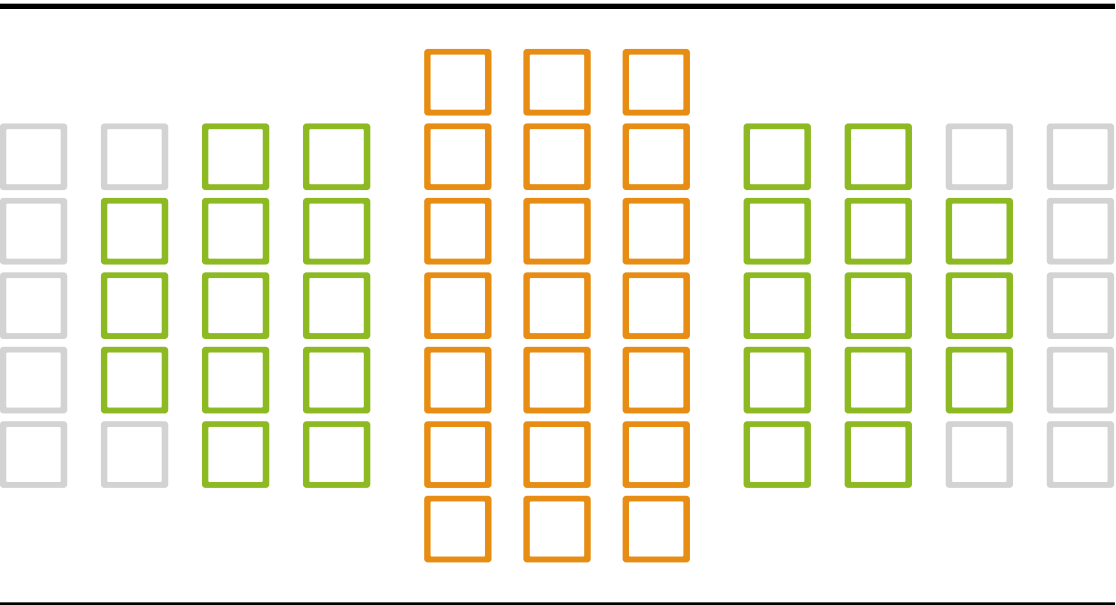
EF50mm f/2.5 compact macro + life size converter EF	EF100mm f/2.8 Macro USM
EF400mm F5.6L USM	EF500mm F4.5L USM
EF300mm F4L USM + Ext EF1.4x	EF300mm F4L IS USM + Ext EF1.4x
EF400mm F4 DO IS USM + Ext EF1.4x	EF500mm F4L IS USM + Ext EF1.4x
EF600mm F4L USM + Ext EF1.4x	EF600mm F4L IS USM + Ext EF1.4x
EF200mm F2.8L USM + Ext EF2x	EF200mm F2.8L II USM + Ext EF2x
EF300mm F2.8L USM + Ext EF2x	EF300mm F2.8L IS USM + Ext EF2x
EF300mm F2.8L IS II USM + Ext EF2x	EF400mm F2.8L USM + Ext EF2x
EF400mm F2.8L II USM + Ext EF2x	EF400mm F2.8L IS USM + Ext EF2x
EF400mm F2.8L IS II USM + Ext EF2x	EF500mm F4L IS II USM + Ext EF1.4x
EF600mm F4L IS II USM + Ext EF1.4x	EF70-200mm F2.8L USM + Ext EF2x
EF70-200mm F2.8L IS USM + Ext EF2x	EF70-200mm F2.8L IS II USM + Ext EF2x
EF70-200mm F4L USM + Ext EF1.4x	EF70-200mm F4L IS USM + Ext EF1.4x
EF28-300mm F3.5-5.6L IS USM	EF70-300mm F4-5.6 IS USM
EF70-300mm F4-5.6L IS USM	EF70-300mm F4.5-5.6 DO IS USM
EF100-400mm F4.5-5.6L IS USM	EF200-400mm F4L IS USM +Ext EF x1.4 (*1)

*1 When using built-in Ext EF x1.4 or externally-mounted Ext EF x1.4

Group F

21-points cross-type available, total of 47 AF points available to select

AF focusing is possible with 47 points (61-point AF is not possible). All AF area selection modes can are available.



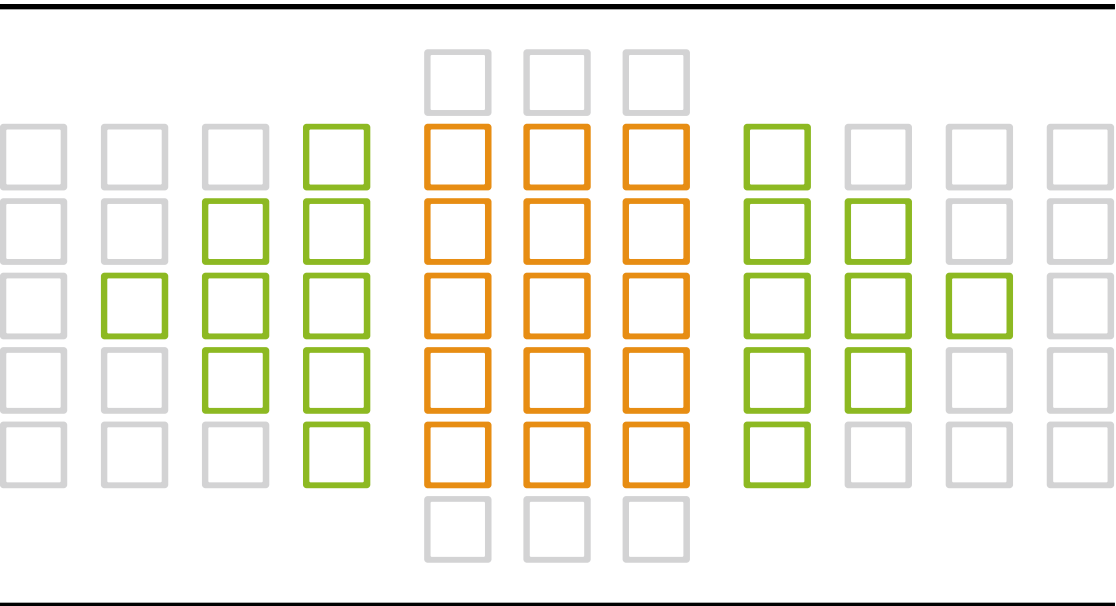
Major lenses

EF800mm F5.6L IS USM
EF35-350mm F3.5-5.6L USM

Group G

15-points cross-type available, total of 33 AF points available to select

AF focusing is possible with 33 points (61-point AF is not possible). All AF area selection modes can are available.



Major lenses

EF180mm f/3.5L Macro USM
EF180mm f/3.5L Macro USM + Ext EF1.4x
EF1200mm F5.6L USM

61-point AF (4)

The number and placement of cross-type points used by the f/8 lenses

AF shooting is possible using the center AF point even with a maximum aperture value of f/8

When using an extender on the EOS-1D X, AF is possible using the single center point in the viewfinder even on a lens with a total maximum aperture of f/8.

This combination of a lens with a maximum aperture value of f/4 + Ext EF2x and a lens with a main maximum aperture value of f/5.6 + Ext EF1.4x belongs in group H. For example, AF focusing is possible even when shooting with an EF2x extender attached to an EF500mm F4LII USM with a focal length of 1000mm, making extenders even more useful.



EF500mm F4L IS II USM

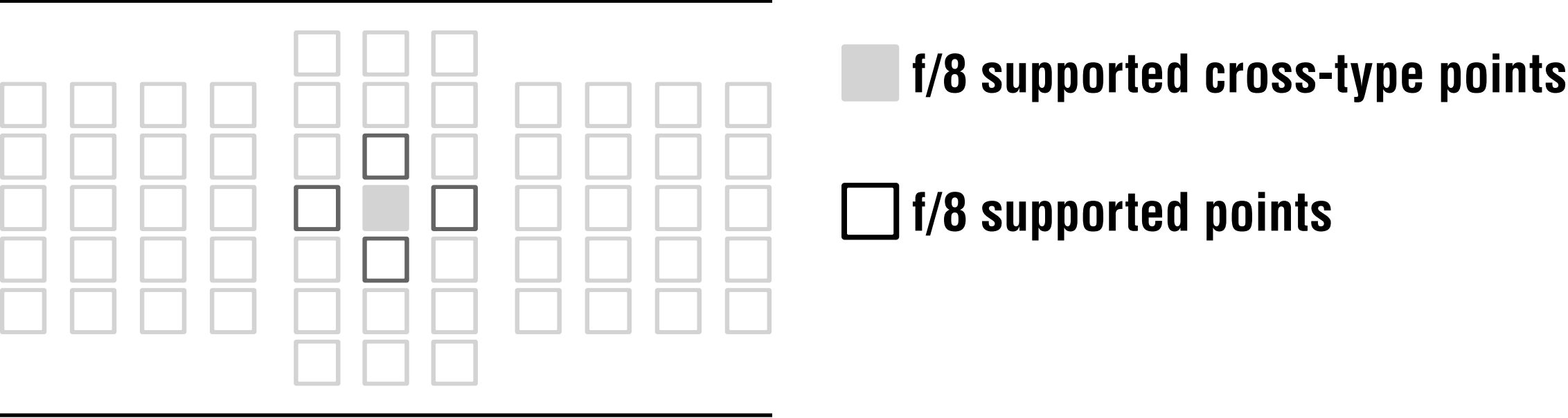


Extender EF 2x III

Group H

Single cross-type AF point available

You can carry out AF focusing with a single point, or using the points above, below, to the left and right. The following AF area selection modes are available: Single-point AF (Manual), Single-point Spot AF (Manual), and AF point expansion (Above, below, left, right). The points above, below, to the left and right only function in AF point expansion and cannot be selected manually.



Major lenses

EF400mm F4 DO IS USM + Ext 2x	EF500mm F4L IS II USM + Ext 2x
F600mm F4L IS II USM + Ext 2x	EF500mm F4L IS USM + Ext 2x
EF600mm F4L IS USM + Ext 2x	EF100-400mm F4.5-5.6L IS USM + Ext 1.4
EF70-200mm F4L IS USM + Ext 2x	
EF200-400mm F4L IS USM built-in Ext.1.4 + externally-mounted Ext 1.4	
EF200-400mm F4L IS USM + externally-mounted Ext 2.0	



Single-Point

How to utilize maximum aperture f/2.8 lens + extender EF1.4x and maximum aperture f/4 lens + extender EF2x

Many large-aperture telephoto lenses (200 to 400mm f/2.8 class) fall into group C when extender EF1.4x is attached and used at the maximum aperture value of f/4. High-performance AF is possible due to f/4 support of 20 points out of 41 cross-type points. Additionally, large-aperture super telephoto lenses (500 to 600mm f/4 class) fall into group H when extender EF2x is attached and used at the maximum aperture value of f/8. AF focusing is possible using a single center AF point even with a maximum aperture value of f/8. Using extender lets you adapt easily for long focal length shooting.

Release property settings during Servo AI

NEW! Firmware

Improved low-light AF performance and expanded parameter characteristics during continuous shooting

AF operation and shutter-release timing settings



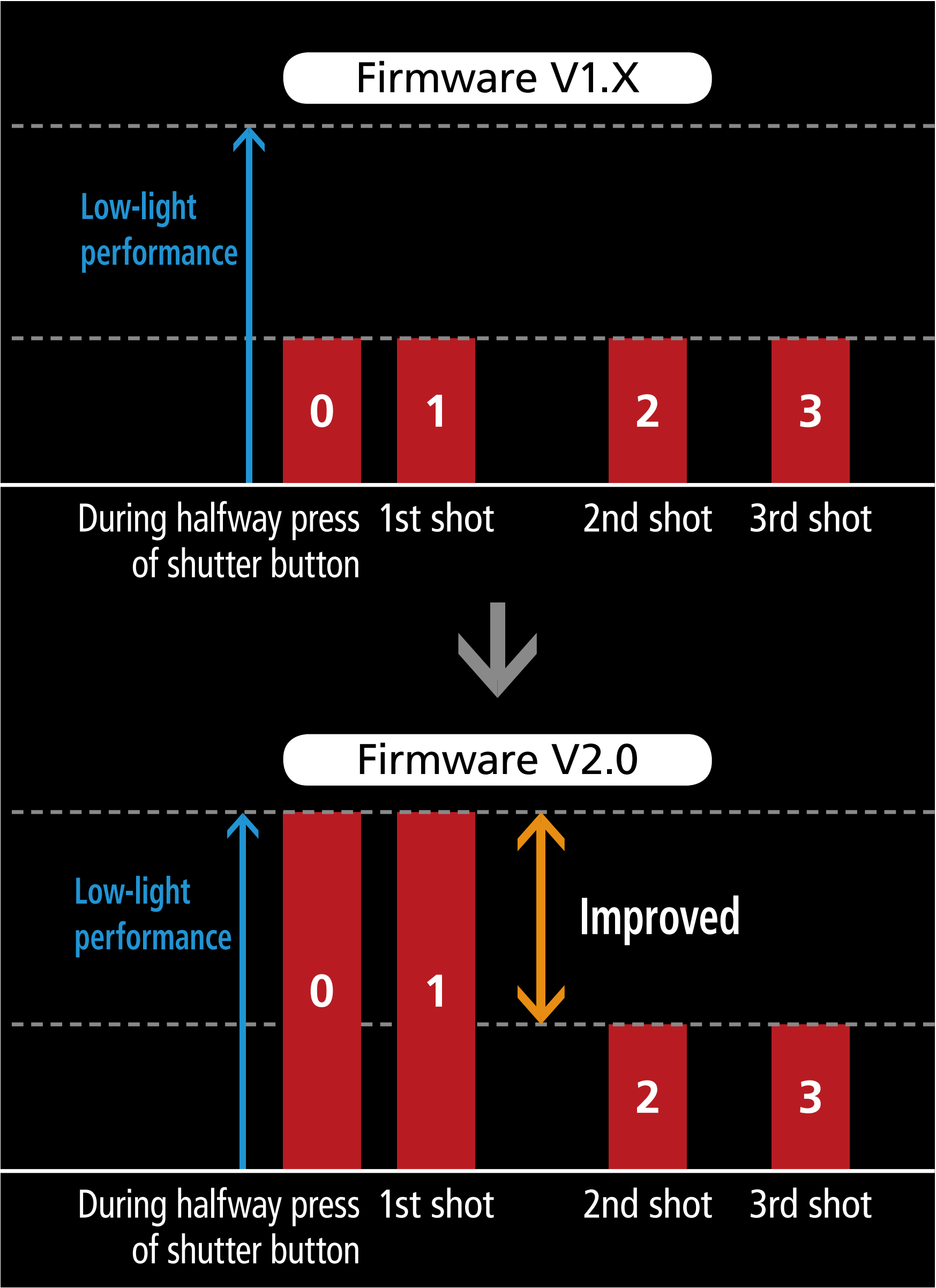


Improved low-light AF performance and expanded parameter characteristics during continuous shooting

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Improved AI Servo AF low-light performance through a new algorithm

Visualization of low-light performance

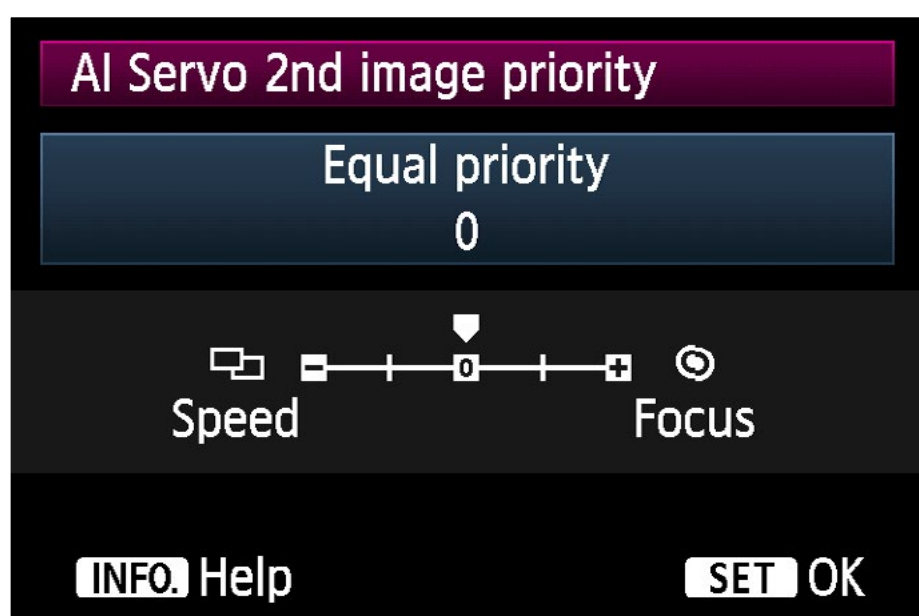
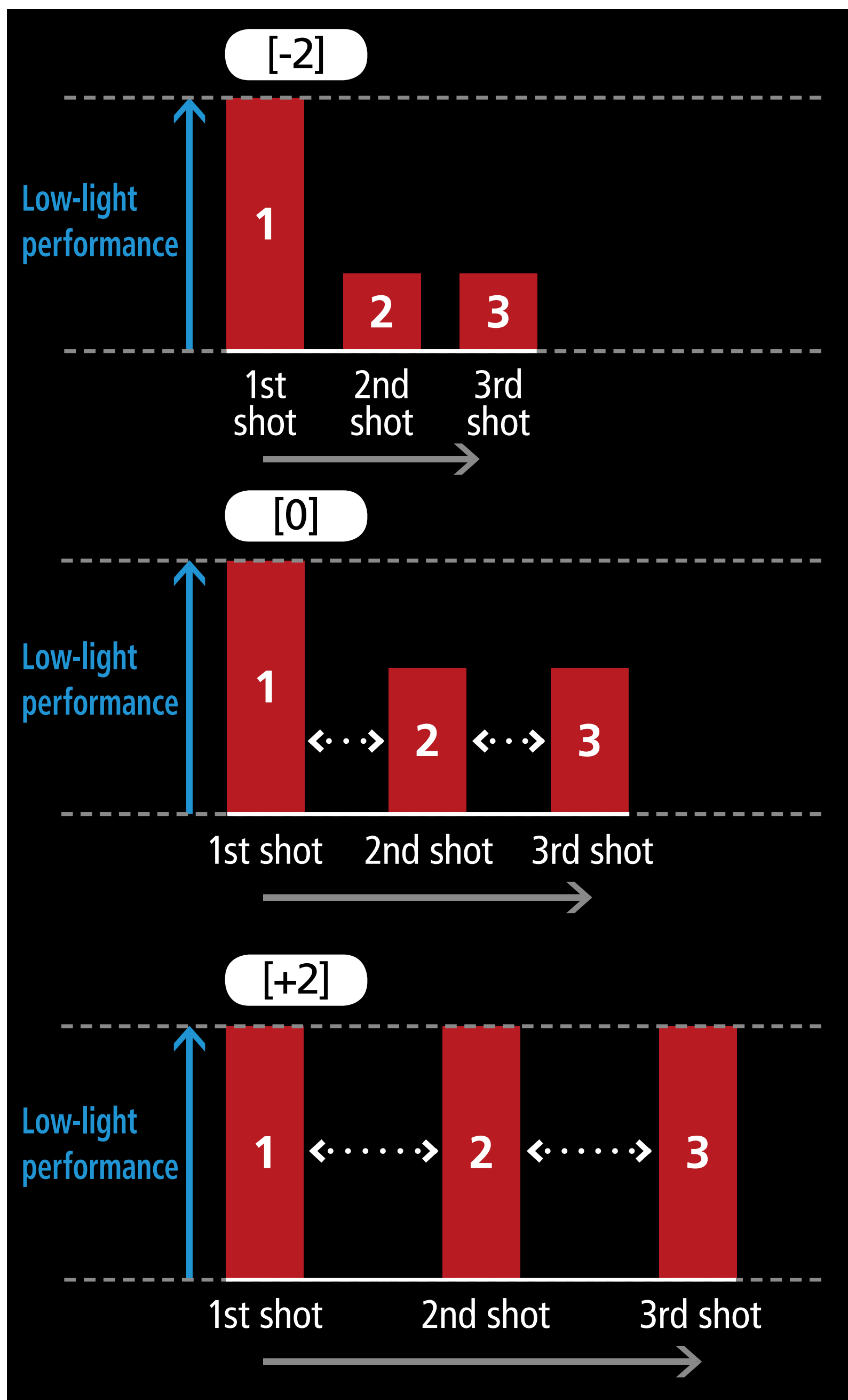


Low-light performance for the first frame of AI Servo AF and while holding down the shutter button halfway is improved through a modified algorithm. At default settings, low-light performance is the same as the previous firmware for the second frame and later.

Expanded parameters for [AI Servo 2nd image priority]

The new parameter [+2] lets you maximize low-light performance

Visualization of low-light performance and continuous shooting speed



[Shooting speed priority: -2] and [Focus priority: +2] have been added to [AI Servo 2nd image priority] in [Servo AF shutter characteristics]. [Focus priority: +2] maximizes improved low-light performance settings for more accurate focusing ([AI Servo 2nd image priority] is explained on P. 89.).

Improvement of AF performance in low light with AI servo is possible through new parameter settings

One of the major changes to the new firmware V2.0 is improved low-light limit performance. Low-light performance for the first frame of continuous shooting AI Servo AF (and while holding down the shutter button halfway) are improved through a updated algorithm. This is especially effective when shooting individual shots using AI Servo AF. AF precision is improved for dark subjects in low-light situations. The new [+2] parameter added to [AI Servo 2nd image priority] is maximized during continuous shooting with a focus on low-light performance. Because focusing takes priority, continuous shooting speed drops.

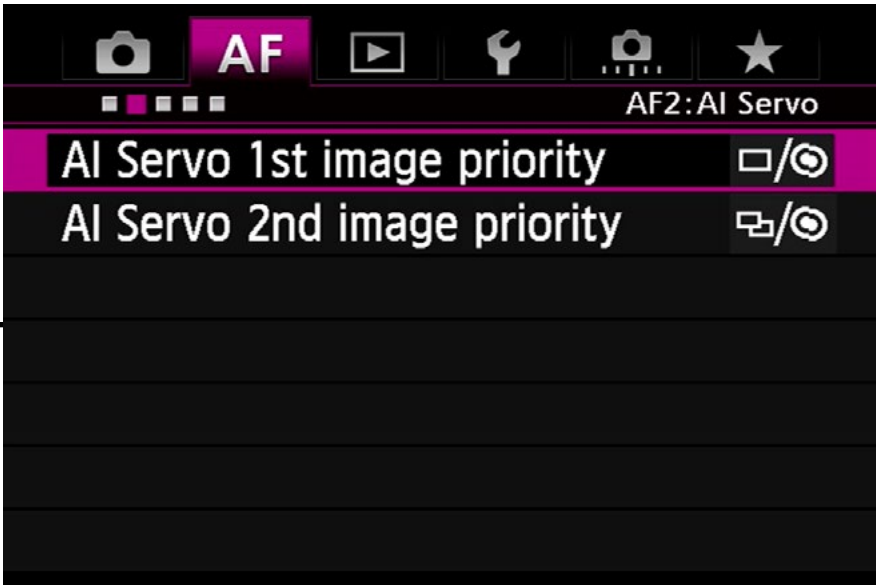


AF operation and shutter-release timing settings

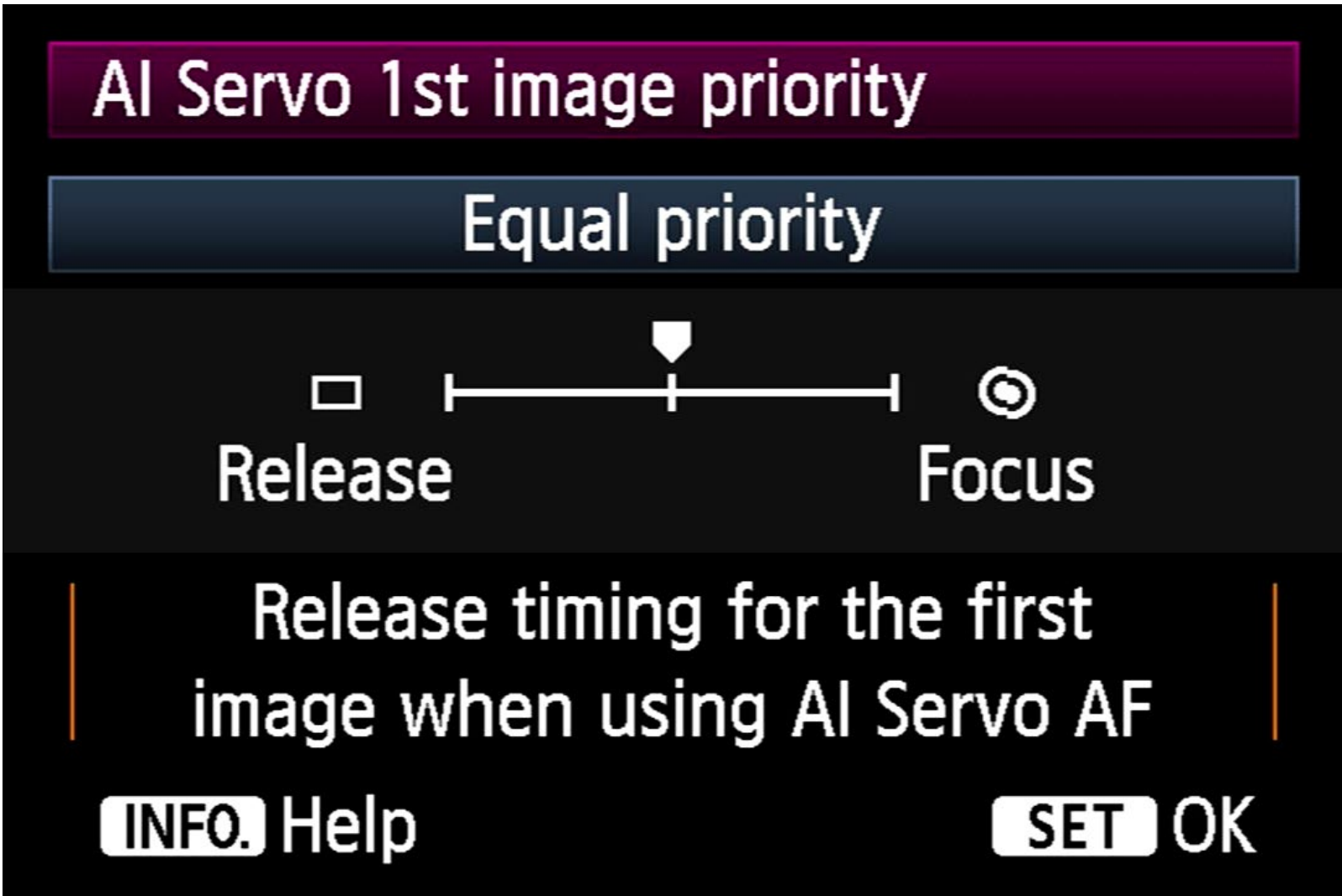
You can set whether focusing or shutter-release has priority

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Image/Focusing parameters during AI Servo [Set in the AF 2 tab]



1 1st image parameter [AI Servo 1st image priority]



Equal priority

This setting gives an equal priority to both focus and shutter-release

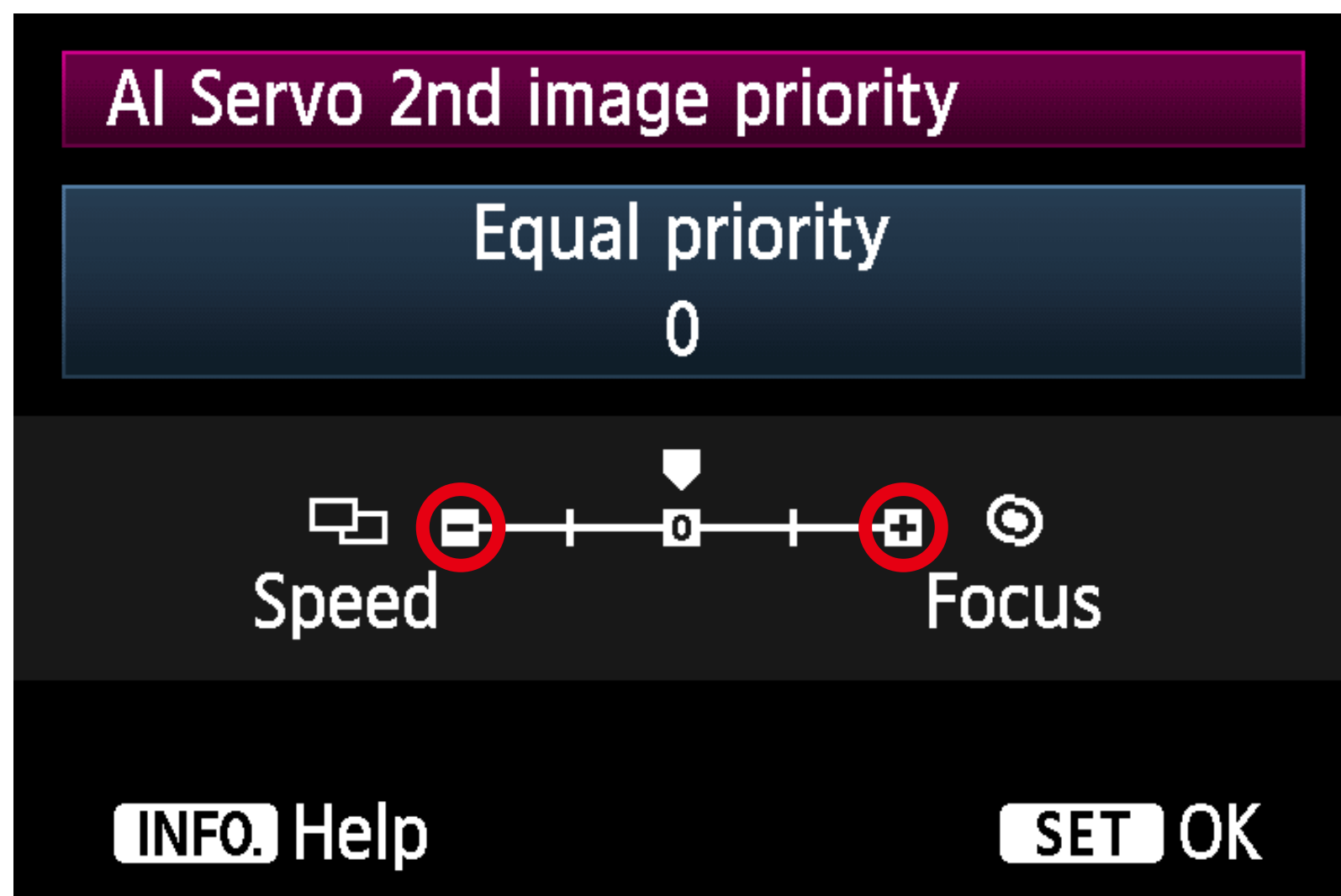
Release priority

This setting gives priority to shutter-release and will capture an image even if it is out of focus. It is effective when you want to minimize any delay when shooting, sacrificing AF performance

Focus priority

This setting gives priority to focusing on a subject and it cannot capture an image unless it is in focus. It is recommended when you want to ensure your images are in focus sacrificing response speed.

2 Parameters during continuous shooting [AI Servo 2nd image priority]



○ indicates a new parameter.

Equal priority

This setting gives an equal priority to both focus and shooting speed during continuous shooting. The speed of continuous shooting may also slow down when it is dark, or in low-contrast.

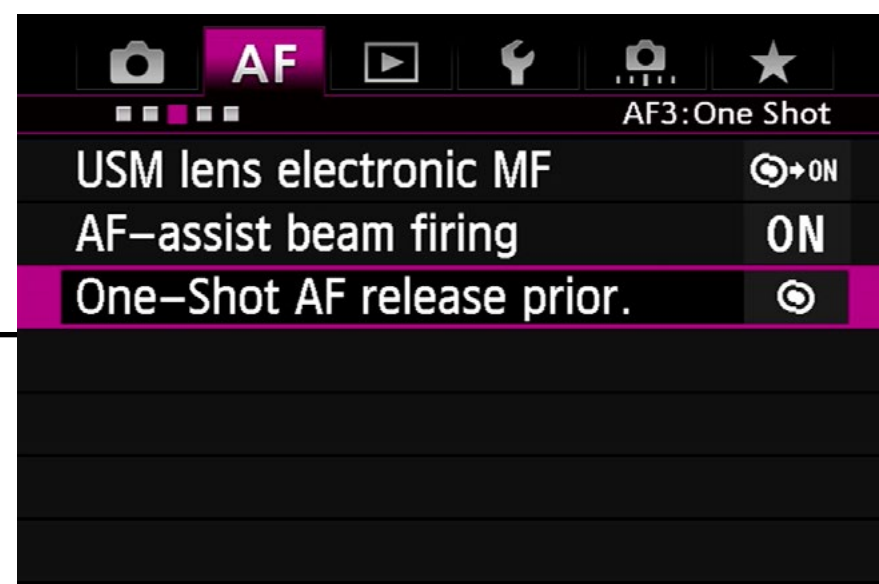
Shooting speed priority

This setting gives priority to a continuous shooting speed rather than priority on focus. Continuous shooting speed will not drop. Effective when you want to shoot with a fixed interval between photos. A setting of [-2] will maintain continuous shooting speed.

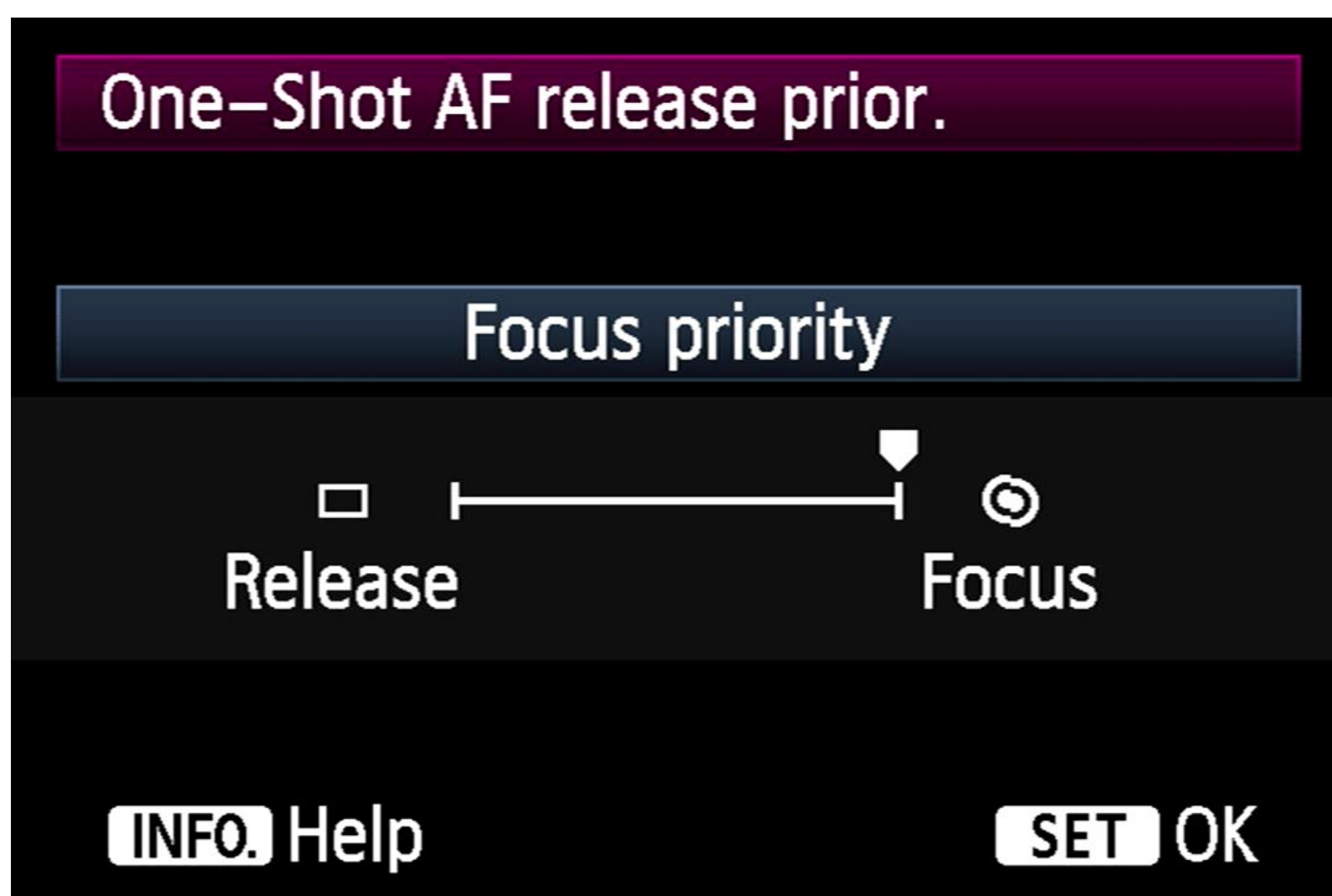
Focus priority

This setting gives priority to focusing rather than continuous shooting speed. It cannot shoot a picture unless it is in focus, greatly reducing continuous shooting speed. It is recommended when you want to shoot only after focusing on the subject. This parameter makes the most of AF low-light performance improved by the firmware upgrade.

Image/Focusing parameter for One-Shot AF [Set in the AF3 tab]



[One-Shot AF release priority]



Focus priority

You cannot shoot a picture unless it is in focus. It is effective when you want to shoot only after focusing on the subject.

Release priority

Priority is on the shooting timing rather than focus. It is recommended only when you want to put priority on capturing brief photo opportunities rather than focus.

The [AF2] and [AF3] tabs include settings related to AF operation parameters and shutter-release timing. With these items it is possible to set which has priority (or a balance) between focusing with AF, and the shutter-release.

The [AF2] tab contains the [AI Servo 1st image priority] and [AI Servo 2nd image priority] parameters for AI Servo AF. The priority on focus and shutter-release can be set for both the 1st image and subsequent images during continuous shooting. With [Focus priority], shooting is delayed until after the camera has focus on a subject (this could be just a few milliseconds). With [Release priority/Shooting speed priority] shooting takes place instantly without waiting to focus, resulting in possible out of focus images. The default [Balance priority] sets equal priority on both (attempting to focus without major delays to shutter release timings), ideal for most shooting situations. To make use of low-light performance improved by the firmware upgrade during continuous shooting, set the [During continuous shooting] parameter to [Focus priority: +2].

When using One Shot AF the shooting priority can also be altered via the [One-Shot AF release priority] option in the [AF3] tab. The priority of focusing and shutter-release can be altered in the same way as about during AI servo AF. However there is no [Balance priority], and instead [Focus priority] is the default setting.

Utilizing the AF point setting and registration Using ISO Auto

Utilizing the AF point setting and registration
**Automatically switching of AF points
for horizontal and vertical shooting**



Utilizing the AF point setting and registration
**[Separate AF points:Point only] is added
to [Orientation linked AF point]**



Utilizing the AF point setting and registration
**Instantly recalled AF points using
[Switch to registered AF point]**



**Instantly switching AF area
selection modes**



**Synchronize initial AF point used
for 61-point auto selection AF
with manually selected point**



**Assigning functions to
the AF-ON/ $\times$ button**



Using ISO Auto

**Exposure compensation is now
possible in M mode and ISO Auto**



Using ISO Auto

**Minimum shutter speed at ISO
Auto expanded to 1/8000 sec.**



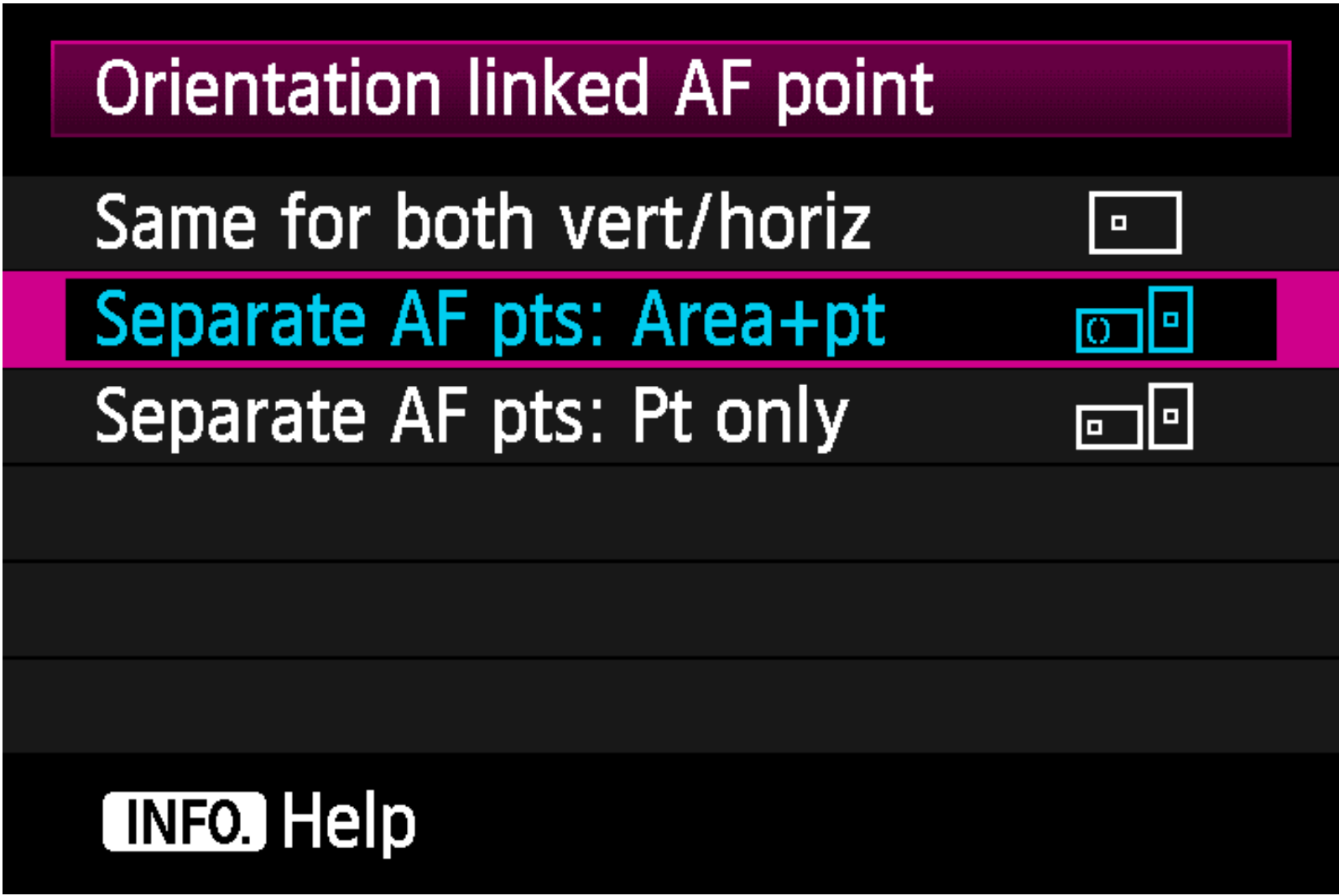
Utilizing the AF point setting and registration

Automatically switching of AF points for horizontal and vertical shooting

AF point settings for the horizontal position and the vertical position are especially useful. By selecting [Separate AF pts: Area+pt] from [Orientation linked AF point], individual settings for each of the AF area selection modes and the manually selected AF points can be stored in camera memory.

.....

Presetting the AF points, makes it easier to capture the desired composition for horizontal and vertical shooting



Set up steps

Use [Orientation linked AF point] in the [AF4] tab to set the AF points for each orientation

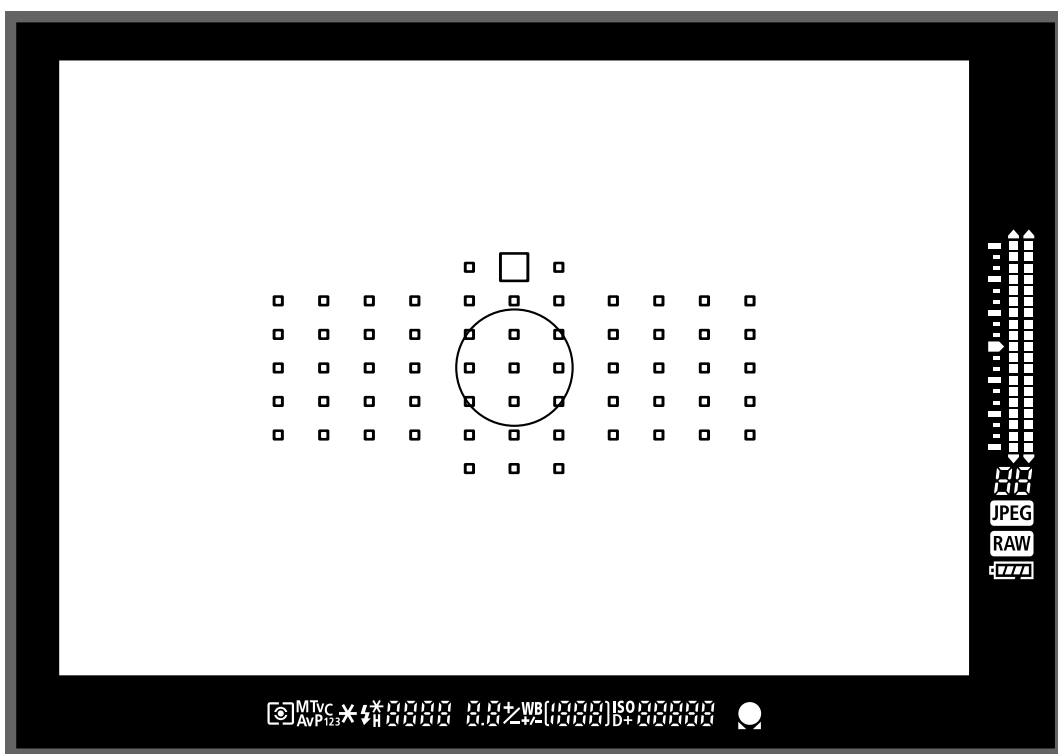
- 1 Select the [Separate AF points] options from [Orientation linked AF point]

Set up steps

2 Change the camera position and select the desired AF point or AF mode

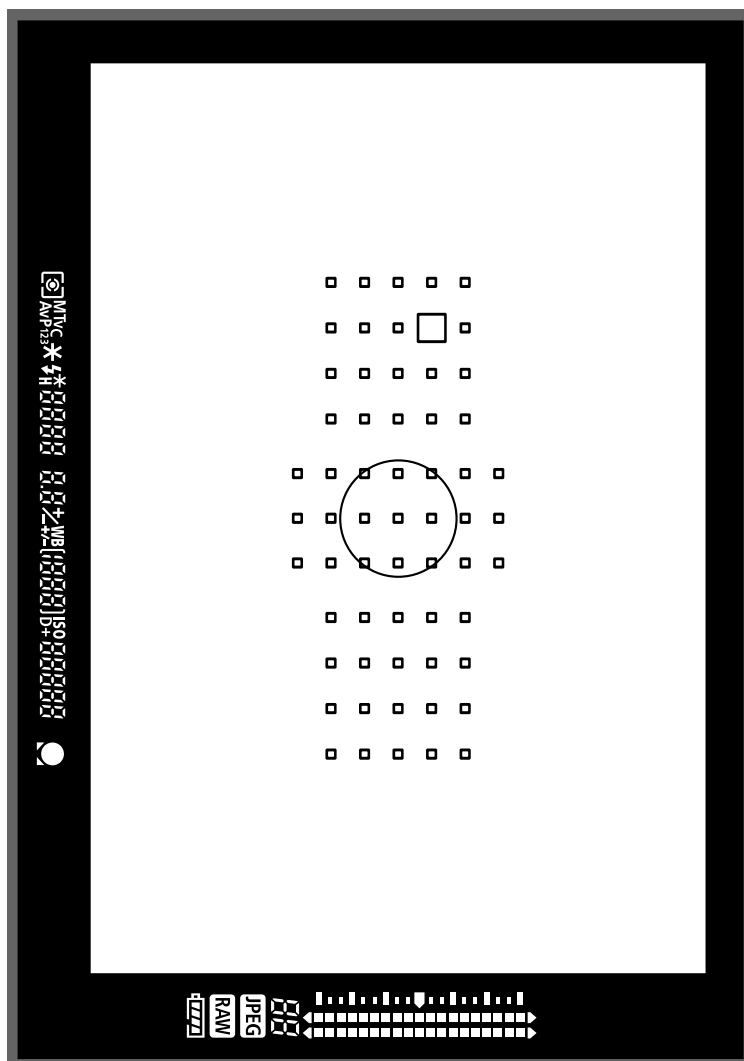
A

Horizontal position



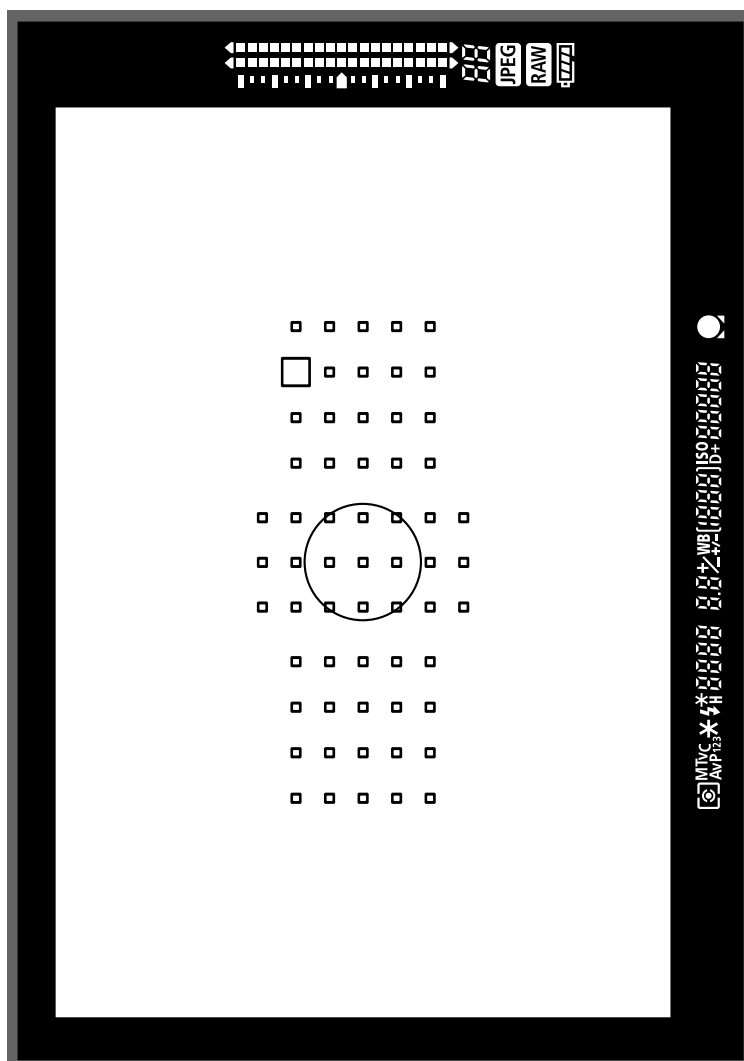
B

Vertical position with grip at the top



C

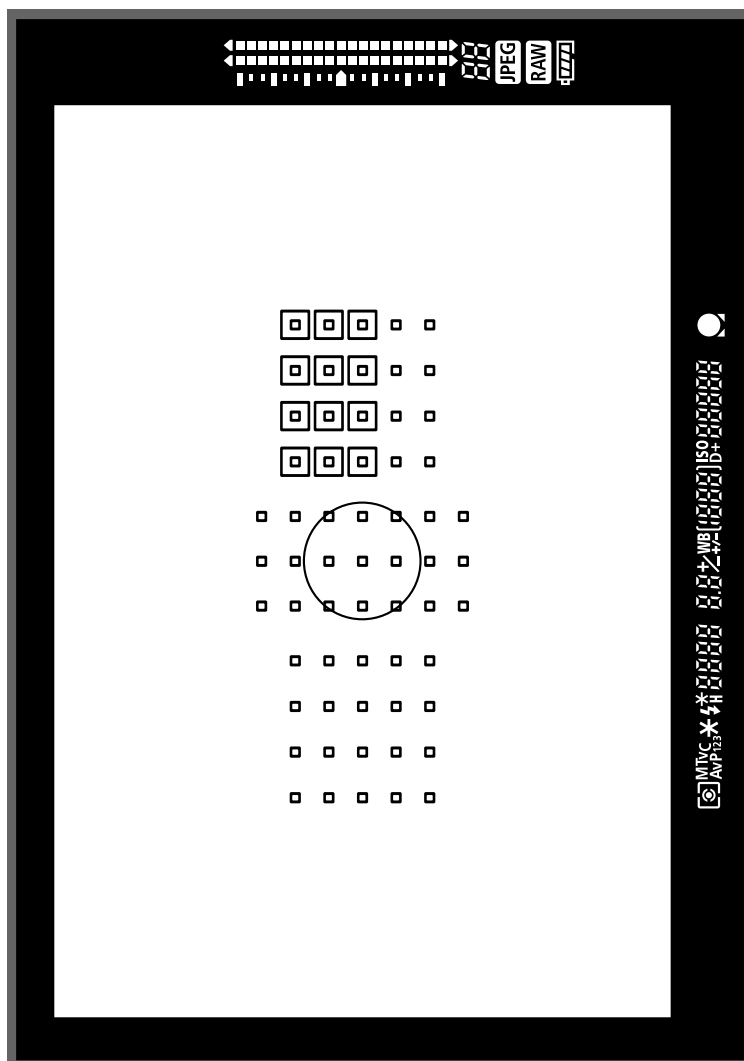
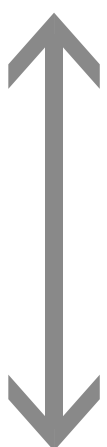
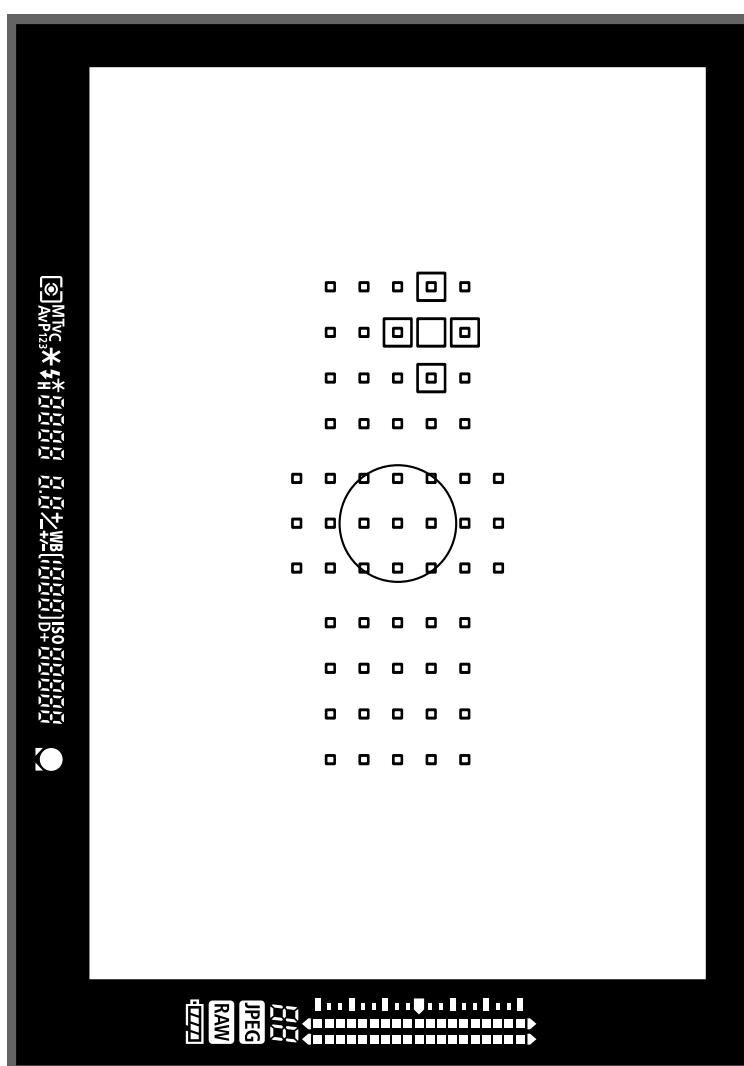
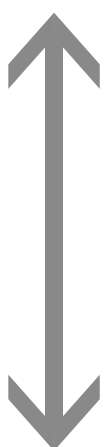
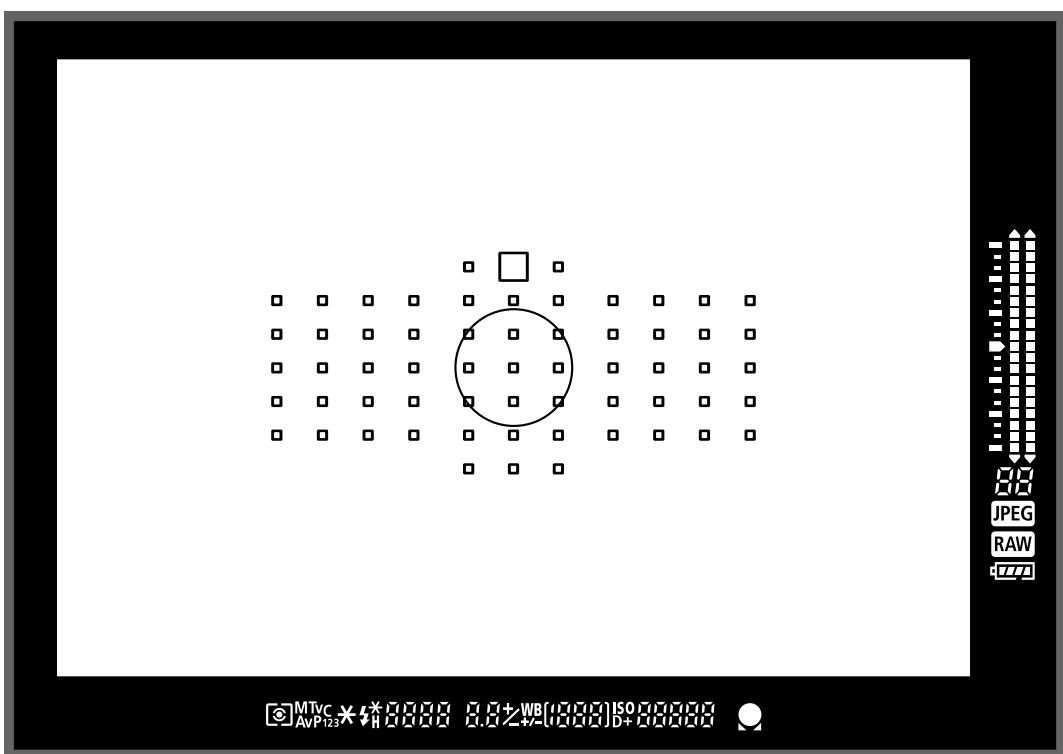
Vertical position with grip at the bottom



Select the AF frame for each

Set up steps

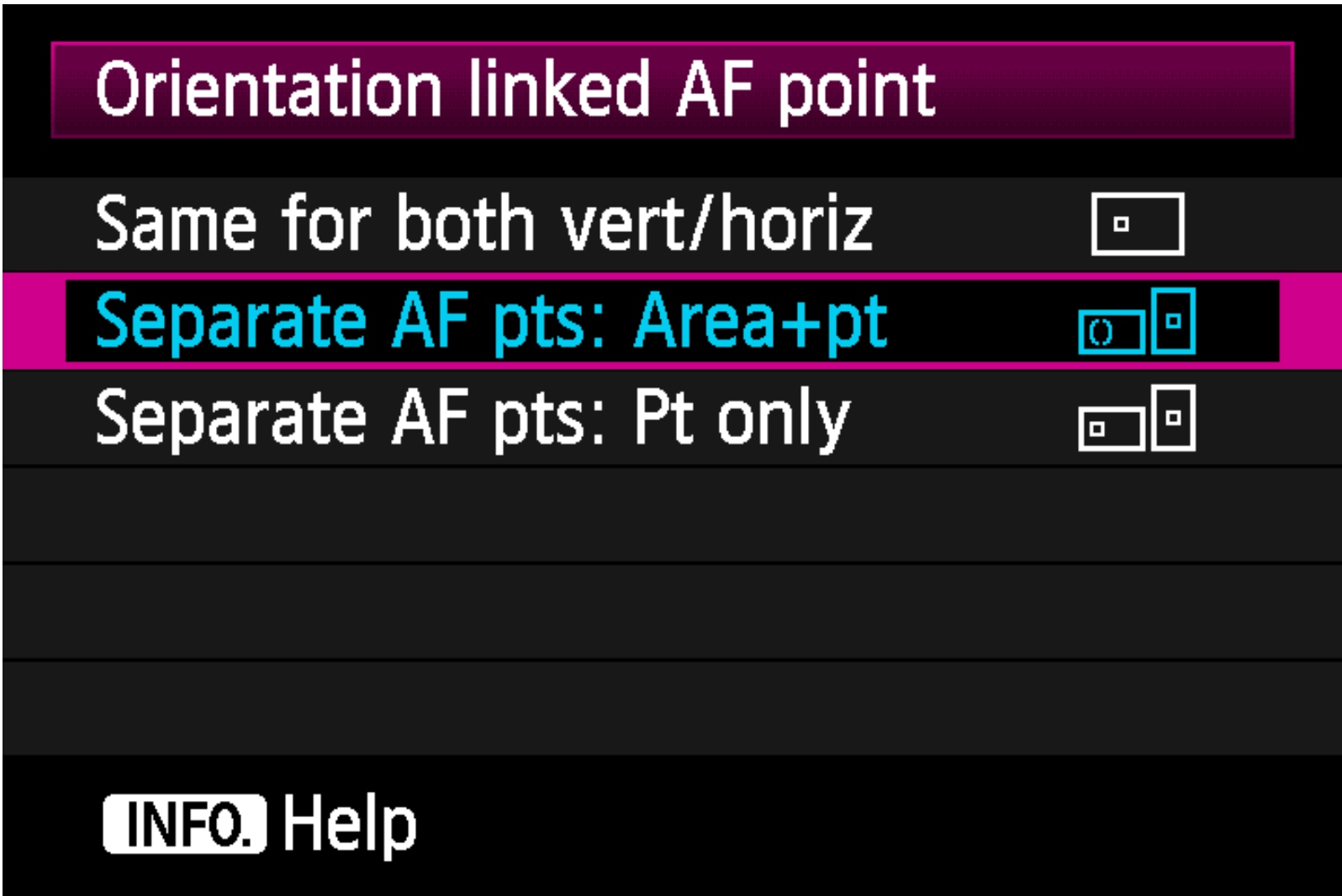
3 By changing the camera's orientation, the set AF points and modes will switch automatically



Select the [AF area selection mode] in each position

Set up steps

First, select [Separate AF pts: Area+pt] from [Orientation linked AF point]. Next, select the AF area selection mode and the manually selected AF point for each of the positions (orientation) of A) Horizontal position, B) Vertical position with grip at the top, and if required C) Vertical position with grip at the bottom. The settings will automatically be remembered. Now, for each of these orientations the camera will automatically switch to the select mode and AF points.



During sporting events or concerts, it is common to change the camera between horizontal and vertical positions. The EOS-1D X is equipped with an abundance of AF frames to choose from - 61 points to be exact. This provides a high degree of freedom when composing shots, however, one downfall is that when the uppermost left AF point is selected for shooting while the camera is held in the horizontal position is that when the grip is switched to the vertical position, the AF point ends up in the bottommost lower left of the screen. If you want to keep the entire body of the athlete in the frame while focusing on their face, you must choose another AF point.

In situations like this, AF point settings for each position are especially useful. By selecting [Separate AF pts: Area+pt] from [Orientation linked AF point], individual settings for each of the AF area selection modes and the manually selected AF points can be stored in camera memory. In the previous case, for example, if you set the center upper edge AF point beforehand when in the vertical position with the grip at the top, it is possible to have the AF point line up with the position of the face instantly when switching from the horizontal to vertical position.

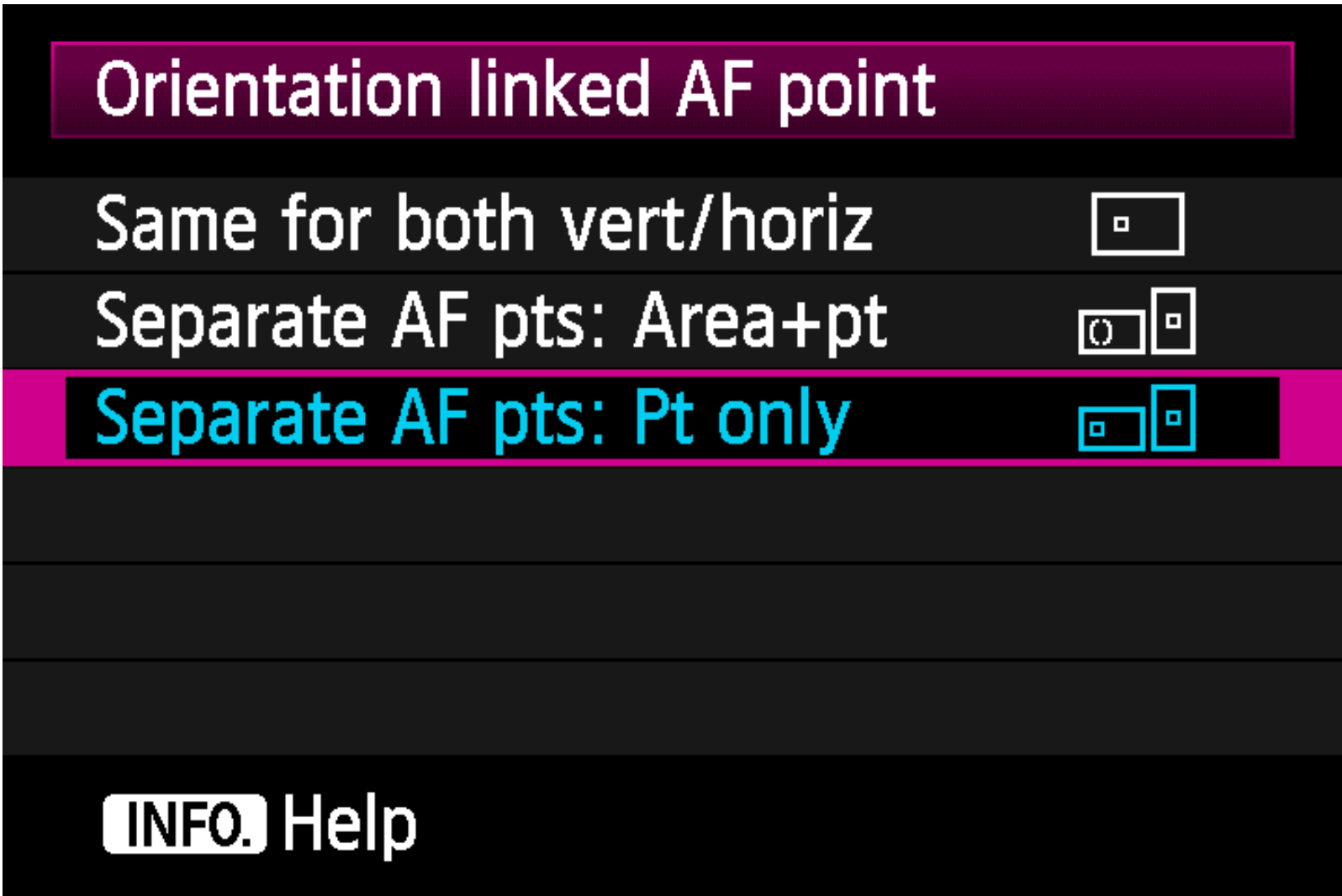


Utilizing the AF point setting and registration [Separate AF points:Point only] is added to [Orientation linked AF point]

It is now possible to have different AF points but use the same [Af area selection mode], for simple AF operation. This is convenient simply switching AF frames

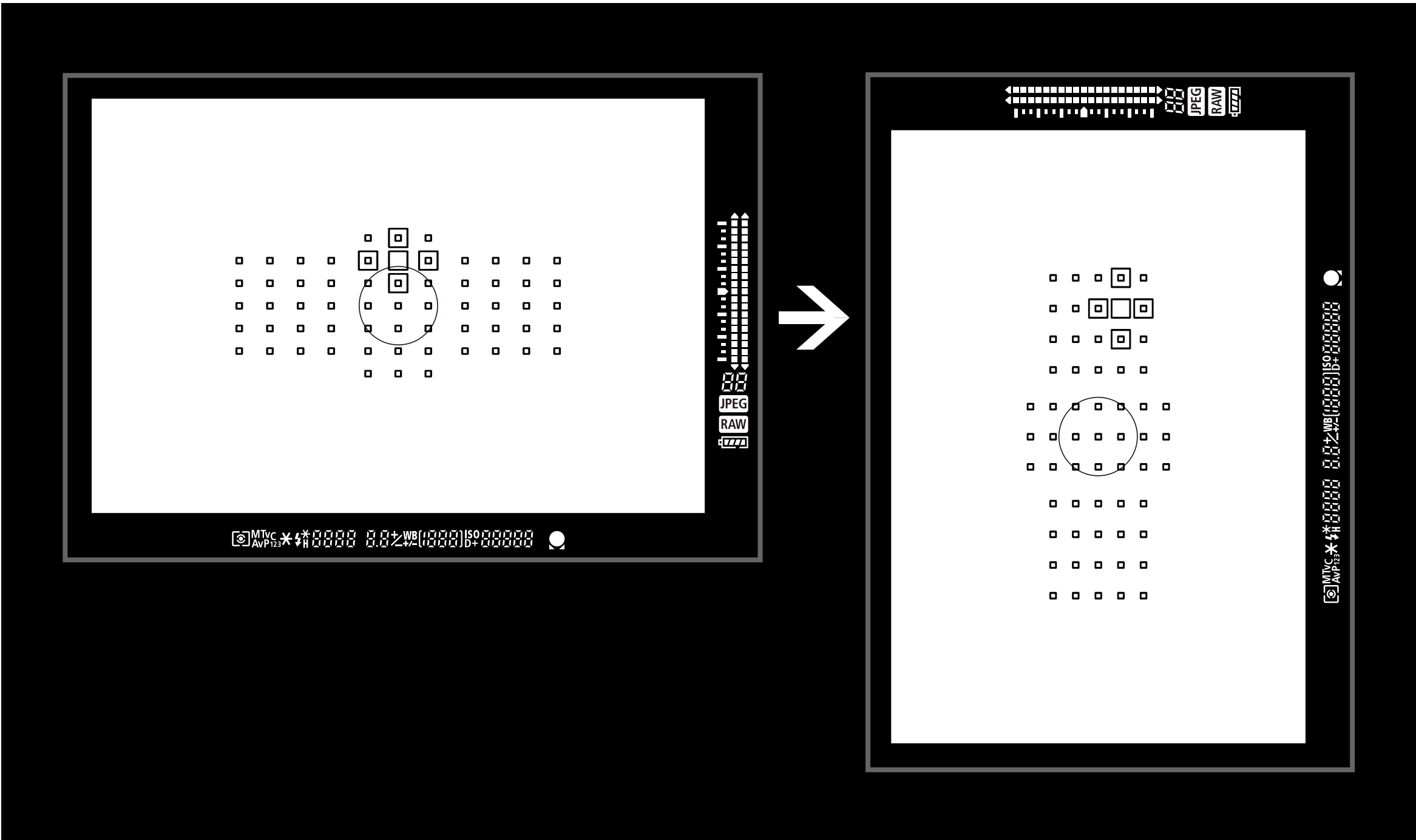
.....

This lets you set different AF points but use the same AF area selection mode

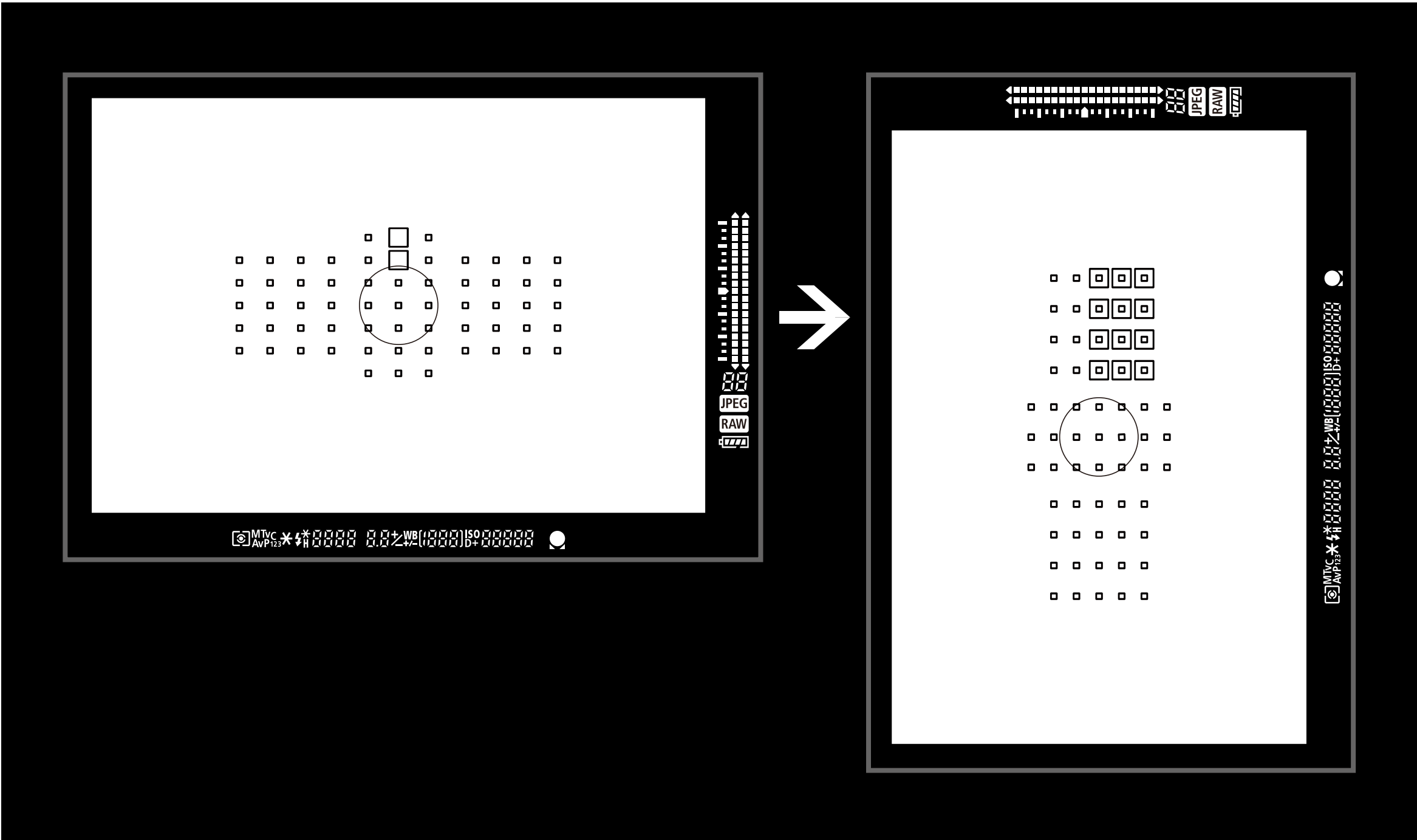


[Separate AF points:Point only] is newly-added to [Orientation linked AF point]. This lets you set different AF points but use the same AF area selection mode for vertical and Horizontal positions. Because settings are simple, this is an excellent feature for shooting in the vertical and horizontal positions set in the [AF area selection mode].

[Separate AF points:Point only]



[Separate AF points: Area+Point]



Switch even the [AF area selection mode] in [Select separate AF points: Area + points]

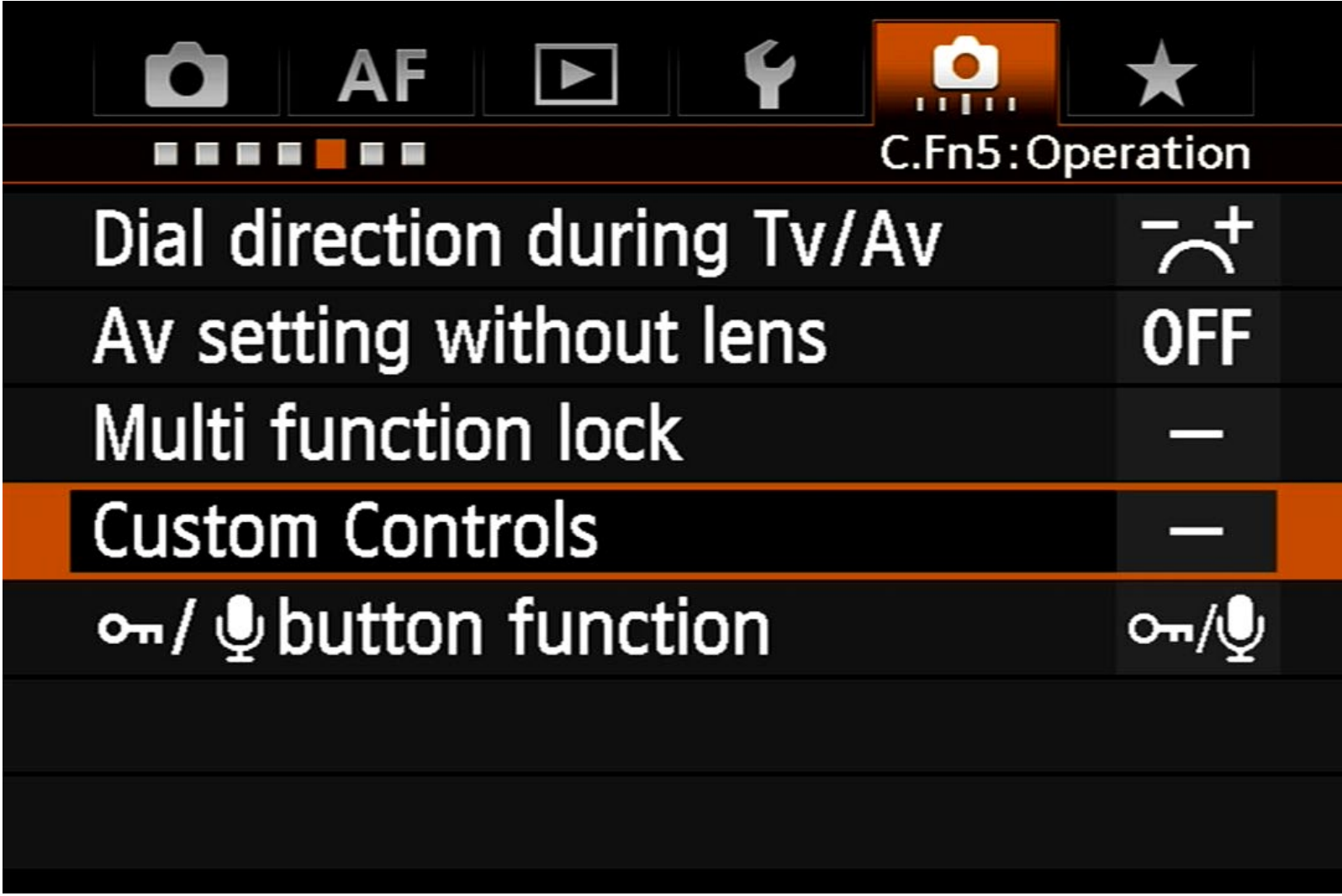
Utilizing the AF point setting and registration

Instantly recalled AF points using [Switch to registered AF point]

You can press a buttons and instantly switch between registered AF points.

.....

Store your preferred AF point for instant access at the touch of a button



Use [Custom Controls] from [C.Fn5: operation]

Using the [Custom Controls] option from the custom function [C.Fn5: operation] menu allows an AF point to be registered and recalled instantly.

This function can also be used to assign various functions to the different camera controls.

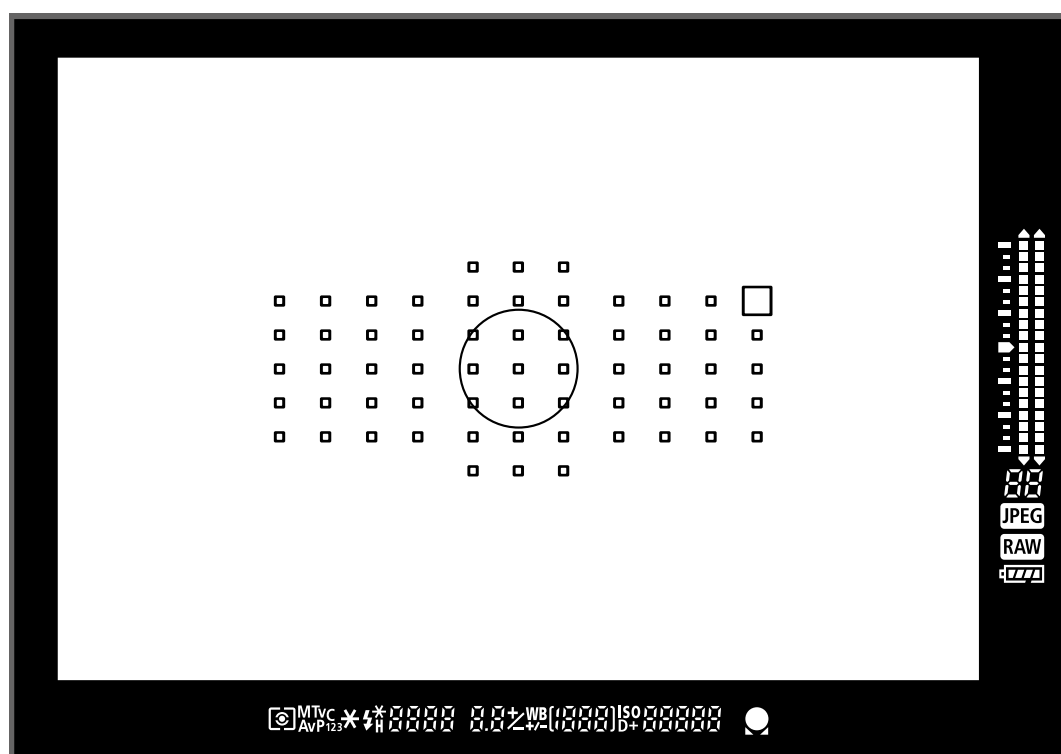
Set up steps

1 There are two options to customize the controls to register and AF point

- A** Assign [Metering - AF start] to the AF-ON button, or the * button then press info and select [Registered AF point]
- B** Assign [Switch to registered AF point] to the  button, LENS, or M-Fn2 button. Press info to select if the option is applied only when the button is held or not

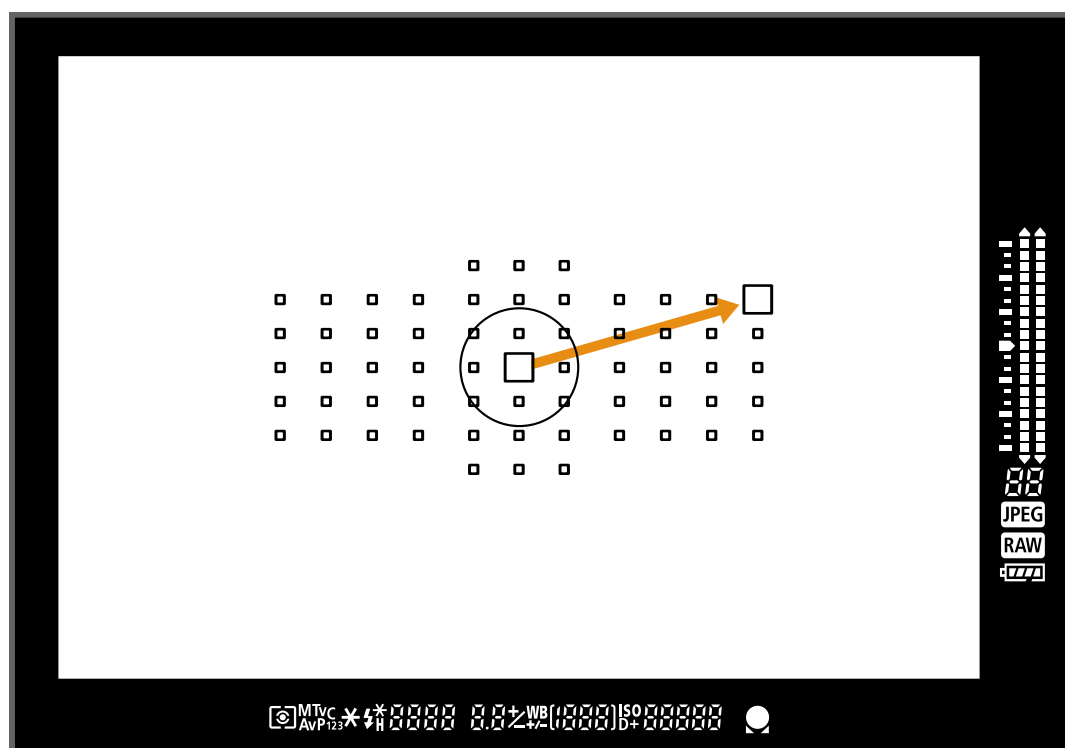
2 Manually select AF points you will want to recall.

(This is possible with all AF area selection modes except Zone AF)

**3** Press the button while pressing the ISO button until you hear a beep.

When the **AF-ON** button, or the * button are assigned the function [Metering - AF start], instant switching of registered AF points becomes possible. Press the **INFO.** button in the [Customize Controls] assignment screen, and then select [Registered AF point]. Now when the button is held the AF will use the registered AF pointed.

- 4 After selecting another AF point or AF area mode, press the assigned button (selected in stage 1) to switch to the registered AF point.



AF point registration and usage is described above. Also, for more advanced usage this setting can be combined with [Orientation linked AF point] setting (described on pages 94-100). Selecting the option [Select separate AF points], from the [Orientation linked AF point] option makes it is possible to register and recall AF points separately for all three positions, vertical (grip top/bottom), and horizontal as well as the remembered AF point for orientation.

How to cancel registered [Switch to registered AF point]

Press  and .

Another function that is effective for quickly switching AF points while shooting is AF point registration and recall feature possible using [Custom Controls]. There are several methods to achieve this; one is to assign registered AF points to a button via [Custom Controls] function. The second method is AF point or [AF area selection mode] registration. By carrying out either of the two options, you can press a buttons and instantly switch between registered AF points.

By registering frequently used AF points, or a strategically placed AF point, enables instant response without the need to reframe or alter the cameras position. Further refinement in operation is possible, with the <Depth-of-field preview>, and the <Lens AF stop> buttons when set to ([Switch to registered AF point] setting). These buttons provide the possibility to [Switch only while pressed] or [Maintain switching until pressed again] settings, making detailed customization possible. Using these settings enables the camera suit the way you shoot.



Shooting the side to side movement of tennis strokes. After photographing the player positioned to the right side with a manually selected AF point at the upper right, it was switched to the AF point registered at the upper left with a single push of a button, then the player was photographed returning a backhand shot positioned to the right side.

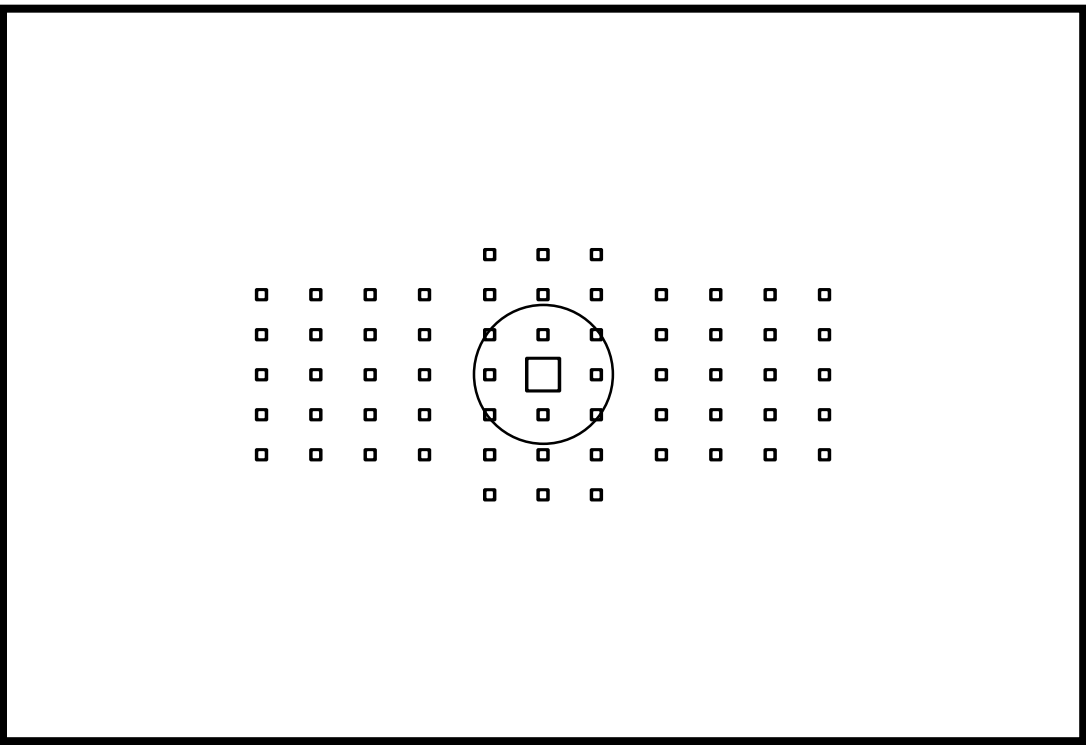
Instantly switching AF area selection modes

By assigning an [AF area selection mode] to a specific button in the [Custom Control] screen, you can continue shooting and switch AF areas instantly with the press of single button without having to move your eye from the viewfinder.

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Instantly switching AF area selection modes with a single button

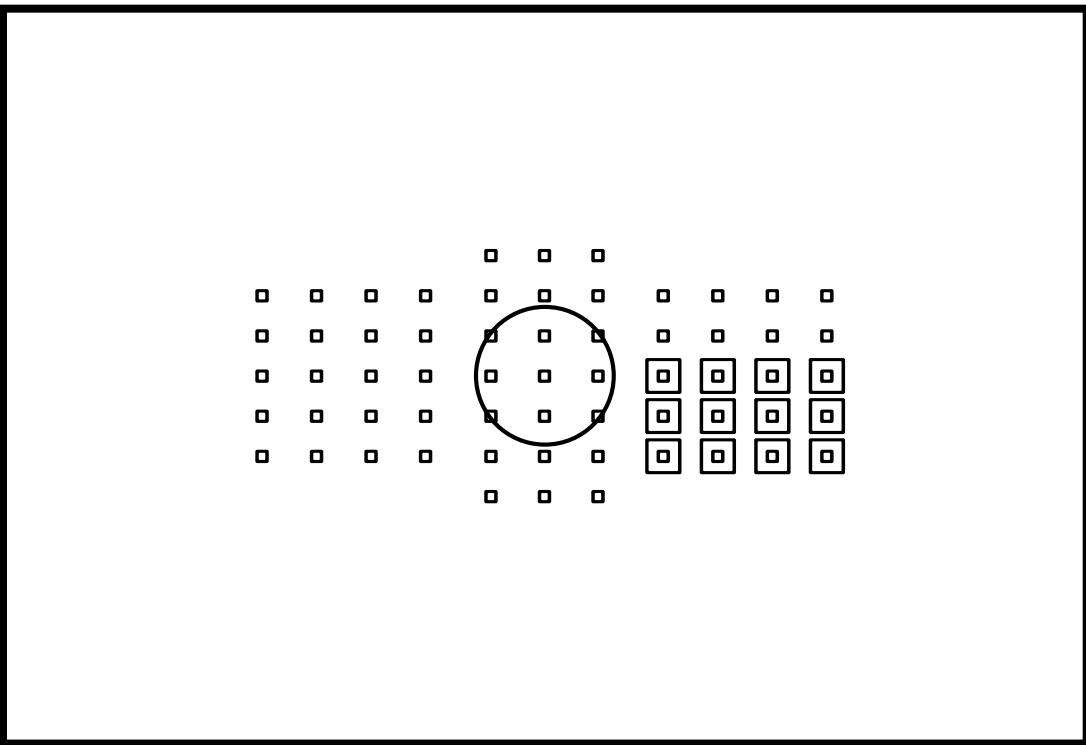
Assigning functions



On shooting with optional 'AF area selection mode'

↓
AF-ON
↓

By pressing the assigned button



Switchable into set 'AF area selection mode'

Buttons that can be assigned to switching AF area selection modes

There are the five buttons that can be assign to switch AF functions. The **AF-ON** button and **✖** button can be assigned with [Custom Controls] to [Register/apply shooting functions], and the **LENS** button and  button can be assigned with [Switch to registered AF functions].

'Register/apply shooting functions' assigns.

AF-ON AF-ON button

✖ AE lock button

'Switch to registered AF functions' assigns.

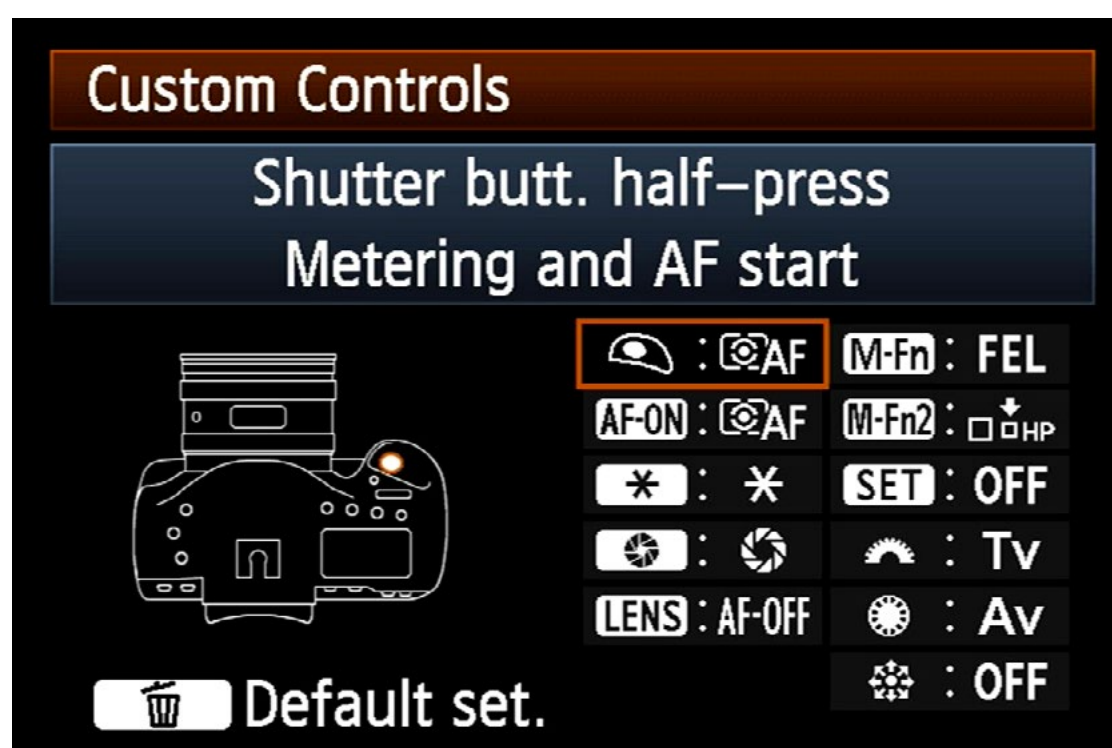
LENS lens AF stop button

M-Fn2 Multi function2button

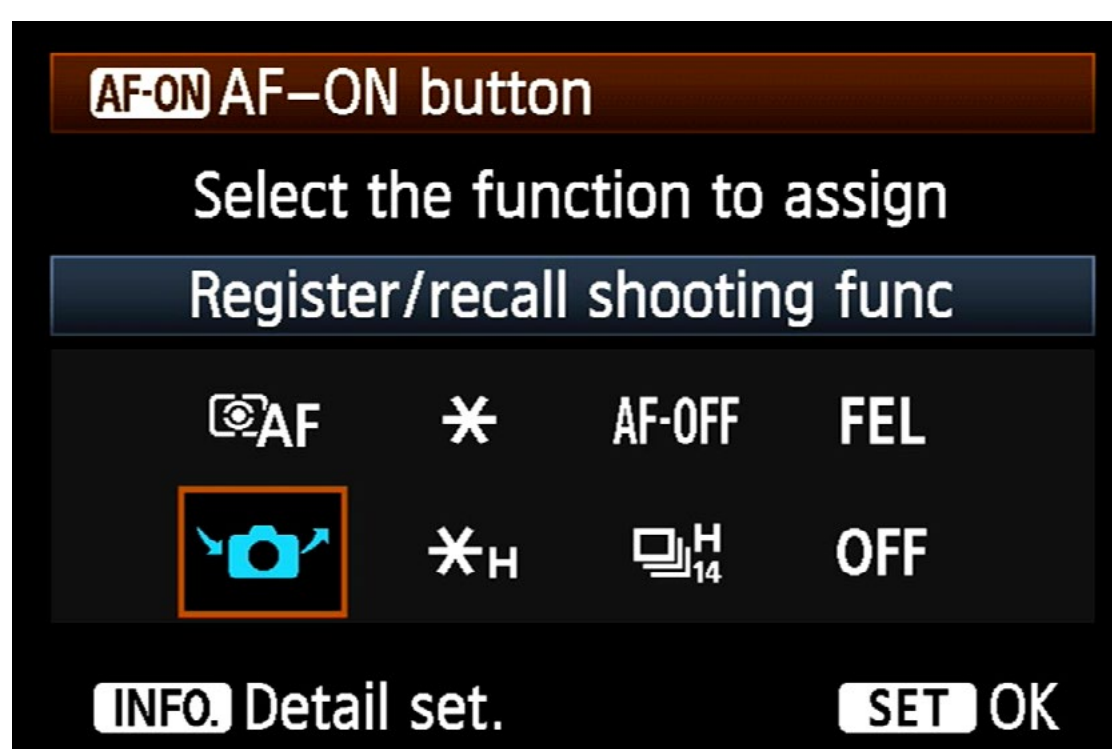
 depth-of-field preview button

Set up steps

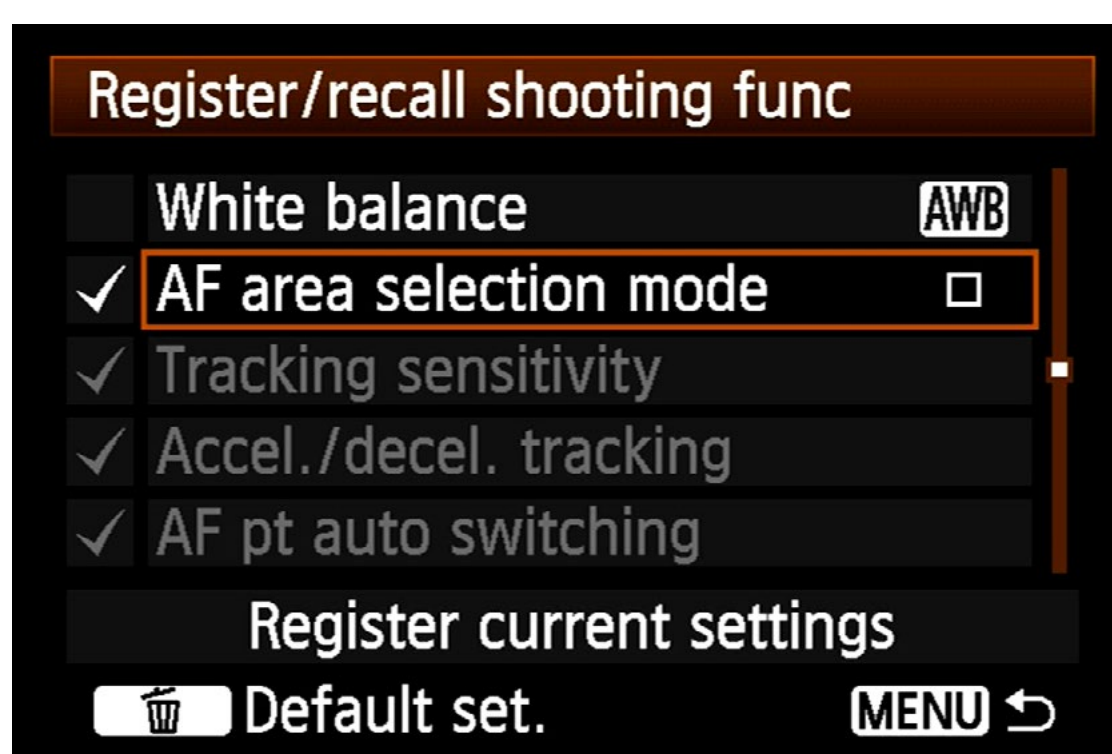
[Register/apply shooting functions]



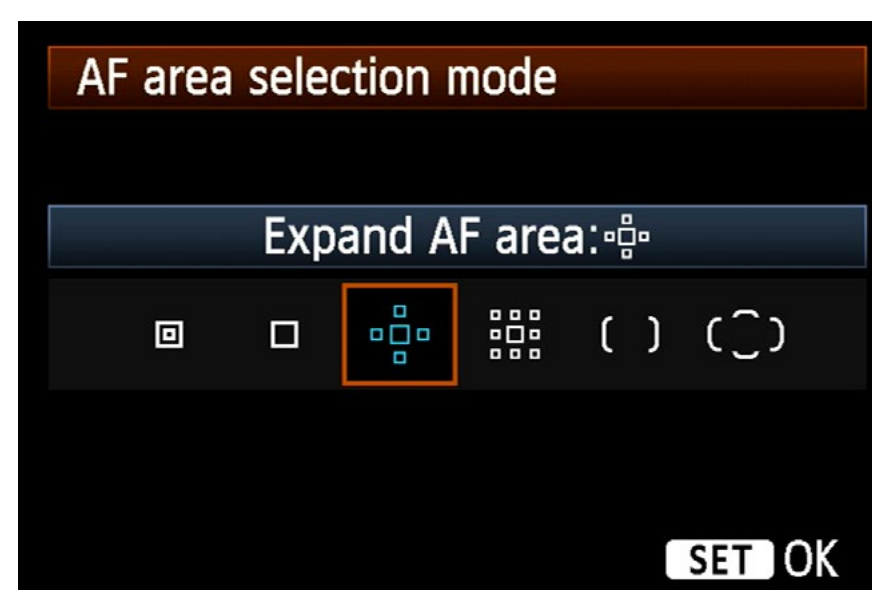
Assign to the AF-ON button, or the * button to [Register/apply shooting functions]



Press the INFO. button



Select the [AF area selection mode]



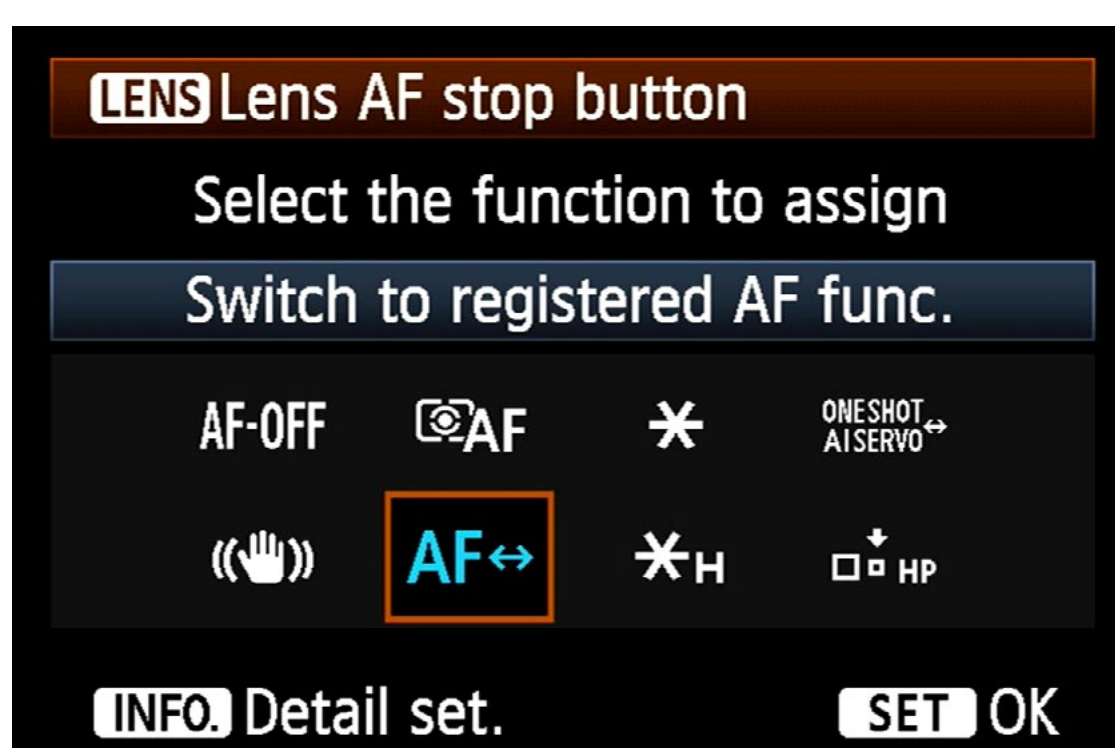
Assign [Register/apply shooting functions] to the AF-ON button or the * button with the custom function's [Custom Controls]. Press the INFO. button on the assign function's selection screen, (various functions can be set) and select the [AF area selection mode] that you want to use.

Set up steps

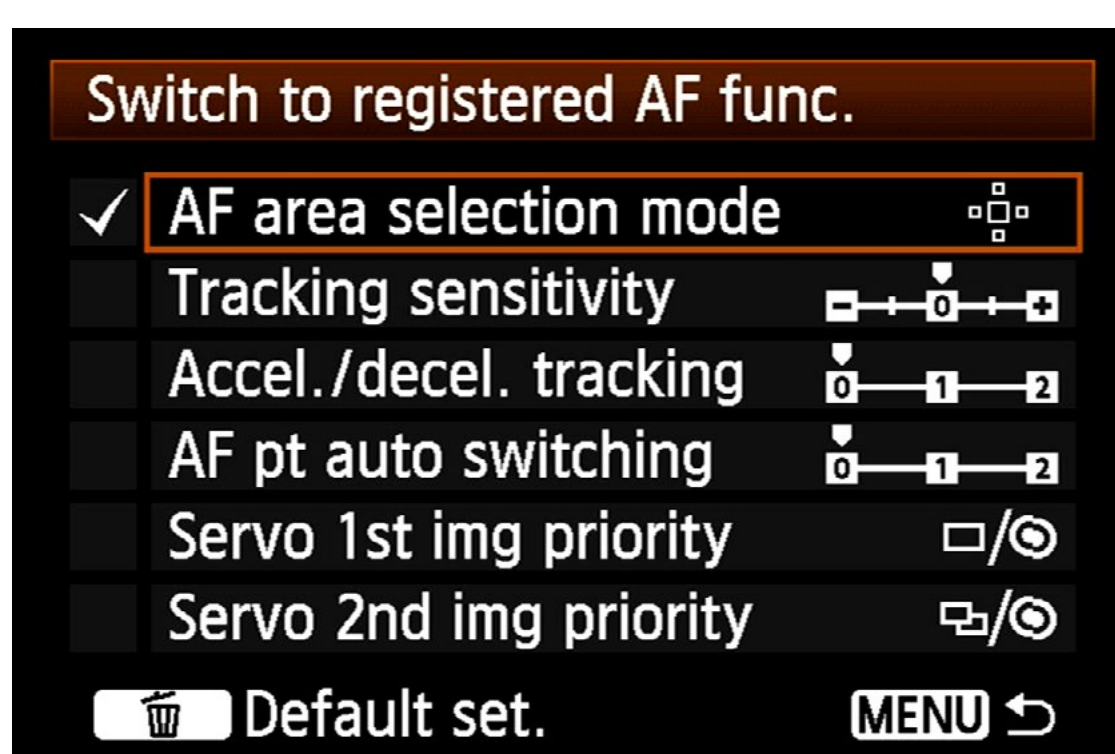
[Switch to registered AF functions]



Assign to the LENS or depth of field preview button



Press the INFO. button now



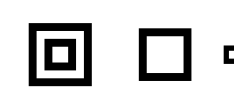
Select the [AF area selection mode]

Assign [Switch to registered AF functions] to the **LENS** button or  button with [Custom Controls]. Press the INFO. button on the assign function's selection screen, and from various AF functions, select the [AF area selection mode], and select the mode that you want to use.

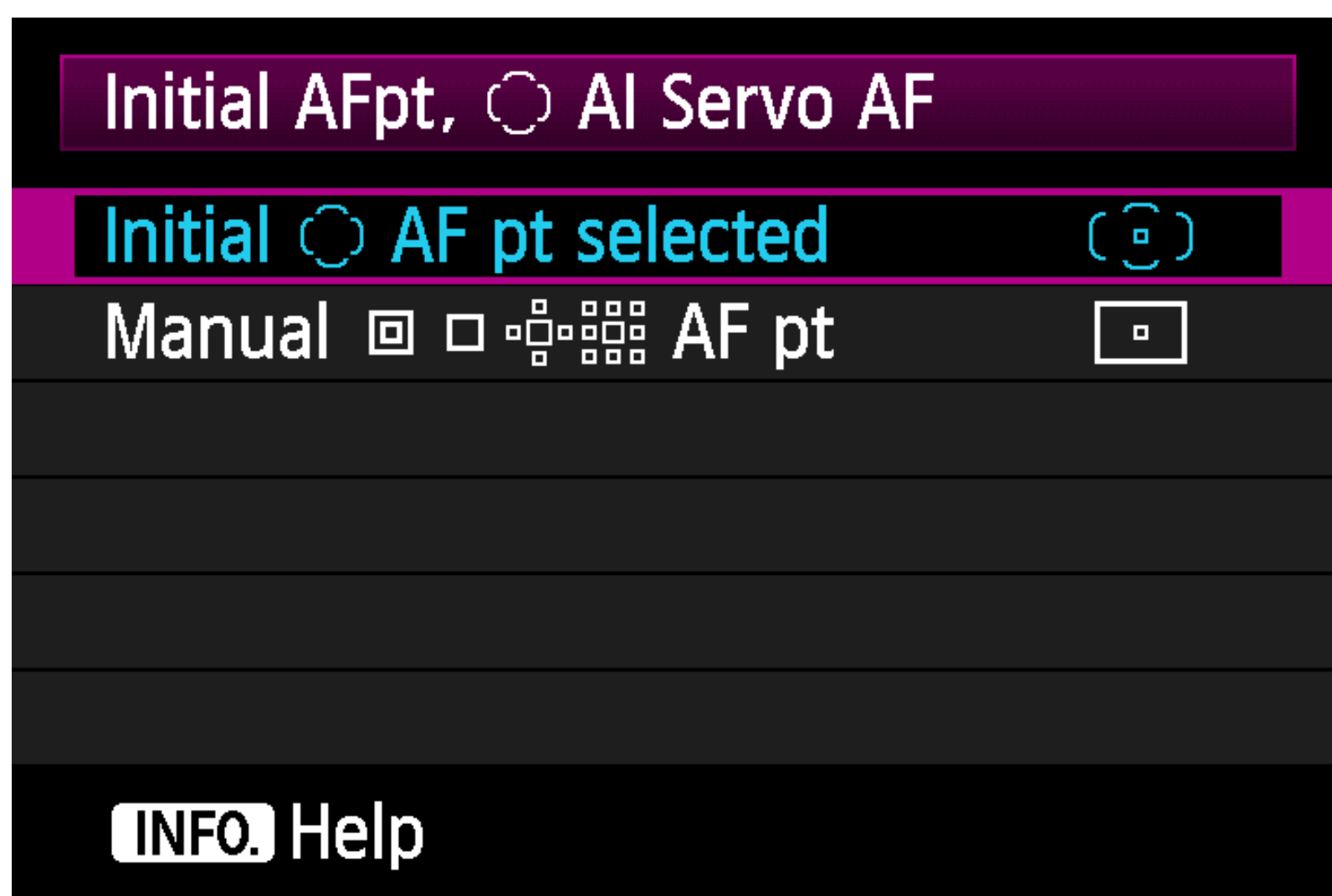
AF area selection modes such as [Single-point AF] and [AF point expansion] are effective for switching according to the size and type of subjects. While looking through the viewfinder it can be difficult to change the mode while tracking the subject. However, by assigning the AF area selection modes you want to use, to specific buttons, you can switch instantly while continuing shooting. There are five buttons that can be assigned. Think about the characteristics of the sports and subjects you want to shoot beforehand, and assign the AF area selection modes you think you will use. By assigning different modes to each of the five buttons therefore 5 modes, you can control up to five modes at will. In addition, aside from the AF area selection modes, various functions can be registered and applied, so by making settings as needed, you have the flexibility to handle conditions as they change.



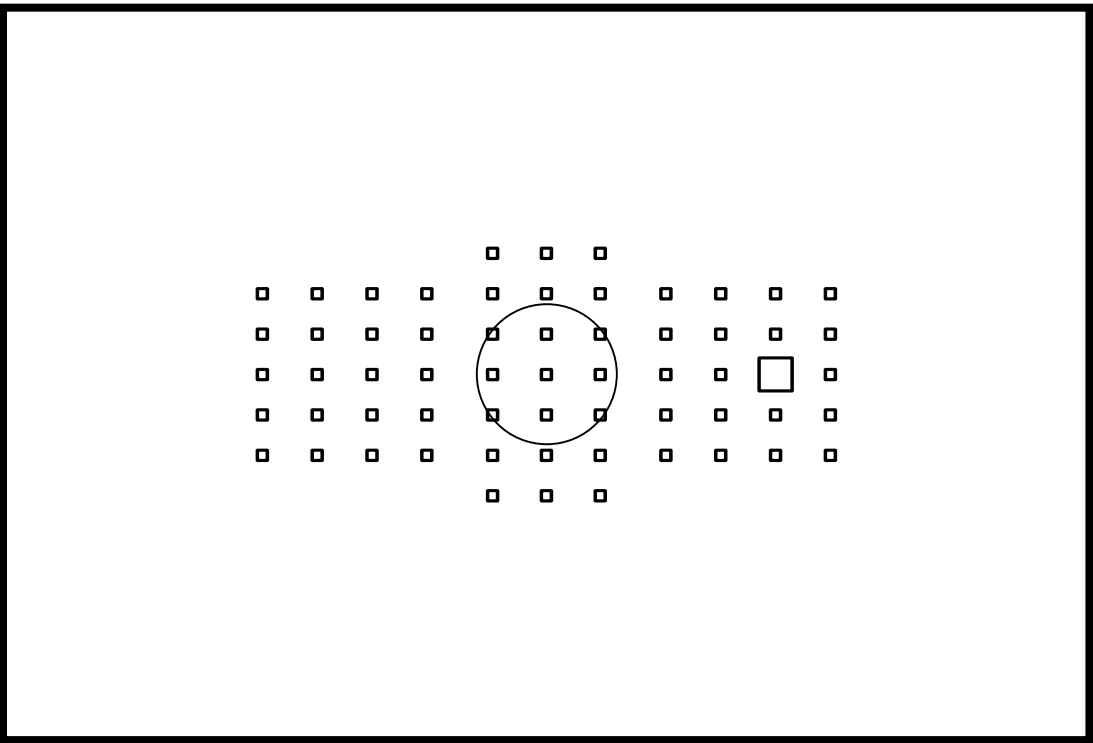
Synchronize initial AF point used for 61-point auto selection AF with manually selected point

When switching to [Auto selection: 61 point AF] from another [AF area selection mode], this setting activates auto selection AF starting with the AF point selected before switching in [Initial AFpt. () AI Servo AF] Manually set points . This is extremely effective for a series of scenes when switching to other modes to [Auto selection: 61 point AF] for shooting.

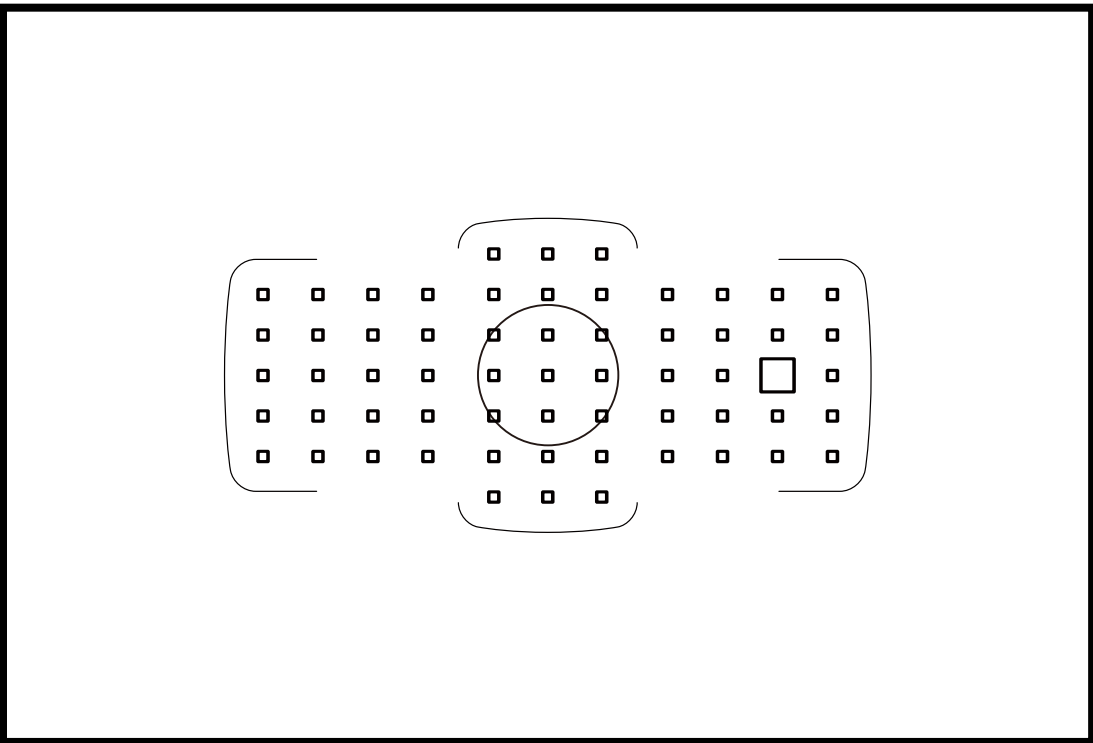
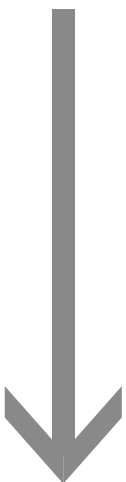
Use the AF point from another mode to move to auto selection



**[AI Servo AF initiation point in ()]
has been added to [AF4] to
[Manually set points in □ □ ▣ ▤ ▥ ▦]**



[Manual selection:
1 point AF]



[Auto selection:
61 point AF]

For example, this is effective when switch from [Manual selection: 1 point AF] to [Auto selection: 61 point AF] when continuously shooting an athlete to track and shoot.



Assigning functions to the AF-ON/✱ button

In firmware V2.0, new settings can be assigned using customization function C.Fn5 [Button Customization].

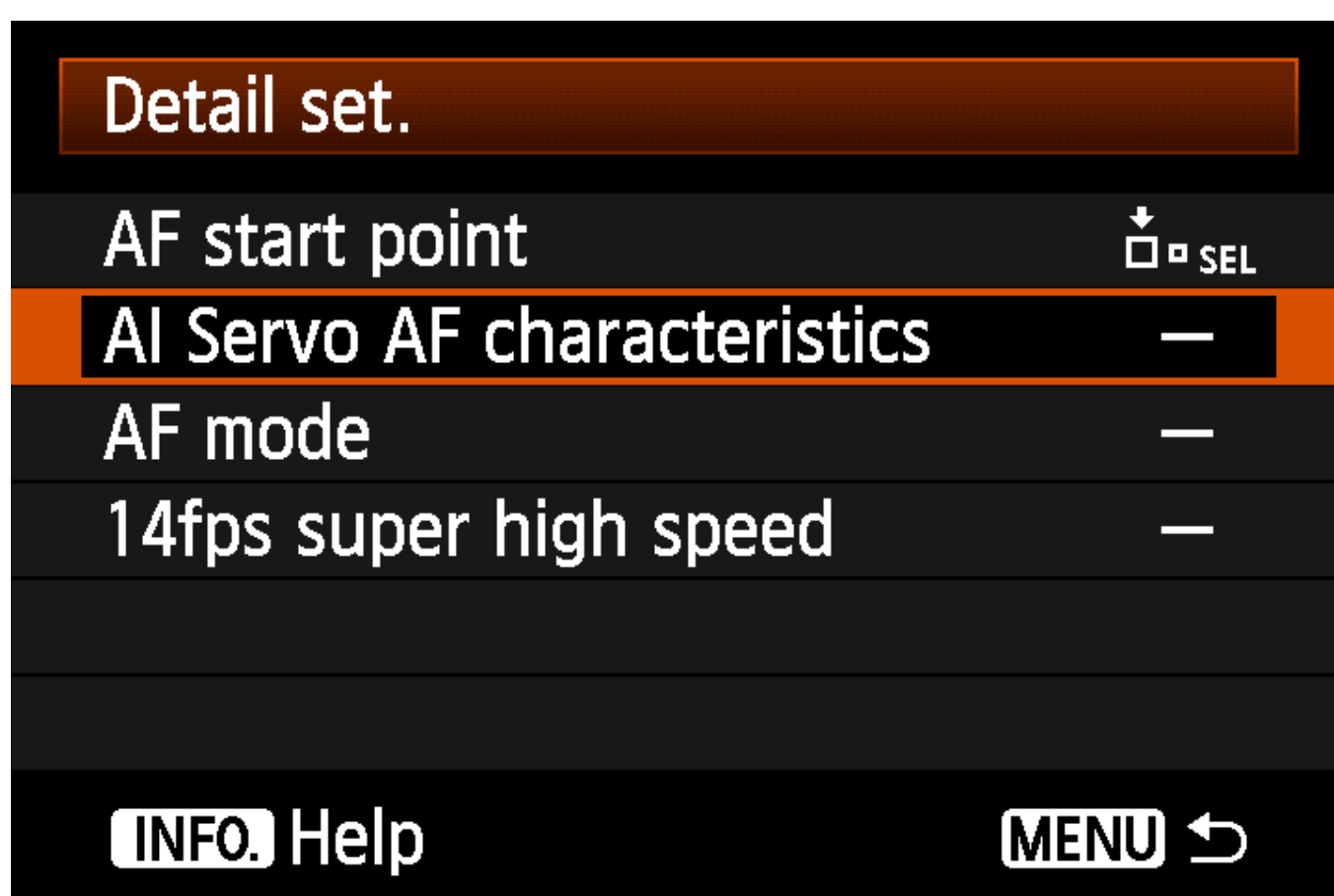
.....

1 Detailed settings for AF-ON/✱ button's [AF/Metering start]

Three settings can now be assigned to [AI Servo characteristics]



Press the INFO. button when the button customization button is in AF-ON/✱



In detailed settings, the following four parameters can be set: [AF start point], [AI Servo AF characteristics], [AF mode], and [Super high-speed continuous shooting mode]

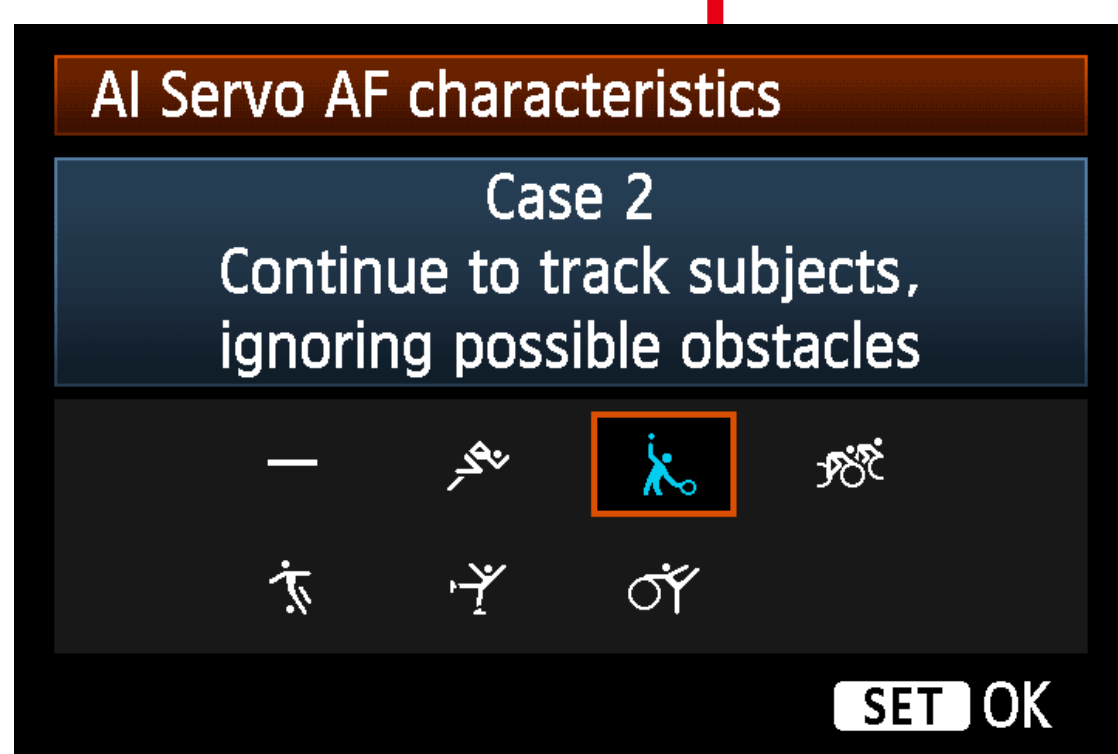
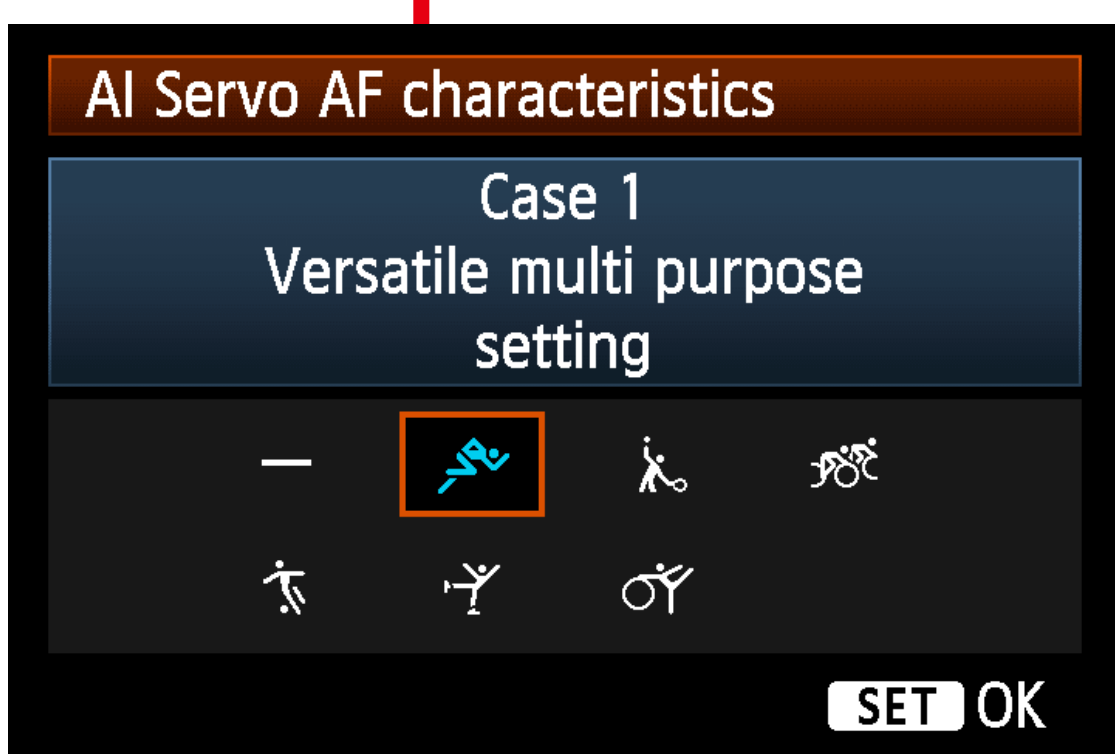
In C.Fn5 [Customize Controls], press the INFO. button while [AF/Metering start] is selected for AF-ON and ✱ buttons to switch to detailed settings. You can now choose from four settings including the three newly added options.

This feature makes it possible to instantly switch between continuous shooting modes using the two adjacent buttons

Assign
[Case1] to
AF-ON



Assign
[Case2] to
✱



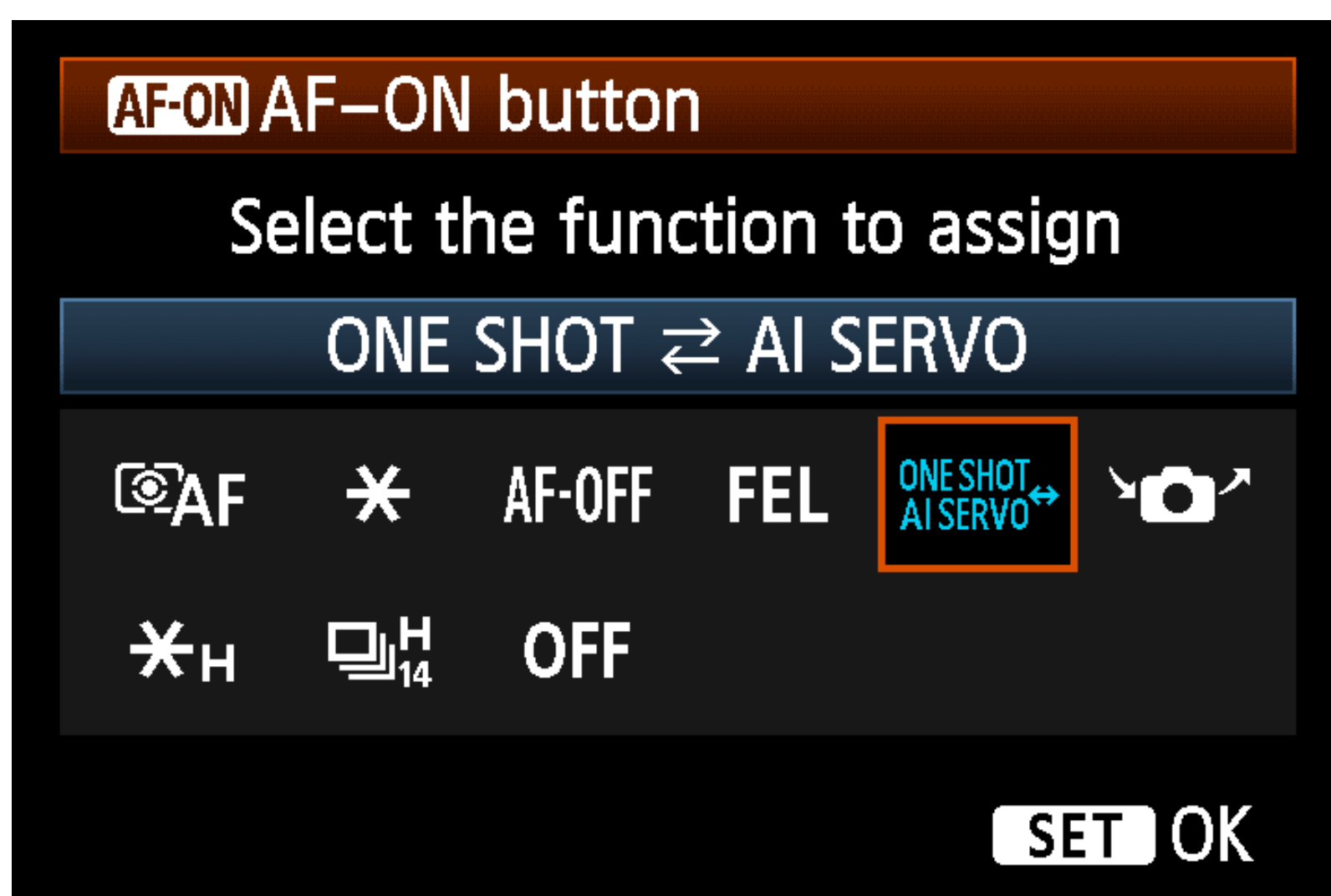
When usually using the AF-ON button (Case1) to shoot, use the ✱ button (Case2) to shoot when there are many obstacles

Example:

Switch AI Servo AF characteristics with the AF-ON button and **✖** button

When you assign functions to the **AF-ON** and **✖** buttons, those two adjacent buttons can be used to instantly switch functions for shooting. For example, when assigning the two often used AI Servo AF characteristics (Cases) , it is possible to switch to the optimal AI Servo AF characteristics depending on the subject and if any obstructions may enter the frame.

- 2 It is now possible to assign [ONE SHOT $\rightleftharpoons$ AI SERVO] to the AF-ON and $\times$ buttons



It is now possible to assign [ONE SHOT $\rightleftharpoons$ AI SERVO] to the AF-ON and $\times$ buttons using button customization

[ONE SHOT $\rightleftharpoons$ AI SERVO] has been added to the settings that can be assigned to the **AF-ON** and $\times$ buttons using [Button customization]. With these settings, you can switch AF modes while the button is pressed.

When it is difficult to press the M-Fn2/☉ button which could previously be used for assigning functions



The AF-ON/✱ buttons can easily be used to switch to One Shot and AI Servo while looking through the viewfinder



Although it has been possible to assign [ONE SHOT ⇔ AI SERVO] to the **M-Fn2** and ☉ buttons, when it is difficult to press these buttons on the front of the camera, it is effective to assign this function to the **AF-ON** and ✱ buttons. When quick shooting is required, you can now instantly switch AF modes.

In firmware V2.0, new settings can be assigned using customization function C.Fn5 [Button Customization]. When using AF functions that can be assigned to the **AF-ON** and **✱** buttons on the back of the camera, you can instantly switch functions to match the subject and situation without changing how you hold the camera.

When [AF/Metering start] is assigned to the **AF-ON** or **✱** buttons, you can perform detailed settings in [AF start point], [AI Servo AF characteristics (Case)], [AF mode], and [Super high-speed continuous shooting mode]. Using those settings, you can instantly switch parameters to match subject movement and characteristics by using the **AF-ON** button to switch to Case1, and the **✱** button to switch to Case2, or using the **AF-ON** button to switch to AI Servo AF, and the **✱** button to switch to One Shot. Because [ONE SHOT ⇔ AI SERVO] can now be assigned to the **AF-ON** and **✱** buttons, you can customize controls to meet your preferences or the scene.



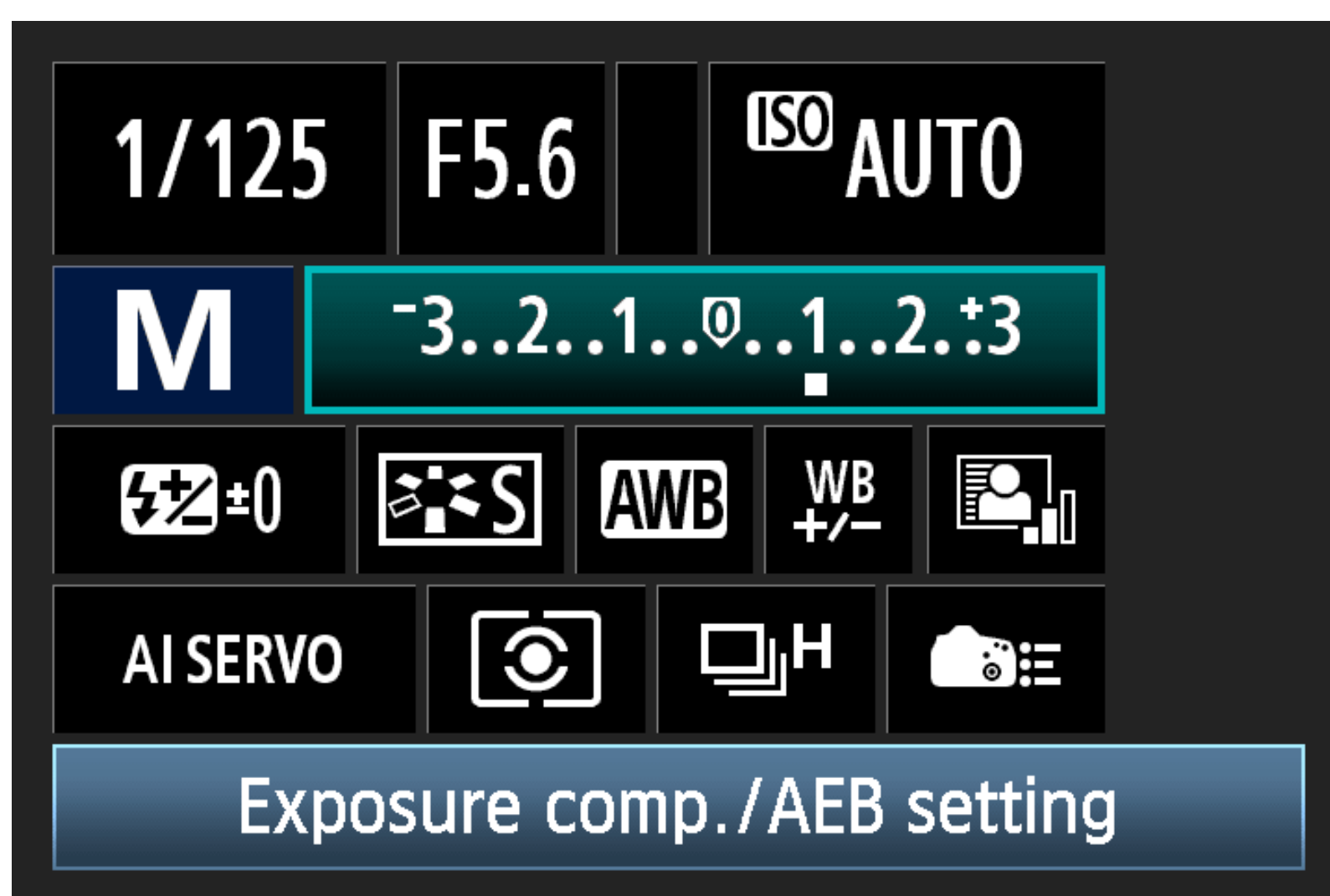
Using ISO Auto

Exposure compensation is now possible in M mode and ISO Auto

Because we received many requests to make exposure compensation possible by changing the ISO speed in M mode, this feature has been included in firmware V2.0.

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You can control exposure compensation to match your creative intentions



Among the two methods for adjusting exposure compensation is the easy method of adjusting it from the quick settings screen, and assigning the exposure compensation function to the SET button for controls while using the viewfinder. When the exposure exceeds the ISO Auto's range, the level display within the viewfinder will differ from the exposure compensation level.

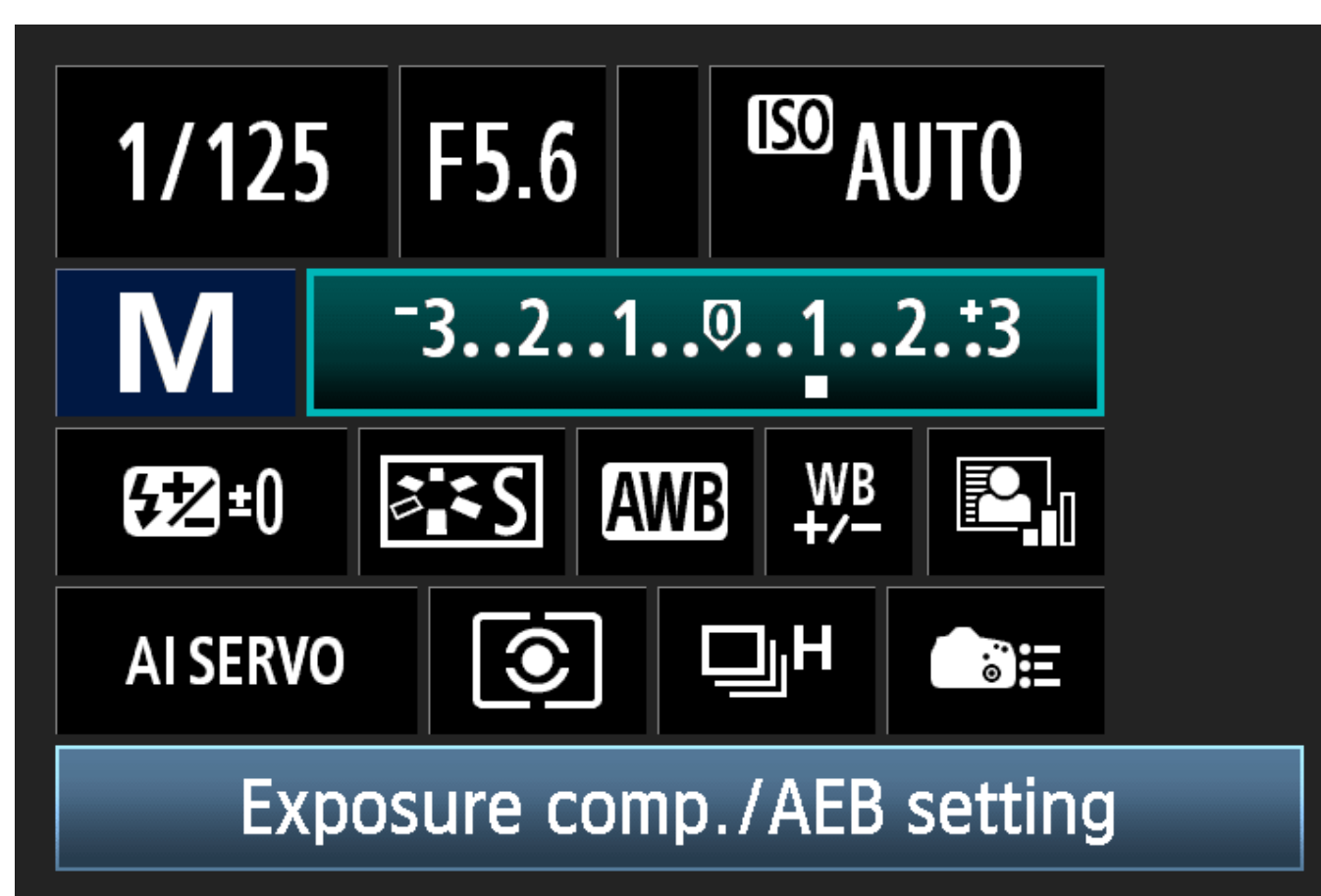
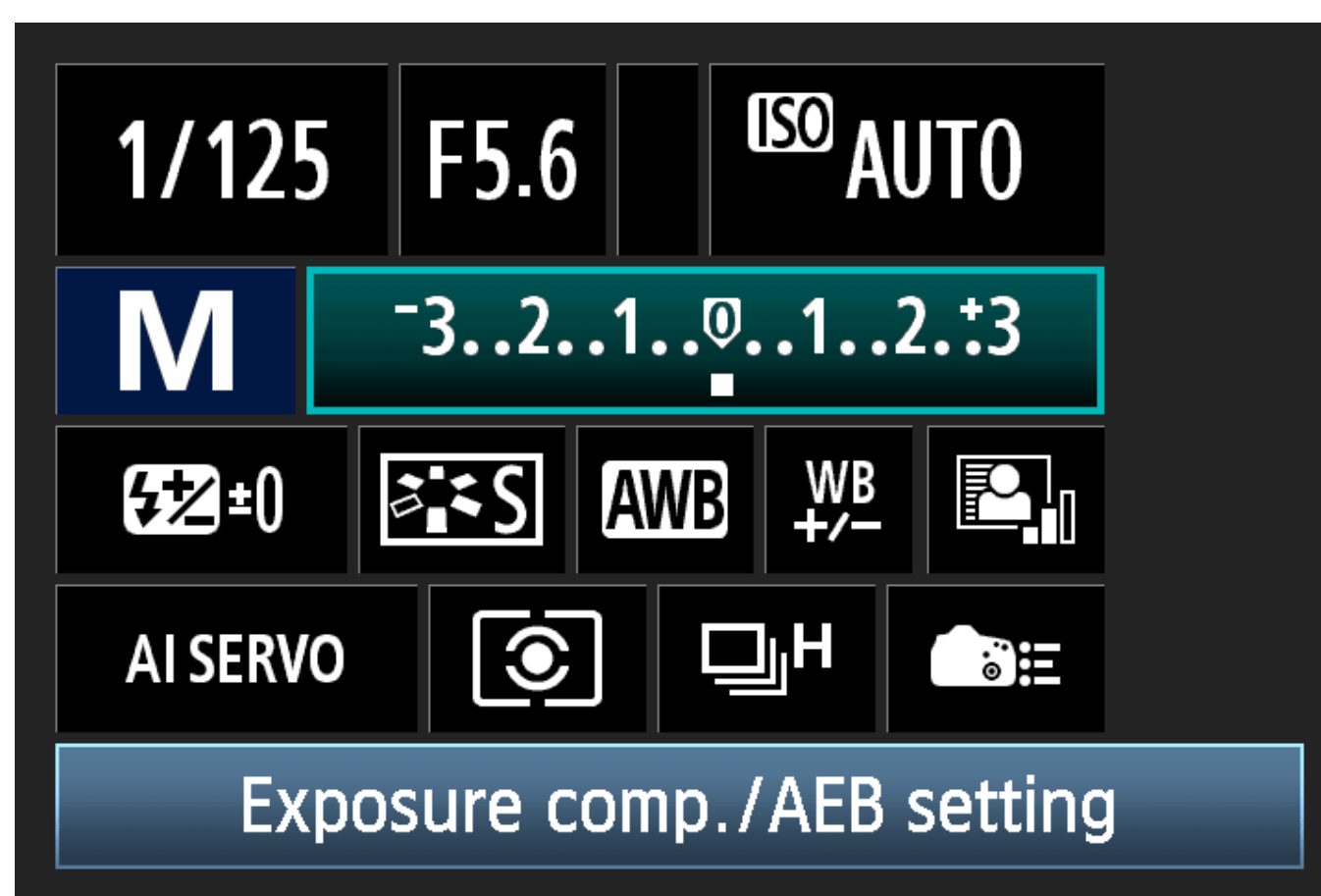
How to control exposure compensation in M mode and ISO Auto

1 Exposure compensation from the quick setting (Q) button

In M mode and ISO speed Auto



Controlling exposure compensation parameters with the Q button



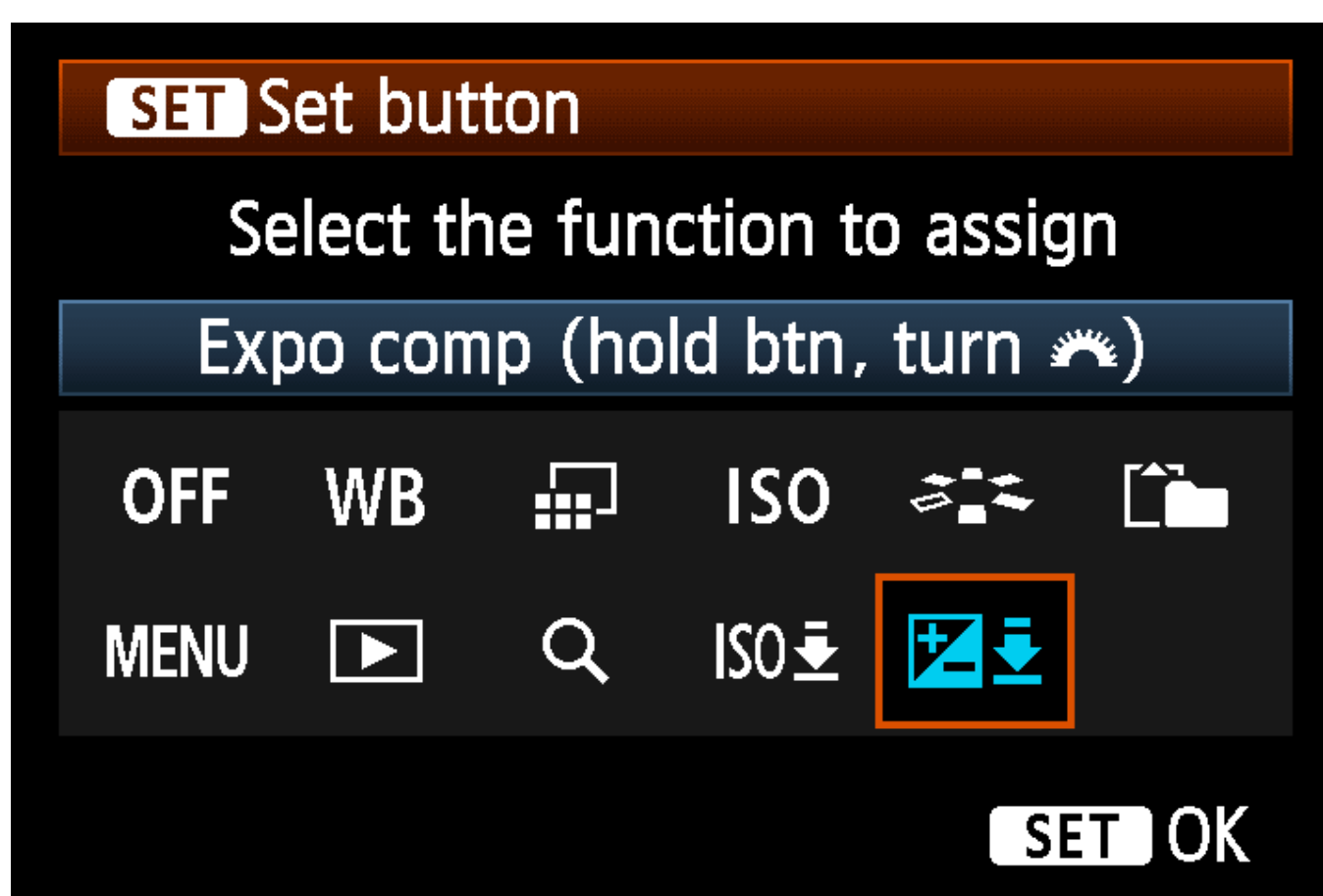
Controlling exposure compensation parameters

When M mode and ISO Auto are set, you can use the Q button to enter the quick settings screen to control exposure compensation parameters.

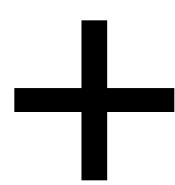
2 Assign [Exposure compensation] to the SET button

In M mode and ISO speed Auto

Assign exposure compensation to the SET button using button customization



SET button



Exposure compensation
is available from the
main dial

Assign the exposure compensation function to the SET button using C.Fn5 [Button Customization]. Additionally, exposure compensation can be adjusted by operating the main dial while pressing the SET button.

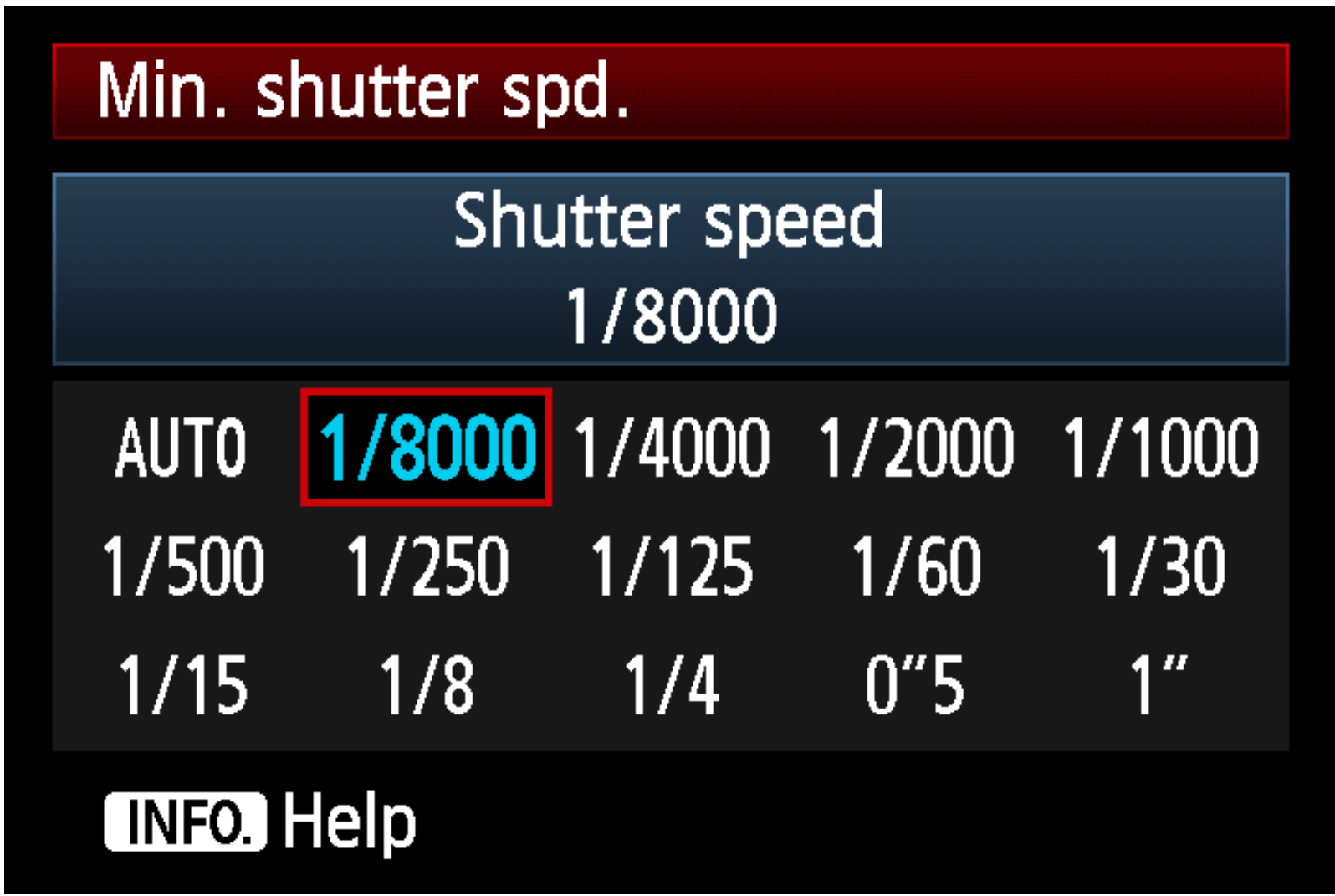


Using ISO Auto Minimum shutter speed at ISO Auto expanded to 1/8000 sec.

Up to now, [Min. shutter spd.] was 1/250 sec., however this has been expanded to 1/8000 sec. In Av and P modes, you can now shoot with reduced subject blur and camera shake due to high shutter speeds.

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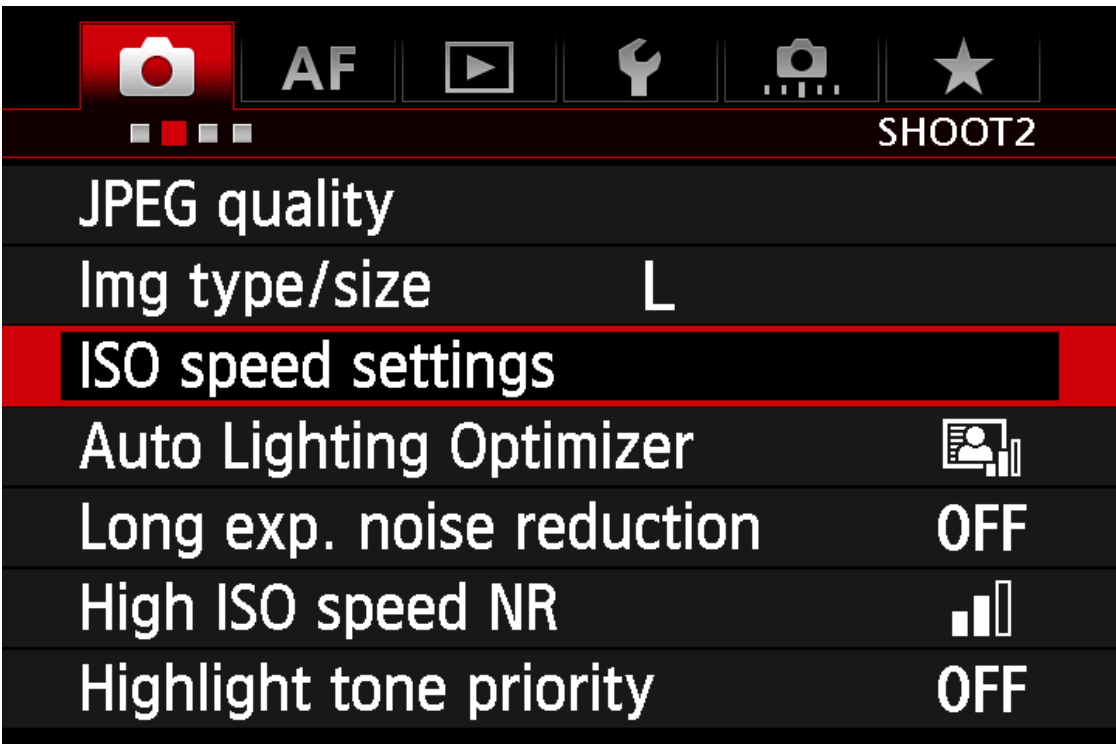
Reduce camera shake and subject blur at high shutter speeds in Av and P modes



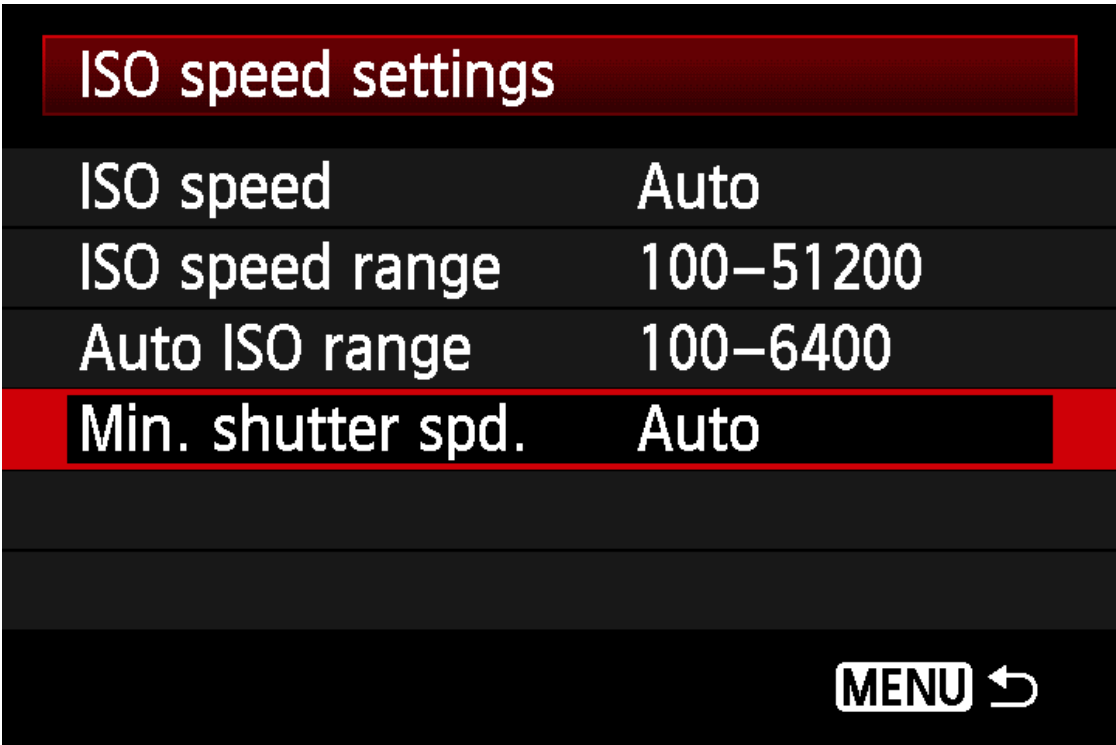
Another function added to ISO Auto is an expanded shutter speed for [Min. shutter speed]. The minimum shutter speed that was previously 1/250 sec. is now expanded to a maximum of 1/8000 sec. By setting a high shutter speed above a certain value when in ISO Auto you can capture quick-moving subjects with reduced blur and prevent camera shake. Use this to reduce blurring when shooting in Av and P modes.

Setting procedures

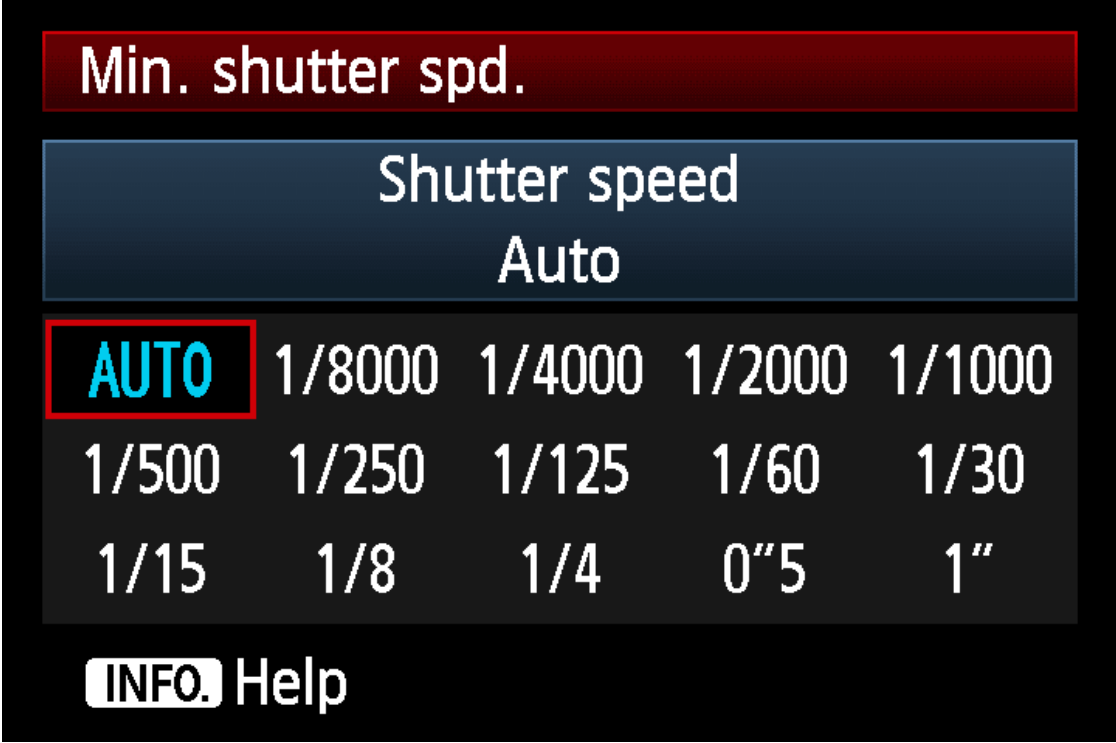
In [ISO speed settings] [Min. shutter spd.], you can select the minimum shutter speed from 1/8000 sec. to 1 sec. in 1 step increments.



[AF tab 2]
From
[ISO speed settings]



Select
[Min. shutter spd.]



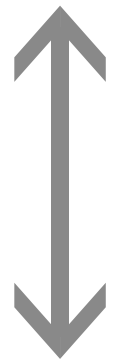
And choose a minimum
shutter speed

Other firmware changes

Automatic exposure shift from lens aperture value change when in M mode



Lens with max.
aperture value of
f/2.8



Lens with max.
aperture value of
f/4

When the maximum aperture value (or the minimum aperture value) is forcibly changed when switching to a lens with a differing aperture value while in M mode, the ISO speed or shutter speed will automatically shift so the exposure does not change. For example, 1/2000 f/2.8 ISO 400 will automatically switch to 1/1000 f/4 ISO 400













