Canon



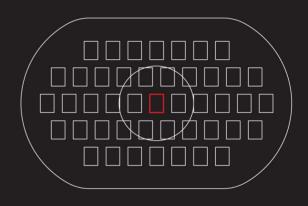
Guide to
Al Servo AF Custom Functions











All for that one, special moment

Guide to Canon EOS-1D Mark III AI Servo AF Custom Functions

C.FnⅢ

Custom Functions Category for Detailed AF Settings

The EOS-1D Mark III offers a total of 57 functions in the Custom Functions (C.Fn) menu category, offering a fine level of control to suit your shooting style and application. When shooting subjects in motion, take advantage of Custom Functions in the C.Fn III: Auto focus/Drive group that control the AI Servo AF. By adjusting four of these functions —C.Fn III-2, C.Fn III-3, C.Fn III-4, and C.Fn III-8—you can customize AI Servo AF operation to suit specific needs. This guide describes these Custom Functions as well as AF Microadiustment (C.Fn III-7), for fine-tuning the focus position.

Function Guide C.Fn III Options Controlling the AI Servo AF: Understanding Each Option



Ⅲ-2 Al Servo tracking sensitivity P020



Ⅲ-3 Al Servo 1st/ 2nd image priority P021



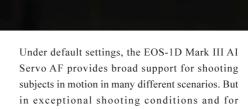
Al Servo AF tracking method P022



Ш-8 AF expansion with selected point P023



AF Microadjustment



All for that one, special moment

Default settings are your basic option.

The right C.Fn settings enable better focusing in a variety of scenes, supporting particular shooting objectives

> unfamiliar scenes, adjusting C.Fn settings can enhance focusing with the AI Servo AF. This guide introduces examples of C.Fn III settings to support you under these conditions.

> > P016



Practical Tips EOS-1D Mark III AI Servo AF C.Fn Settings Examples, by Subject/Scene

Shooting Scenarios and Examples of Effective C.Fn Settings

Default Versatile settings for typical moving Ш-2:0 Ш-3:0 subjects in a variety of scenes

Scenario 001

Shooting while tracking fast-moving subjects

Ш-2:-1 Ш-3:1



Default

with subjects that move suddenly



Scenario 003

> Continuous focus on breaststroke swimmers repeatedly ducking underwater

 $\Pi - 2 : -1 \quad \Pi - 3 : 0$

III-2:-1 III-3:0

 $\Pi - 4 : 0 \quad \Pi - 8 : 2$

Ⅲ-4: 0 **Ⅲ-8**: 2 P010

P006

P008



Scenario 004

Continuous focus on sprinters near the finish line

III-2:0 III-3:1 P012



Scenario 005

> Continuous focus on particular athletes during complex action in team sports

III-2:0 III-3:0

P014



Scenario 006

Shooting during rapid motion in all directions

III-2:-2 III-3:0 III-4:0 III-8:2





007

Tracking a single athlete while another enters the scene $\Pi - 2 : 0 \quad \Pi - 3 : 0$ Ⅲ-8:2

P018

Information in this guide is mainly intended for the EOS-1D Mark III, but it is equally helpful for the EOS-1Ds Mark III

C. Fn I : Exposure

C. FnIII: Auto focus/Drive

C. Fn setting register/apply

C. FnIV:Operation/Others Clear all Custom Func. (C.Fn)



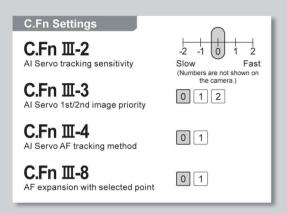
C.Fn Settings Examples, by Subject/Scene



Selected AF point



Default Versatile settings for typical moving subjects Settings in a variety of scenes



Under default settings, the four Custom Functions controlling the AI Servo AF are in their original, unmodified state.

Default settings can be used in general action photography of many kinds. They are particularly effective when the subject is sufficiently large on the screen and the motion is fairly predictable.

Consider the default settings your basic option in action

For better accuracy of the first image: With AF on, focus-track the subject in the selected AF point for about a second before pressing the shutter button.



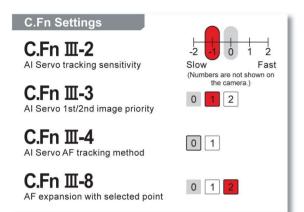
Guideline



Scenario 001

Shooting while tracking fast-moving subjects

Expand the AF Point Area



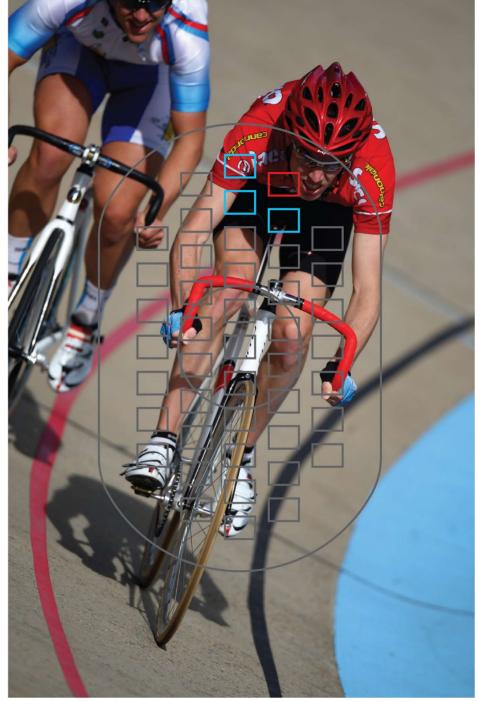
Cyclists or speedskaters flying around a turn are difficult to keep in focus. Default settings may be fine if you are far enough away from the subject. But at close range, you must move the lens quickly to follow the subject, and it may be hard to keep the subject in the selected AF point.

Here, first set III-8 to 2. Take advantage of both the selected AF point and surrounding Assist AF points. Shooting in AF mode with additional Assist points makes it easier to focustrack subjects you might otherwise lose with one point.

Also try setting III-2 to -1. This way, even if the subject suddenly moves away from the additional points, the focus is less likely to shift to the background.

Adjusting III-3 to 1 prepares for high-speed continuous shooting, enabling you to capture more winning shots. This setting, under well-lit conditions and in combination with the III-8 and III-2 settings mentioned, maintains a high shooting rate, assuming that ample focusing is possible.





Guideline

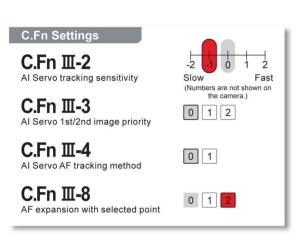
EF400mm f/2.8L IS USM 1/3200sec f/2.8 ISO100



Scenario 002

Dimly-lit indoor sports with subjects that move suddenly

Select AF priority/Tracking priority



Gymnasts move quickly and rather unpredictably when vaulting or tumbling in floor exercises. As in Scenario 001, these are difficult shooting conditions for focus-tracking with a single AF point.

That's why it is effective to increase the number of points (again, by setting III-8 to 2) and reduce the chance that the background will affect the focus (by setting III-2 to -1). But remember, the shooting environment may be dim for indoor sports such as gymnastics. The continuous shooting speed may drop if subject brightness and contrast declines. Under these conditions it may be a good idea to keep III-3 at 0, so you can count on the subject being tracked well.



Guideline



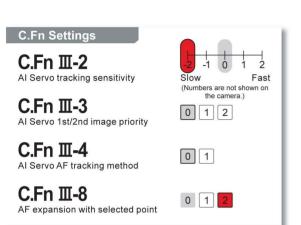
Selected AF point



Scenario 003

Continuous focus on breaststroke swimmers repeatedly ducking underwater

Set Al Servo tracking sensitivity to Slow: -2



Swimmers ducking underwater to do a breaststroke may cause the focus to shift from their face to the background, under default settings. When they emerge, it may be too difficult to regain the focus.

In these situations, try setting III-2 to the slowest option, -2. The camera will treat objects other than the athlete as obstructions. Even if the athlete is momentarily absent and the points are on the background, the background is interpreted as an obstruction, and the focus is less likely to shift to there.

To capture the subject effectively, set III-8 to 2 and take advantage of many AF points.

Note that if the subject is out of view for an extended period, as when swimmers are underwater longer, the focus may shift to the background. To prevent this, keep III-4 at 0 for immediate refocusing on the front subject if the focus has shifted to the background.



Guideline

Set Al Servo tracking sensitivity to Slow: -2 to maintain the original focus position longer, even if swimmers momentarily duck underwater.





Selected AF point

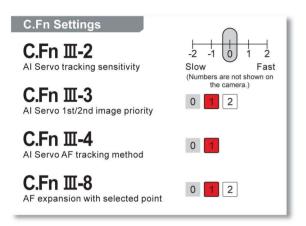






Continuous focus on sprinters near the finish line

Switch to Continuous AF track priority



At the finish line in track events, other runners may come in front of the person you are following during continuous shooting. Even if this happens, these settings will help keep the focus on the selected runner.

First, set III-8 to 1 to activate Assist AF points left and right of the selected AF point (or above and below it, for a vertical shot) to follow the selected runner.

Next, set III-4 to 1. Even if other runners come in the way, they are treated as obstructions, and the focus remains on the one farther away.

Additionally, adjusting III-3 to 1 ensures an adequate continuous shooting speed (in fps), enabling you to capture more winning shots the moment runners cross the finish line, as in the example for cycling (Scenario 001).

Selected AF point Assist AF points



Avoid



Guideline

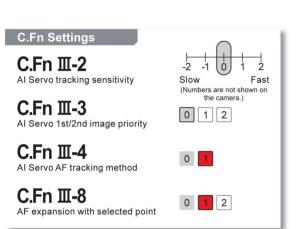
EF400mm f/2.8L IS USM 1/1600sec f/2.8 ISO100



Scenario 005

Continuous focus on particular athletes during complex action in team sports

Switch to Continuous AF track priority



Soccer, rugby, basketball, and other team sports present special challenges in focusing because players cross in front of each other unpredictably.

Here, the same settings as in Scenario 004 are effective, used when other athletes come between you and the intended subject. Specifically, with III-8 at 1 to follow the target athlete, set III-4 to 1 to treat players who come between you as obstructions. This enables continued focus-tracking on the desired player. Note that with III-4 at 1, if the focus shifts to the background, it may be difficult to recover focus during continuous shooting. One way to restore focus to the intended player immediately is to switch AF off and on.

Team sports involve more complex motion than the finish line of track events, and the camera must manage this action effectively. Increase tracking precision by keeping III-3 at 0.



Guideline



Selected AF point

With Main focus point priority, the high-precision AF mechanism may be too responsive, and the focus may shift to players who come in front.



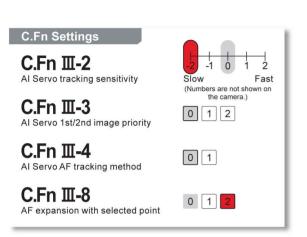


Selected AF point

Scenario 006

Shooting during rapid motion in all directions

Set Al Servo tracking sensitivity to Slow: -2

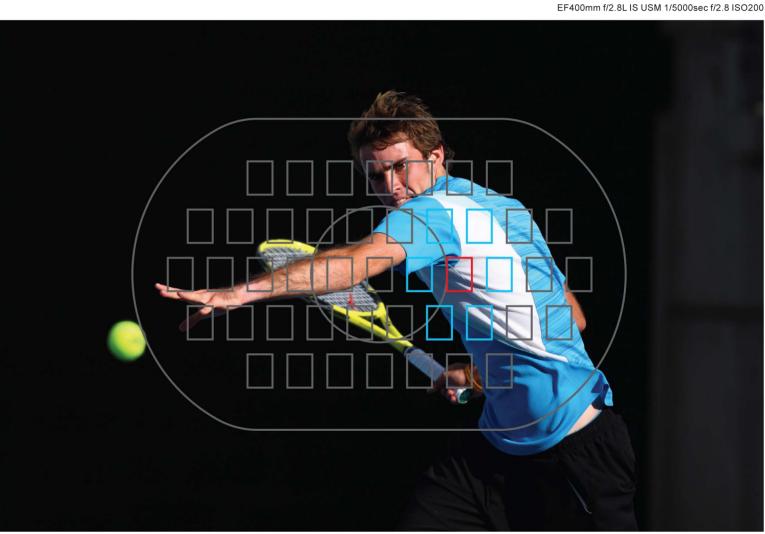


At tennis matches and similar events, players you are trying to shoot move from one instant to the next, defying capture, but opponents won't ever move in front of each other. To be prepared, try the following settings for these sports.

First, set III-8 to 2 to use the most AF points, which will help you respond to the athletes' quick movements.

Next, set III-2 to -2. Even if a player moves away from all the additional AF points, this setting makes it less likely the focus will shift to the background.

Sometimes players suddenly move to the opposite side, and inevitably, the focus shifts to the background. Here, it's effective to set III-4 to 0 to enable immediate recovery of focus once you have the player in the selected AF point again.



Guideline



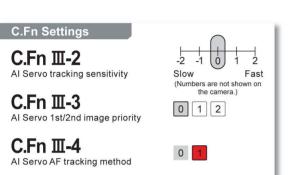
C.Fn III-8

AF expansion with selected point

Tracking a single athlete while another enters the scene

Switch to Continuous AF track priority

0 1 2



Baseball scenes may resemble those in soccer (Scenario 005), because players cross in front of each other. Here, too, when you're focusing on the player guarding a base as another slides in, it's effective to have the camera treat the player passing in front as an obstruction.

To capture action by the desired player, set III-8 to 2. Set III-4 to 1 to treat the subject passing in front as an obstruction. But unlike the settings examples in Scenario 005, setting III-8 to 2 adds AF points. As a result, AF tracking precision can be enhanced even for fast-moving subjects that are difficult to capture.



Selected AF point

Assist AF points

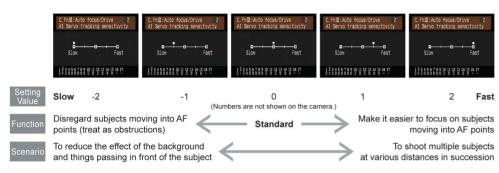
C.Fn III Options Controlling the AI Servo AF

EOS

C.FnⅢ-2

Specify the timing for determining when to switch subjects

Al Servo tracking sensitivity



AI Servo tracking sensitivity: During focusing when the AI Servo AF is used, the AF sensitivity for tracking subjects (or obstructions) moving into AF points can be set in one of five levels.

Slow

Setting this option toward **Slow** makes any obstructions less disruptive.

Values toward **Slow** make it easier to keep tracking a particular athlete. The camera is more likely to disregard subjects passing through AF points, which are treated as obstructions. These settings are therefore effective when ignoring other, interposing athletes in scenes with multiple athletes crossing in front of each other.

Similarly, if only the background appears in AF points when the main subject unexpectedly slips out of view, the background is also treated as an obstruction and disregarded.

Values toward **Slow** are therefore effective in dynamic scenes when focus-tracking in AF points is difficult.

Fast

Setting this option toward **Fast** makes it easier to focus on any subjects entering from the side. Instead of being treated as obstructions, subjects in the AF points are treated as viable subjects for focusing, enabling more responsive focusing. Values toward **Fast** are therefore effective when you want to focus on the player in a group who comes into the foreground, or when shooting multiple athletes at various distances in succession.



C.FnⅢ-3

Specify the priority when the shutter is released: focus or continuous shooting speed

Al Servo 1st/2nd image priority



Setting Value

0: AF priority/ Tracking priority



First shot: priority on focus Subsequent shots: priority on tracking



To prioritize tracking of the subject



1: AF priority/ Drive speed priority

First shot: priority on focus Subsequent shots: priority on continuous shooting speed

To maintain a fast continuous shooting speed after the first shot



2: Release/ Drive speed priority

First shot: priority on shutter release
Subsequent shots: priority on continuous shooting speed

To prioritize a fast continuous shooting speed, above all else

When the AI Servo AF is used in continuous shooting, you can adjust the relationship of servo operation to shutter-release timing.

In settings that affect the shutter-release timing, you can emphasize focus-tracking or continuous shooting speed.

0: AF priority/Tracking priority

Give priority to focusing for the first shot. For subsequent shots during continuous shooting, give priority to focus-tracking.

1: AF priority/Drive speed priority

Give priority to focusing for the first shot. For subsequent shots during continuous shooting, prioritize the continuous shooting speed over focustracking.

2: Release/Drive speed priority

Prioritize shutter release over focusing for the first shot. For subsequent shots during continuous shooting, prioritize the continuous shooting speed even more than in setting 1.

Setting 0 is effective when focus-tracking matters most, for shots with greater focus precision. Setting 1 helps ensure optimal focus for the first shot while maintaining the continuous shooting speed for subsequent shots, to capture more moments of the action. Setting 2 is best when shutter release is most critical.

Keep in mind that emphasizing continuous shooting speed (settings 1 and 2) may be inappropriate under low light and with low subject contrast, or under other conditions when the focus takes longer to predict. Study the shooting conditions when configuring this setting.



C.FnⅢ-4

Specify whether to switch focus to subjects in front or disregard them

Al Servo AF tracking method





0: Main focus point priority



Focus mainly on subjects in selected AF points



To switch subjects, aiming at one after another



1: Continuous AF track priority

Disregard other subjects passing in front of selected AF points (treat as obstructions)

To follow a particular subject, disregarding subjects that come in front

This Custom Function is only available when automatic AF point selection or C.Fn III-8 (AF expansion with selected point) is selected.

When another subject moves into the main focus point* in front of your original subject during focustracking with the AI Servo AF, you can specify whether the focus switches to that subject or whether these new subjects are disregarded (treated as obstructions).

* Main focus point: The center AF point when automatic AF point selection is used, or your selected AF point when AF expansion is used.

0: Main focus point priority

Switch focus to the closer subject. The active AF point will switch to the main AF point. (automatic AF point selection and C.Fn III-8 (AF expansion with selected point) are for shooting while shifting from one AF point to another. These points switch

to the main focus point once, after which shooting is based on automatic switching.)

Effective when keeping the focus on the closest subject.

1: Continuous AF track priority

Disregard any closer subject, which is treated as an obstruction.

Results of focusing help track the subject, and AF points switch from one to the next.

Effective when other athletes or objects such as fences or rails come in front of the subject, because these are disregarded.



C.FnⅢ-8

Specify whether to supplement the selected AF point with others nearby

AF expansion with selected point





0: Disable



Only the selected AF point is active



To track only subjects in selected AF points



1: Enable (left/right Assist points)

Activate the Assist AF points next to the selected AF point, on the left and right

To track subjects that will probably move away from the AF point, left or right



2: Enable (surrounding Assist points)

Activate Assist AF points around the selected AF point

To track subjects that move unpredictably and will probably move away from the AF point

When you have selected an AF point for use with AI Servo AF or One-Shot AF, you can enlarge the area of the AF point by adding AF points called Assist AF points.

This is effective with moving subjects that are difficult to track using a single AF point. Cycling and other high-speed sports, for example, require quick panning close to the athletes as you shoot. In these situations, to capture the subject in a single AF point reliably, AF point expansion is effective.

0: Disable

No AF point expansion.

1: Enable (left/right Assist points)

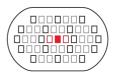
Activate Assist AF points left and right of the selected AF point (or above and below it, in vertical shots).

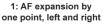
2: Enable (surrounding Assist points)

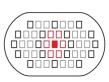
Activate Assist AF points around the selected AF point.

When choosing a setting, it's a good idea to consider the number of points added and the position of the Assist AF points, which determine the best setting for your needs.

Keep in mind that AF point expansion is centered on your selected AF point. If you select an AF point on the edge of the elliptical AF area, setting 1 activates only one expansion point, inward from your selected AF point. Setting 2 activates 3 or 4 Assist AF points inward from your selection.







2: AF expansion by one point all around

■ Selected point □ Expansion points



How C.Fn Groups III-2, 4, and 8 are Related

Overall operation varies based on the combination of settings in these three Custom Functions

III-8 and III-2 Sensitivity is less emphasized than AF point switching when AF expansion is used

III-8: AF Expansion	III-2 Tracking Sensitivity		Function
Enabled	All settings	Optimal AF point	Immediately switch AF points
Enabled	All settings	No optimal AF point	The focus position is maintained based on sensitivity
Disabled	All settings	_	The focus position is maintained based on sensitivity

When you have activated C.Fn III-8 (AF expansion with selected point), regardless of the setting of C.Fn III-2 (AI Servo tracking sensitivity), the focus will shift immediately to an AF point capturing the subject, if there are any.

III-8 and III-4 The tracking method functions only when AF expansion is enabled

III-8: AF Expansion	III-4 Tracking Method		Function
Enabled	All settings	_	III-4 Functions
Disabled	All settings	_	III-4 Does not function

C.Fn III-4 (AI Servo AF tracking method) functions when C.Fn III-8 (AF expansion with selected point) is enabled or during automatic AF point selection.

III-8, III-4 and III-2 Sensitivity is emphasized less than AF point switching to the main focus point

III-8: AF Expansion	III-4 Tracking Method	III-2 Tracking Sensitivity	Function
Enabled	Setting 0 (Main focus point priority)	All settings	Switch the AF point to the main focus point*
Enabled	Setting 1 (Continuous AF track priority)	All settings	The focus position is maintained based on sensitivity
* When the main focu			

When C.Fn III-8 (AF expansion) is enabled or during automatic AF point selection and C.Fn III-4 is set to 0 (Main focus point priority), regardless of the tracking sensitivity in C.Fn III-2, as soon as the main focus point captures nearby subjects, the AF point returns to the center (or the selected AF point), where focusing is performed.

III-8 is the key point in the relationship of C.Fn groups III-2, 4, and 8. First, unless AF expansion is enabled in III-8 (except during automatic AF point selection), the tracking method of III-4 does not function. Additionally, when III-8 is enabled and AF expansion is active, the tracking sensitivity of III-2 is emphasized less than AF point switching. (When there is no optimal AF point, the subject

tracking sensitivity determines how the focus is maintained.) Furthermore, when the tracking method of III-4 is functioning, III-2 is emphasized less, and the focus switches toward the main AF point under setting **0** (Main focus point priority).

To summarize, disabling III-8 effectively disables III-4, III-8 takes precedence over III-2, and setting **0** of III-4 takes precedence over III-2.

C.FnⅢ-7

AF Microadjustment





0: Disable



No focus adjustment



1: Adjust all by same amount

Apply uniform adjustment for all lenses



For a fine level of focusing precision, customized for individual lenses

2: Adjust by lens

Apply the specified adjustment individually, based on lens name

This Custom Function enables fine-tuning of the point of focus during AF operation. Adjust the focus forward (+) or backward (-) by 20 steps.

0: Disable

No point of focus microadjustment is performed.

1: Adjust all by same amount

Shift the point of focus by the same specified amount for all lenses.

2: Adjust by lens

Individual adjustment can be set for any particular lens. Adjustments for up to 20 lenses can be registered in the camera. When a lens with a registered focus adjustment is used, its point of focus is shifted accordingly.

The adjustment amount per step varies depending on the maximum lens aperture. Take several test shots as you adjust the setting, until you obtain the desired adjustment amount.

Normally, adjusting the focus this way is not required. Set up AF Microadjustment only if necessary.

One special scenario where this function may be useful is when there is always a specific distance, more or less, between the position of a subject (an athlete's chest, for example) for capture with AF points and the position of desired focus (the athlete's face, for example). In this case, shifting the focus position may enable the desired focus. Keep in mind that the adjustment amount may be difficult to set, so take several test shots as you complete this setting.

Setting up AF Microadjustment

Determine the setting value on the registration screen, in a range 20 steps forward and back



Select either Adjust all by same amount or Adjust by lens.



Press the **Info.** button to display the registration screen, and then turn the dial left or right to set the amount of adjustment.



Once registration is complete, the adjustment value will be shown on the right edge of the screen for each setting item.



Other Custom Functions and Settings Useful in Shooting ISO speed adjustment, button settings, and other features useful in action photography

Custom Functions controlling AI Servo AF operation are the focus of this Custom Functions Guide, but many other key settings come into play when shooting dynamic subjects—such as controlling the ISO speed. We finish by introducing some C.Fn settings and other features that are convenient in action photography.

C.Fn I-3 Set ISO Speed Range*



Expand the maximum and minimum ISO speed

Although the normal ISO speed range is 100-3200 (in 1/3-step increments), this range can be expanded in C.Fn I-3 in a

range of ISO 50 (L)-6400 (H).

* ISO speed settings differ with the EOS-1Ds Mark III

C.Fn I-8 Safety Shift*



Prepare for sudden changes in brightness with auto ISO speed adjustment

To be prepared in Program AE, Shutterpriority AE, and Aperture-priority AE modes in case the subject brightness changes suddenly, preventing correct autoexposure,

set C.Fn I-8 to 2 for the camera to adjust the ISO speed in a range of 100-3200 automatically to obtain the correct exposure.

* ISO speed settings differ with the EOS-1Ds Mark III.

C.Fn **II-2 High ISO Speed Noise Reduction**



Disable noise reduction for a higher maximum burst

To capture the most shots during continuous shooting, set C.Fn II-2 to 0. Also, use a low ISO speed. Keep in mind that shooting in RAW supports a higher

maximum burst than shooting in RAW+JPEG, and shooting in JPEG supports more shots than in RAW.

C.Fn Ⅲ-9 Selectable AF Point



Use the Multi-controller for direct selection of the 19 AF points

With C.Fn III-9 set to 3. 4. or 5. the Multi-controller can be used for direct selection of AF points. Use 3 to enable direct selection of all 19 AF points. 4 for the inner 9 points, and 5 for the outer 9 points by the Multi-controller.

C.Fn IV-1 Shutter Button/AF-ON Button



Use the AF-ON button to prevent AF operation with the shutter button pressed halfway

If you prefer not to use autofocus when the shutter button is pressed halfway, set C.Fn IV-1 to 2 or 3 to enable control using the

AF-ON button. This way, the AF-ON button can be used as a button to stop AF operation.

C.Fn IV-3 **Quick Control Dial in Metering**



Use the Main Dial for both aperture and shutter speed adjustment

By setting C.Fn IV-3 to 3, you can press the AF point selection button to enable aperture adjustment with the Main Dial. Let go of the AF point selection button to

enable shutter speed adjustment with the Main Dial. This makes it easy to adjust both the aperture and shutter speed using the

C.Fn IV-4

SET Button When Shooting



Assign functions you use most to the SET button for greater convenience

Use C.Fn IV-4 to assign frequently used functions such as image playback or menu display to the SET button. This makes it easier to operate the camera with your

right hand, maintaining your grip without taking your left hand away from supporting the lens.

C.Fn IV-13 Shortened Release Time Lag



Speed up the time lag by up to about 20%

Set C.Fn IV-13 to 1 to reduce the time lag by up to about 20%, compared to the regular time lag. By canceling the default stabilization control, you can make the

shutter-release time lag dependent on the aperture.

Application

C.Fn Registration/ Register Custom Function settings

Custom functions you use most can be registered for instant recall as needed

Register up to three sets of Custom Function settings on the camera. This is convenient when managing settings by shooting scenario: settings for running or cycling events on roads, settings for indoor sports, and so on. Apply these settings to switch to the Custom Function values instantly.

Shutter Button/AF-ON Button



Deactivate autofocus if athletes are out of view for a specific period

The focus may inevitably shift to the surface of the water when autofocus is used during swimming events where swimmers remain underwater for extended

periods. To prevent this, let go of the AF-ON button or perform another action to cancel AF momentarily, and then activate AF again as needed

^{*}Supported when shooting with the aperture reduced up to 3 stops from maximum