## **ENGLISH**

## Canon

# PowerShot A460 PowerShot A450



Photo of PowerShot A460

**Before Using the Camera** 

Shooting

Playback/Erasing

**Print/Transfer Settings** 

Troubleshooting

List of Messages

**Appendix** 

# **Advanced** Camera User Guide

This guide explains camera features and procedures in detail.

DiG!C II











#### **Main Features**



#### **Shooting**

- Automatically adjusts shooting settings to match particular conditions (Special Scene Mode)
- Change the look of an image when it is shot

## Playback

- Plays movies with sound
- Auto plays slideshows

#### **Editing**

Records sound memos for still images

#### **Printing**

- Makes printing easy with the Print/Share button
- Also supports non-Canon brand PictBridge compliant printers

## **Uses of Recorded Images**

 Effortlessly transfer them to a computer with the Print/Share button

Photo of PowerShot A460

## **Conventions Used in this Guide**

Icons appearing next to or below titles indicate the shooting modes in which the procedure can be used. Mode dial

## 

\* Unavailable shooting modes are shown grayed out.

#### See Functions Available in Each Shooting Mode (p. 108).

• In this guide, the *Basic Camera User Guide* is referred to as the *Basic Guide*, and the *Advanced Camera User Guide* is referred to as the *Advanced Guide*.



This mark denotes issues that may affect the camera's operation.



This mark denotes additional topics that complement the basic operating procedures.



You can use SD memory cards, SDHC memory cards and MultiMediaCards with this camera.

These cards are collectively called memory cards in this guide.

#### Use of genuine Canon accessories is recommended.

This product is designed to achieve excellent performance when used with genuine Canon accessories. Canon shall not be liable for any damage to this product and/or accidents such as fire, etc., caused by the malfunction of non-genuine Canon accessories (e.g., a leakage and/or explosion of a battery pack). Please note that this warranty does not apply to repairs arising out of the malfunction of non-genuine Canon accessories, although you may request such repairs on a chargeable basis.

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## **Handling Precautions**

#### **Please Read**

#### **Test Shots**

Before you try to photograph important subjects, we highly recommend that you shoot several trial images to confirm that the camera is operating and being operated correctly.

Please note that Canon Inc., its subsidiaries and affiliates, and its distributors are not liable for any consequential damages arising from any malfunction of a camera or accessory, including memory cards, that results in the failure of an image to be recorded or to be recorded in a way that is machine readable.

#### **Warning Against Copyright Infringement**

Please note that Canon digital cameras are intended for personal use and should never be used in a manner that infringes upon or contravenes international or domestic copyright laws and regulations. Please be advised that in certain cases the copying of images from performances, exhibitions, or commercial properties by means of a camera or other device may contravene copyright or other legal rights even if the image was shot for personal use.

#### **Warranty Limitations**

For information on your camera's warranty, please refer to the Canon European Warranty System (EWS) Booklet supplied with your camera.

For Canon Customer Support contacts, please see the rear of the European Warranty System (EWS) Booklet.

#### **Camera Body Temperature**

If your camera is used for prolonged periods, the camera body may become warm. Please be aware of this and take care when operating the camera for an extended period.

#### About the LCD Monitor

The LCD monitor is produced with extremely high-precision manufacturing techniques. More than 99.99% of the pixels operate to specification. Less than 0.01% of the pixels may occasionally misfire or appear as red or black dots. This has no effect on the recorded image and does not constitute a malfunction.

#### Video Format

Please set the camera's video signal format to the one used in your region before using it with a TV monitor (p. 62).

#### **Language Setting**

Please see the Basic Guide (p. 7) to change the language setting.

## **Safety Precautions**

- Before using the camera, please ensure that you read the safety precautions described below and in the "Safety Precautions" section of the Basic Camera User Guide. Always ensure that the camera is operated correctly.
- The safety precautions noted on the following pages are intended to instruct you in the safe and correct operation of the camera and its accessories to prevent injuries or damage to yourself, other persons and equipment.
- Equipment refers to the camera, battery, battery charger (sold separately) and compact power adapter (sold separately).

## **A** Warnings

#### **Equipment**

 Do not point the camera directly at the sun or bright light sources.

Doing so could damage the camera's CCD or your eyesight.

- Store this equipment out of the reach of children and infants.
- Wrist strap: Placement of the strap around the child's neck could result in asphyxiation.
- Memory card: It may be swallowed accidentally. If this occurs, contact a doctor immediately.
- Do not attempt to disassemble or alter any part of the equipment that is not expressly described in this guide.
- To avoid the risk of high-voltage electrical shock, do not touch the flash portion of the camera if it has been damaged.
- Stop operating the equipment immediately if it emits smoke or noxious fumes.
- Do not allow the equipment to come into contact with, or become immersed in, water or other liquids. If the exterior comes into contact with liquids or salt air, wipe it dry with a soft, absorbent cloth.

Continued use of the equipment may result in fire or electrical shock. Immediately turn the camera power off and remove the camera batteries or unplug the battery charger or compact power adapter from the power outlet. Please consult your camera distributor or the closest Canon Customer Support Help Desk.

- Do not use substances containing alcohol, benzine, thinners or other flammable substances to clean or maintain the equipment.
- Do not cut, damage, alter or place heavy items on the power cord.
- Use only recommended power accessories.
- Remove the power cord on a regular periodic basis and wipe away the dust and dirt that collects on the plug, the exterior of the power outlet and the surrounding area.
- Do not handle the power cord if your hands are wet.
   Continued use of the equipment may result in fire or electrical shock.

#### **Battery**

- Do not place the batteries near a heat source or expose them to direct flame or heat.
- The batteries should not be immersed in water or sea water.
- Do not attempt to disassemble, alter or apply heat to the batteries.
- Avoid dropping or subjecting the batteries to severe impacts that could damage the casing.
- Use only recommended batteries and accessories.

Use of batteries not expressly recommended for this equipment may cause explosions or leaks, resulting in fire, injury and damage to the surroundings. In the event that a battery leaks and the eyes, mouth, skin or clothing contact these substances, immediately flush with water and seek medical assistance.

- Disconnect the battery charger and compact power adapter from both the camera and the power outlet after recharging or when not in use to avoid fire and other hazards.
- Do not place anything, such as tablecloths, carpets, bedding or cushions, on top of the battery charger while it is charging.

Leaving the units plugged in for a long period of time may cause them to overheat and distort, resulting in fire.

- When recharging the Canon AA-size NiMH batteries, use only a specified battery charger.
- The compact power adapter is designed for exclusive use with this equipment. Do not use it with other products.

There is a risk of overheating and distortion which could result in fire or electrical shock.

 Before you discard a battery, cover the terminals with tape or other insulators to prevent direct contact with other objects.

Contact with the metallic components of other materials in waste containers may lead to fire or explosions.

#### **Others**

 Do not trigger the flash in close proximity to human or animal eyes. Exposure to the intense light produced by the flash may damage eyesight.

In particular, remain at least one meter (39 inches) away from infants when using the flash.

 Keep objects that are sensitive to magnetic fields (such as credit cards) away from the speaker of the camera.

Such items may lose data or stop working.

### **A** Cautions

#### **Equipment**

- Be careful not to bang the camera or subject it to strong impacts or shocks that could lead to injury or damage the equipment when wearing or holding it by the strap.
- Do not store the equipment in humid or dusty areas.
- Do not allow metal objects (such as pins or keys) or dirt to contact the charger terminals or plug.

Such conditions could lead to fire, electrical shock or other damage.

- Avoid using, placing or storing the equipment in places subject to strong sunlight or high temperatures, such as the dashboard or trunk (boot) of a car.
- Do not use the equipment in a manner that exceeds the rated capacity of the electrical outlet or wiring accessories. Or, do not use the equipment if the cable or plug is damaged, or if the plug is not fully inserted into the power outlet.
- Do not use in locations with poor ventilation.

The above-mentioned can cause leakage, overheating or explosion, resulting in fire, burns or other injuries. High temperatures may also cause deformation of the casing.

 When not using the camera for extended periods of time, remove the batteries from the camera or battery charger and store the equipment in a safe place.

If the batteries are left inside the camera, damage caused by leakage may occur.

#### **Equipment**

 Do not connect compact power adapters or battery chargers to devices such as electrical transformers for foreign travel because it may lead to malfunctions, excessive heat generation, fire, electric shock or injury.

#### Flash

- Do not operate the flash with dirt, dust or other items stuck to the surface of the flash.
- Be careful not to cover the flash with your fingers or clothing when shooting.

The flash may be damaged and emit smoke or noise. The resulting heat build-up could damage the flash.

 Do not touch the surface of the flash after taking several pictures in rapid succession.

Doing so could result in burns.

## **Preventing Malfunctions**

#### **Avoid Strong Magnetic Fields**

 Never place the camera in close proximity to electric motors or other equipment generating strong electromagnetic fields.

Exposure to strong magnetic fields may cause malfunctions or corrupt image data.

#### **Avoid Condensation Related Problems**

 When moving the equipment rapidly from cold to hot temperatures, you can avoid condensation by placing the equipment in an airtight, resealable plastic bag and letting it adjust to temperature changes slowly before removing it from the bag.

Moving the equipment rapidly from cold to hot temperatures may cause condensation (water droplets) to form on its external and internal surfaces.

#### If Condensation Forms Inside the Camera

Stop using the camera immediately.

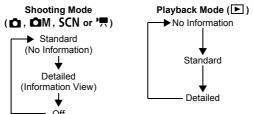
Continued use may damage the equipment. Remove the memory card and batteries or compact power adapter from the camera and wait until the moisture evaporates completely before resuming use.

## **Before Using the Camera—Basic Operations**

## **Using the LCD Monitor**

## 1 Press (DISP).

The display mode changes as follows with each press.



 The shooting information displays for approximately 6 sec. when a setting is changed, regardless of the selected display mode.



- The LCD monitor on or off setting is retained even after the camera power is turned off.
- The LCD monitor does not shut off in the ♥ or ➡ mode.
- The LCD monitor will not switch to the detailed display in the index playback mode (p. 51).

#### **Night Display**

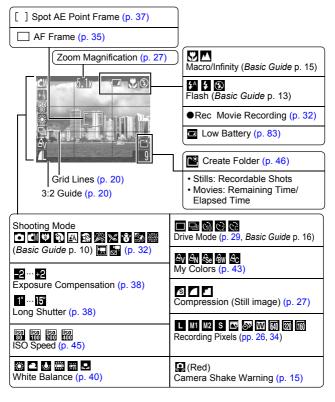
When shooting in dark conditions, the camera automatically brightens the LCD monitor to suit the brightness of the subject\*, making it easier to frame the subject.

\* Although noise may appear and the movement of the subject shown on the LCD monitor may appear somewhat jagged, there is no effect on the recorded image.

The brightness of the image displayed in the monitor, and the brightness of the actual image recorded will be different.

## **Information Displayed on the LCD Monitor**

## **Shooting Information (Shooting Mode)**



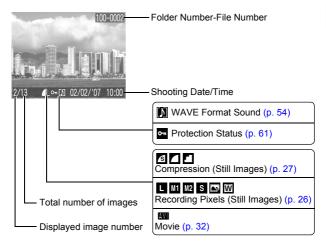


If the indicator blinks orange and the camera shake warning icon (( ) displays, this indicates that a slow shutter speed may have been selected due to insufficient illumination. Use the following methods to shoot:

- Raise the ISO speed (p. 45)
- Select a setting other than (flash off) (Basic Guide p. 13)
- Attach the camera to a tripod or other device

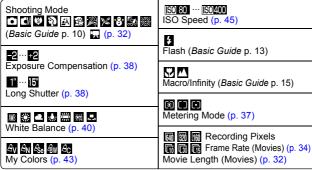
## Playback Information (Playback Mode)

#### **■Standard**



#### ■ Detailed





The following information may also be displayed with some images.

- A sound file in a format other than the WAVE format is attached or the file format is not recognized.

  JPEG image not conforming to Design rule for Camera File System Standards (p. 97)

  RAW image

  Unrecognized data type
- Information for images shot on other cameras may not display correctly.

## **Using the Viewfinder**

The viewfinder (*Basic Guide* p. 2) can be used to conserve power by turning the LCD monitor off (p. 12) while shooting.

## **Power Saving Function**

This camera is equipped with a power saving function. The power will shut off in the following circumstances. Press the power button again to restore power.

Shooting Mode	Powers down approximately 3 minutes after the last control is accessed on the camera. The LCD monitor automatically turns off 1 minute* after the last control is accessed even if [Auto Power Down] is set to [Off]. Press any button other than the power button to turn the LCD monitor back on.
Playback Mode Connected to a Printer	Powers down approximately 5 minutes after the last control is accessed on the camera.

<sup>\*</sup> This time can be changed.



- The power saving function will not activate during a slide show or while the camera is connected to a computer.
- The power saving function settings can be changed (p. 22).

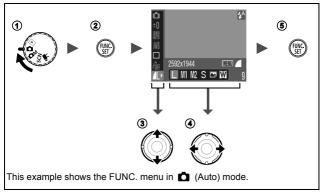
## **Menus and Settings**

Menus are used to set the shooting, playback and print settings as well as such camera settings as the date/time and electronic beep. The following menus are available.

- FUNC. Menu
- Rec., Play, Print and Set up Menus

#### **FUNC. Menu**

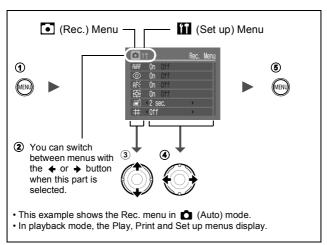
Sets many of the functions commonly used during shooting.



- ①Turn the mode dial to ♠, ♠M, SCN or 📆.
- 2 Press the FUNC./SET button.
- ③Use the ★ or ★ button to select a menu item.
  - · Some items may not be selectable in some shooting modes.
- - You can select further options with the MENU button for some options.
  - After selecting an option, you can press the shutter button to shoot immediately. After shooting, this menu will appear again, allowing you to adjust the settings easily.
- ⑤ Press the FUNC./SET button.

## Rec., Play, Print and Set up Menus

Convenient settings for shooting, playback or printing can be set with these menus.



- ① Press the MENU button.
- ②Use the ◆ or → button to switch between menus.
- ③Use the ★ or ★ button to select a menu item.
  - Some items may not be selectable in some shooting modes.
- ④Use the or button to select an option.
  - Menu items followed by an ellipsis (...) can only be set after pressing the FUNC./SET button to display the next menu.
     Press the FUNC./SET button again to confirm the setting.
- (5) Press the MENU button.

## **Menu List**

#### **FUNC.** Menu

The icons shown below are the default settings.

Menu Item	Reference Page	Menu Item	Reference Page
Manual Mode	Basic Guide p. 10	White Balance	p. 40
Special Scene Mode	Basic Guide p. 11	■ Drive Mode	p. 29, Basic Guide p. 16
Movie Mode	p. 32	6 My Colors	p. 43
Exposure Compensation	p. 38	Recording Pixels (Still image)	p. 26
Long Shutter Mode	p. 38	Compression (Still image)	p. 27
ISO Speed	p. 45	Recording Pixels (Movie)	p. 34

## Rec. Menu ( )

\* Default setting

	Menu Item	Options	Reference Page
AiAF	AiAF	On*/Off	p. 35
$\Omega^{\star}$	Slow Synchro	On/Off*	Basic Guide p. 14
0	Red-Eye	On*/Off	Basic Guide p. 14
(3)	Light Metering	<b>③</b> */ <b>●</b> / <b>●</b>	p. 37
AF<	AF-assist Beam	On*/Off	-
#	Digital Zoom	On*/Off	p. 27
Ē	Review	Off/2*-10 seconds/Hold	Basic Guide p. 9
	Disp. Overlay		
	(Still Images)	Off*/Grid Lines/3:2 Guide/ Both	p. 31
	(Movies)	Off*/Grid Lines	
<b>⊙</b> >	Date Stamp	Off*/Date/Date & Time	p. 30

## Play Menu (□)

Menu Item	Reference Page
Slide Show	p. 56
Sound Memo	p. 54
o <sub>™</sub> Protect	p. 61
Rotate	p. 53
Erase all	p. 63
Transfer Order	p. 67

## Print Menu (🕒)

Menu Item	Reference Page
Print	
Select Image & Qty.	
Select All Images	p. 64
Clear All Selections	
Print Settings	

## Set up Menu (111)

\* Default setting

Menu Item	Options	Reference Page
<b>⊈X</b> Mute	On/Off*	Set to [On] to silence all operation sounds except for the warning sounds ( <i>Basic Guide</i> p. 8).

Menu Item	Options	Reference Page
<b>№</b> Volume	Off/1/2*/3/4/5	Adjusts the volume of the start-up sound, operation sound, self-timer sound, shutter sound and playback sound. The volume cannot be adjusted if [Mute] is set to [On].
Start-up Vol.		Adjusts the volume of the start-up sound when the camera is turned on.
Operation Vol.		Adjusts the volume of the operation sound that beeps when any button other than the shutter button is pressed.
Selftimer Vol.		Adjusts the volume of the self- timer sound played 2 sec. before the shutter is released.
Shutter Volume		Adjusts the volume of the sound played when the shutter releases. The shutter sound does not play when a movie is recording.
<b>⊉</b> Playback Vol.		Adjusts the playback volume of movies and sound memos.
Start-up Image	On*/Off	Sets whether or not the Start-up Image appears when the camera is powered up.
LCD Brightness	(Normal)*/ (Bright)	Use the ← or → button to adjust the brightness.
Power Saving		p. 17
Auto Power Down	On*/Off	Sets whether or not the camera automatically powers down after a set period of time elapses without the camera being operated.
Display Off	10 sec./20 sec./30 sec./1 min.*/2 min./3 min.	Sets the length of time before the LCD monitor turns off when no camera operation is performed.
		Basic Guide p. 7

	Menu Item	Options	Reference Page
	Format		You can also select a low level format (p. 25).
No.	File Numbering	Continuous*/ Auto Reset	p. 48
<u>_*</u>	Create Folder		p. 46
	Create New Folder	Check mark (On)/ No check mark (Off)	Creates a folder during the next shooting session.
	Auto Create	Off*/Daily/ Monday- Sunday/ Monthly	You can also set an auto creation time.
	Lens Retract	1 minute* / 0 seconds	Sets the lens retraction timing when switching from shooting mode to playback mode.
₿	Language		Basic Guide p. 7
NTSC Pal	Video System	NTSC/PAL	p. 62
ф,	Print Method	Auto*/	See below*1.
<b>1</b> 04	Reset All		p. 24

<sup>\*1</sup>The connection method with the printer can be changed. Although it is normally not necessary to change the setting, select ✓ when borderless printing an image shot in ✓ (Wide) mode on wide size paper using Canon compact photo printer SELPHY CP730/CP720/CP710/CP510. As this setting will be stored to memory even when the power is turned off, to print using an image size other than ✓ return the mode to [Auto] (however, the connection method cannot be changed while connected to a printer).

## **Resetting Settings to Their Default Values**

**1 ∭** (Set up) Menu ▶ **⊠**(Reset All).

See Menus and Settings (p. 19).



2 Select [OK] and press (FF).



- Settings cannot be reset when the camera is connected to a computer or to a printer.
- The following cannot be reset.
  - Shooting mode
  - The (Oate/Time), (Date/Time), (Date/Time)
  - White balance data recorded with the custom white balance function (p. 40)

## **Formatting Memory Cards**

You should always format a new memory card or one from which you wish to erase all images and other data.



Please note that formatting (initializing) a memory card erases all data, including protected images and other file types.

**1** ∭ (Set up) Menu ▶ ∰ (Format).

See Menus and Settings (p. 19).



Format memory card?

14. OMB 12. OMB\_used

Format

## 2 Select [OK] and press ( ).

- You can stop formatting a card when
  [Low Level Format] is selected by
  pressing the FUNC./SET button. You can still use a card
  without problem when formatting is halted, but its data will
  be erased.



#### **Low Level Format**

We recommend you select [Low Level Format] when you think that the recording/reading speed of a memory card has dropped. A low level format may require 2 to 3 minutes with some memory cards.

## Shooting

#### 

Shooting Mode

1 FUNC. Menu ► [] \* ► [] (Recording Pixels) ► [] (Compression).

See Menus and Settings (p. 18).

- \* Default setting.
- Use the or > button to select compression settings/recording pixels and press the FUNC./SET button.

Recording Pixels



Purnose\*

## **Approximate Values for Recording Pixels**

Recording Fixels		Fulpose	
L (Large)	2952 x 1944 pixels	High	Printing to about A4 size (Approx. 210 x 297 mm (8.3 x 11.7 in.)) Printing to about Letter-size 216 x 279 mm (8.5 x 11 in.)
M1 (Medium 1)	2048 x 1536 pixels		Printing to about A5 size (Approx. 149 x 210 mm (5.9 x 8.3 in.))
M2 (Medium 2)	1600 x 1200 pixels		Printing postcard-size prints 148 x 100 mm (6 x 4 in.) Printing L-size prints 119 x 89 mm (4.7 x 3.5 in.)
S (Small)	640 x 480 pixels	<b>▼</b> Low	Sending images as e-mail attachments or shooting more images
or (Postcard) 1600 x 1200 pixels		100 m Printir	ng postcard-size prints 148 x lm (6 x 4 in.) ng L-size prints 119 x 89 mm 3.5 in.)
(Wide)	2592 x 1456 pixels	Printing on wide paper (Records at a 16:9 width-to-height aspect ratio. Areas that will not be recorded appear on the LCD monitor as a black border.).	

<sup>\*</sup> Paper sizes vary according to region.

## **Approximate Values for Compression Settings**

Compression		Purpose	
S Superfine	High Quality	Shoot higher quality images	
Fine	<b>↓</b>	Shoot normal quality images	
■ Normal	Normal	Shoot more images	



- See Image Data Sizes (Estimated) (p. 101).
- See Memory Cards and Estimated Capacities (p. 100).

# Using the Digital Zoom Shooting Mode Shooting Mode

You can combine the digital and optical zoom to shoot.

	PowerShot A460	PowerShot A450		
Still Images	Max. approx. 16x	Max approx. 13x		
Still Images ( mode only)	Max. approx. 16x (fixed to max. wide angle)			
Movies (Standard mode only)	Max. approx. 8.1x	Max. approx. 6.5x		



- The digital zoom cannot be used when the LCD monitor is turned off

## 

See Menus and Settings (p. 19).

\* Default setting.



#### 2 Press the 🚺 button and shoot.

- The combined digital and optical zoom setting will display in the LCD monitor.
- Based on the number of recording pixels set, the Safety Zoom feature calculates the maximum zoom factor beyond which image quality will begin to



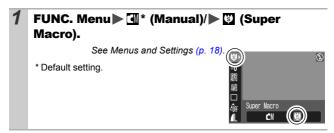
deteriorate. The digital zoom pauses at this zoom factor for a moment, and papears on the LCD monitor. If you press the fall button again, you can zoom in even

If you press the hatton again, you can zoom in even closer. The zoom factor display color changes from white to blue to indicate that the image quality will deteriorate.

• Press the [11] button to zoom out.



You can shoot an area of 17 x 13 mm  $(0.7 \times 0.5 \text{ in.})$  at a focusing distance as close as 1 cm (0.3 in.) from the end of the lens to the subject (minimum focusing distance) at maximum wide angle. With the digital zoom set at its maximum zoom factor (approx. 4.0x), you can shoot an area of  $4.2 \times 3.2 \text{ mm}$   $(0.2 \times 0.1 \text{ in.})$ .



## **Continuous Shooting**



In this mode, the camera shoots continuously while the shutter button is held down.

If you use the recommended memory card\*, you can shoot continuously (smooth continuous shooting) at a set shooting interval until the memory card is full (p. 100).

#### \* Recommended Memory Card:

Super high-speed SDC-512MSH memory card (sold separately) to which low-level formatting (p. 25) is conducted immediately before shooting.

- This reflects standard shooting criteria established by Canon. Actual results may vary according to the subject and shooting conditions.
- Even if continuous shooting suddenly stops, the memory card may not be full.

## **1** FUNC. Menu ▶ ■\* (Drive Mode) ▶ ■.

See Menus and Settings (p. 18).

\* Default setting.



## 2 Shoot.

 The camera will continue to record successive images while the shutter button is held down. Recording will cease when the shutter button is released.

#### **To Cancel Continuous Shooting**

Follow procedure 1 to display



- The interval between shots lengthens when the built-in memory of the camera fills.
- If the flash is used, the interval between shots lengthens because the flash must charge.

#### **Postcard Mode**

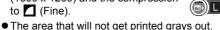


You can shoot images with the optimal settings for postcards by composing them inside the print area (width-to-height ratio of approximately 3:2) shown in the LCD monitor.

## 1 FUNC. Menu ▶ 🔟 ▶ 🖾 (Postcard).

See Menus and Settings (p. 18).

- \* Default setting.





0

The digital zoom cannot be used in this mode.



For printing instructions, refer to the Direct Print User Guide.

## **Embedding the Date in the Image Data**

You can embed the date in image data when (Postcard) is selected.

1

[Off]\*/
[Oate & Time]. [Off]\*/

See Menus and Settings (p. 19).

- \* Default setting.
- LCD monitor display

□ : [Off]





- Ensure that the camera's date/time is set beforehand (p. 22, Basic Guide p. 7).
- The date stamp cannot be deleted from the image data once it has been embedded.

## Setting the Display Overlays 🖸 🗖 🖼 🖳

Shooting Mode OM PAR REPORT

You can display vertical and horizontal grid lines, a 3:2 print area guide, or both on the LCD monitor while shooting to help check the position of your subject.

Grid Lines	Displays grid lines to divide the screen into 9 parts. Helps confirm the vertical and horizontal positioning of the subject.
3:2 Guide	Helps confirm the print area for a 3:2 print.* Areas outside the printable area are grayed out.
Both	Displays both the grid lines and the 3:2 guide simultaneously.

<sup>\*</sup> Images are still recorded at the standard aspect ratio of 4:3.

## 

See Menus and Settings (p. 19).

\* Default setting.





- The grid lines and 3:2 guide will not be recorded in the image.
- In '\( \overline{\ov

# Movie Shooting Shooting Mode

The following movie modes are available.

For information on the recording pixels and frame rate in each mode, refer to "Recording Pixels and Frame Rates" (p. 34).

#### Standard

You can select the recording pixels and record until the memory card is full (when a super high-speed memory card is used, such as the recommended SDC-512MSH).

The digital zoom can only be used with the m setting during shooting (p. 27).

Maximum Size: 1 GB/movie\*

#### **Compact**

Since there are few recording pixels and also the data size is small, this mode is convenient for sending movies as e-mail attachments or when the memory card capacity is low.

- · Maximum Clip Length: 3 minutes
- The recording time will differ according to the memory card used (p. 100).
- \* Even if the size of the movie data has not reached 1 GB, recording will stop when a shooting time of 1 hour has elapsed. Depending on memory card capacity and data write speed, recording may stop before the file size reaches 1 GB or the recording time reaches one hour.

## 1 FUNC. Menu ► □\* (Standard).

See Menus and Settings (p. 18).

- \* Default setting.
- Use the ← or → button to select a movie mode and press the FUNC./ SET button.
- In mode, you can change the recording pixels (p. 34).



#### 2 Shoot.

- Pressing the shutter button halfway automatically sets the exposure, focus and white balance settings.
- Pressing the shutter button fully starts recording video and sound simultaneously.
- During shooting, the recording time and [●Rec] appear on the LCD monitor.
- Pressing the shutter button fully again stops recording.
   Recording will stop automatically under the following circumstances.
  - When the maximum recording time elapses
  - When the built-in memory or memory card becomes full



- You are recommended to use a memory card that has been formatted in your camera to shoot movies (p. 25).
   The memory card supplied with the camera may be used without further formatting.
  - Be careful of the following while recording.
    - Do not touch the microphone (Basic Guide p. 1).
    - Do not press any buttons other than the shutter button. The sound that buttons make will be recorded in the movie.
    - The camera will automatically adjust the exposure and white balance to suit the shooting conditions during recording. Please note, however, that the sounds made by the camera automatically adjusting the exposure may also be recorded.
  - The focus and optical zoom settings remain fixed for subsequent frames at the values selected for the first frame.
  - Do not point the camera at the sun when shooting.



QuickTime is required to play back movies (Data type: AVI/ Compression method: Motion JPEG) on a computer (Windows 2000).

## **Changing Recording Pixels**

You can change the recording pixels when the movie mode is set to  $\square$  (Standard).



## **Recording Pixels and Frame Rates**

Frame rates indicate the number of frames recorded or played back each second. The higher the frame rate, the smoother the appearance of motion.

	Recording Pixels	Frame Rate
Standard     ■	640 x 480 pixels*	10 frames/sec.
Standard	320 x 240 pixels	30 frames/sec.
Compact	160 x 120 pixels	15 frames/sec.

<sup>\*</sup> Default setting.



- See Image Data Sizes (Estimated) (p. 101).
- See Memory Cards and Estimated Capacities (p. 100).

# 

The autofocus frame (AF frame) indicates the area used to set the focus. The following AF frame options are used according to the AiAF setting selected.

(No frame)	On	The camera detects the subject and highlights the AF frames, from 5 available points, that it will use to determine the focus.
	Off	The camera focuses using the center AF frame. This is convenient for ensuring that your intended subject is in focus and for composing images.

# 

See Menus and Settings (p. 19).

\* Default setting.





The AF frame appears as follows (when the LCD monitor is on) when the shutter button is pressed halfway.

Green : Shooting preparations complete
 Yellow : Focusing difficulty (AiAF set to [Off])
 No Display : Focusing difficulty (AiAF set to [On])

# Shooting Hard-to-Focus Subjects (Focus Lock) 回 回 欧果

It may be difficult to focus on the following types of subjects.

- Subjects with extremely low contrast to the surroundings
- Scenes with a mixture of near and far subjects
- Subjects with extremely bright objects at the center of the composition
- Subjects that are moving quickly
- Subjects through glass: Try to shoot as close to the glass as possible to reduce the chances of light reflecting back off the glass.
- 1 Aim the camera so that an object at the same focal distance as the main subject is centered in the viewfinder or in the AF frame displayed on the LCD monitor.
- Press the shutter button halfway to lock the focus.
- 3 Keep the shutter button pressed halfway while you recompose the image and press the shutter button all the way to shoot the image.



- When the focus lock is set and the LCD monitor is used to shoot, setting AiAF to [Off] (p. 35) makes shooting easier since the camera focuses using the center AF frame only.
- The AF frame will not appear in <sup>1</sup> mode.

# Switching between Metering Modes 🔤

Shooting Mode

See Menus and Settings (p. 18).

\* Default setting.



## **Metering Methods**

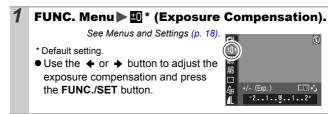
0	Evaluative	Appropriate for standard shooting conditions, including backlit scenes. The camera divides images into several zones for metering. It evaluates complex lighting conditions, such as the position of the subject, the brightness, the direct light, and the backlighting, and adjusts the settings to the correct exposure for the main subject.	
		Averages the light metered from the entire frame, but gives greater weight to the subject matter at the center.	
•	Spot	Meters the area within the spot AE point at the center of the LCD monitor. Use this setting when you want to set the exposure on the subject in the center of the monitor.	



Metering is fixed to Evaluative when shooting in long shutter mode.

# 

Adjust the exposure compensation to a positive value to avoid making the subject too dark when it is backlit or shot against a bright background. Adjust the exposure compensation to a negative value to avoid making the subject too bright in night shots or when shot against a dark background.

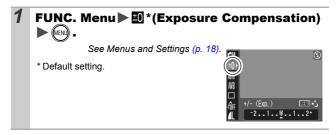


### To Cancel the Exposure Compensation

Restore the compensation value to [0].



You can set the shutter speed to a slow setting to make dark subjects appear brighter.





# Use the ← or → button to select the shutter speed ▶ ( ).

- The higher the value, the brighter the image and the lower the value, the darker the image.
- If you press the MENU button at this point, you will return to the Exposure Compensation setting screen.





- This setting is reset once the camera is turned off.
- The nature of CCDs is such that noise in the recorded image increases at long shutter speeds. This camera, however, applies special processing to images shot at shutter speeds slower than 1.3 seconds to eliminate the noise, thereby producing high-quality images. A certain amount of processing time, however, may be required before the next image can be shot.



- Use the LCD monitor to confirm that the image was recorded at the desired brightness.
- Please note that camera shake becomes a factor at low shutter speeds. Shoot with the camera attached to a tripod.
- Use of the flash may result in an over-exposed image. If this
  occurs, shoot with the flash set to .
- The following are unavailable in long shutter mode:
  - Exposure Compensation
  - Metering
  - ISO speed: Auto
  - Flash: Auto
  - Slow Synchro

# 

Normally, the (Auto) white balance setting selects an optimal white balance. When the (Auto) setting cannot produce natural looking colors, change the white balance using a setting appropriate for the light source.

# **1** FUNC. Menu ► III \* (Auto).

See Menus and Settings (p. 18).

- \* Default setting.
- Use the ◆ or → button to select a white balance setting and press the FUNC./SET button.



### **White Balance Settings**

AWB	Auto Settings are automatically set by the camera.	
	Day Light For recording outdoors on a bright day.	
2	For recording under overcast, shady or twilight skies.	
٨	Tungsten For recording under tungsten and bulb-type 3-wavelength fluorescent lighting.	
775	Fluorescent For recording under warm-white, cool-white or warm-white (3-wavelength) fluorescent lighting.	
<b>%</b>	Fluorescent H For recording under daylight fluorescent, or daylight fluorescent-type 3-wavelength fluorescent lighting.	
	Custom	For recording with the optimal white balance data memorized in the camera from a white-colored object, such as white paper or cloth.



The white balance setting cannot be adjusted when so or is selected for My Colors.

## **Using the Custom White Balance**

You can set a custom white balance to obtain the optimal setting for the shooting conditions by having the camera evaluate an object, such as a piece of white paper or cloth, or a photo-quality gray card that you wish to establish as the standard white color.

In particular, take a custom white balance reading for the following situations that are difficult for the (Auto) setting to detect correctly.

- Shooting close-ups (Macro)
- Shooting subjects of monotone color (such as sky, sea or forest)
- Shooting with a particular source of light (such as a mercury-vapor lamp)

# 

See Menus and Settings (p. 18).

\* Default setting.



- 2 Aim the camera at a piece of white paper or cloth and press .
  - If you are viewing it with the LCD monitor, ensure that the center frame is completely filled with the white image. If you are using the optical viewfinder, ensure that the entire field is filled. However, the center frame does not display when using the digital zoom or



 You are recommended to set the shooting mode to and the exposure compensation setting to [±0] before setting a custom white balance.

The correct white balance may not be obtained when the exposure setting is incorrect (image appears completely black or white).

- Shoot with the same settings as when reading the white balance data. If the settings differ, the optimal white balance may not be set.
   In particular, the following should not be changed.
  - ISO Speed
  - Flash

Setting the flash to on or off is recommended. If the flash fires when reading the white balance data with the flash set to (Auto), make sure that you also use the flash when you shoot.

# 

You can change the look of an image when it is shot.

€0FF	My Colors Off	Records normally with this setting.	
₽v	Vivid	Emphasizes the contrast and color saturation to record bold colors.	
$\theta_{N}$	Neutral Tones down the contrast and color saturation to record neutral hues.		
£Se	Sepia	pia Records in sepia tones.	
€BW	B/W	Records in black and white.	
£C	Custom         Allows you to adjust the contrast/sharpness/color saturation for shooting.		

## **1** FUNC. Menu ► 🚮 \* (My Colors Off).

See Menus and Settings (p. 18).

- \* Default setting.
- Use the ← or → button to select a My Colors mode.



#### 2 Shoot.

● **G** Mode

See "Setting the Camera to a Custom Color Mode" (p. 44).

■ Modes other than ♣

Press the **FUNC./SET** button. The display will return to the shooting screen and you can shoot.

# Setting the Camera to a Custom Color Mode

1 (Custom Color) ► (MIN)

See Menus and Settings (p. 18).



- Use the ★ or ★ button to select [Contrast], [Sharpness] or [Saturation] and the ★ or → button to adjust it.
  - The altered color will display.



Select an item Adjust

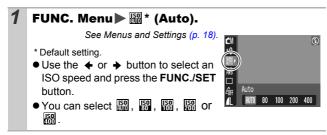
3 (FUNC)

This completes the setting.

If you press the **MENU** button at this point, you will return to the screen where you can select a My Colors mode.



Raise the ISO speed to use a fast shutter speed when you wish to reduce the effects of camera shake or avoid blurry subjects, or to turn the flash off when shooting in a dark area.





- The actual ISO speed used when shooting will display in the playback information when the option is used to shoot.
- Is not available in long shutter mode.

#### 

You can create a new folder at any time and the recorded images will be automatically saved to that folder.

Create New Folder	Creates a new folder the next time you shoot images. To create an additional folder, insert the check mark again.
Auto Create	You can also specify a date and time if you wish to create a new folder using a shooting time after the specified date and time.

See Menus and Settings (p. 19).

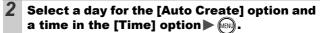


#### Creating a Folder the Next Time You Shoot.

- 2 Use the ← or → button to check mark [Create New Folder] ▶ ((iii)).
  - displays in the LCD monitor. The symbol will cease to display after the new folder is created.



# Setting the Day or Time for Automatic Folder Creation.



 displays when the specified time arrives. The symbol will cease to display after the new folder is created.





Up to 2000 images can be saved into one folder. A new folder will automatically be created when you record more than that number even if you are not creating new folders.

# Resetting the File Number 🖸 🔤 🖼 🖳 🖪

The images you shoot are automatically assigned file numbers. You can select how the file number is assigned.

# 

See Menus and Settings (p. 19).

\* Default setting.



#### **File Number Reset Function**

Continuous	A number one higher than the last one recorded is assigned to the next image. This is convenient for managing all your images together on a computer because you avoid file name duplication when changing folders or memory cards.*  * When a blank memory card is used. If a memory card with recorded data is used, the 7-digit number for the last recorded folder and image is compared with the last one on the card, and the larger of the two is utilized as the basis for new images.
Auto Reset	The image and folder number are reset to the starting value (100-0001).* This is convenient for managing images on a folder-by-folder basis. * When a blank memory card is used. If a memory card with recorded data is used, the number following the 7-digit number for the last recorded folder and image on the card is utilized as the basis for new images.

#### **File and Folder Numbers**

Recorded images are assigned consecutive file numbers starting with 0001 and ranging up to 9999, while folders are assigned numbers starting with 100 and ranging up to 999. Up to 2,000 images can be saved into a single folder.

	New Folder Created	Memory Card Exchanged for Another	
Continuous	Memory Card 1	Memory Card 1 Memory Card 2	
Auto Reset	Memory Card 1	Memory Card 1 Memory Card 2	

- Images may be saved to a new folder when there is insufficient free space even if the total number of images in a folder is less than 2,000 because the following types of images are always saved together into the same folder.
  - Images from continuous shooting
  - Self-timer images (custom)
- Images cannot be played back when the folder numbers are duplicated or image numbers are duplicated within folders.
- Please refer to the Software Starter Guide for information regarding folder structures or image types.

# Playback/Erasing

Please also see the Basic Camera User Guide (p. 18).

# **Q** Magnifying Images



### **1** Press the Q button.

- Pressing the Q button makes The appear, allowing you to magnify images up to a factor of 10. Pressing the button zooms out from the image.
- Pressing the 

   or 
   button moves to
   the previous or next image in the
   magnified state.



Approximate Location of the Displayed Area

- Press and change the position of the displayed portion with the ♠, ♦, ♠ or ♦
  - The a circle icon will display and the display will change to the display position change mode. Pressing the FUNC./SET button again cancels the display position change mode.

# To Cancel the Magnified Display Press the MENU button



Movie frames and index playback images cannot be magnified.

# Viewing Images in Sets of Nine (Index Playback)

- 1 Hold down (SET).
  - Up to nine images can be viewed at once in index playback.
  - Use the ♠, ◆, ◆ or ▶ button to change the image selection.



To Return to Single Image Playback Hold down the FUNC./SET button.

# **Viewing Movies**





Movies cannot be played in the index playback mode.

## **1** Display a movie and press



# 2 Select ☐ (Play) and press (SET)

- The movie will pause if you press the FUNC./SET button during playback. It will resume when you press the button again.
- When playback ends, the movie stops at the last frame displayed. Press the FUNC./SET button to display the movie control panel.

#### **Operating the Movie Control Panel**

- Ends playback and returns to single image playback
- Prints (An icon will display when a printer is connected. See the Direct Print User Guide for details.)
- Play
- Slow Motion Playback (You can use the button to slow down or the button to speed up playback.)
- Displays the first frame
- Previous Frame (Rewinds if the **FUNC./SET** button is held down.)
- Next Frame (Fast Forwards if the **FUNC./SET** button is held down.)
- Displays the last frame



- Use the television's controls to adjust the volume when playing a movie on a TV set (p. 62).
- The sound cannot be played in slow motion playback.

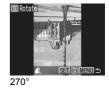
# **Rotating Images in the Display**

▶

Images can be rotated clockwise 90° or 270° in the display.







Original

See Menus and Settings (p. 19).



- 2 Use the ← or → button to select an image to rotate and press ( to rotate it.
  - Cycle through the 90°/270°/original orientations with each press of the FUNC./SET button.
  - This also can be set in the index playback mode.



- Movies cannot be rotated
- When images are downloaded to a computer, the orientation of images rotated by the camera will depend upon the software used to download the images.

# Attaching Sound Memos to Images 🖸

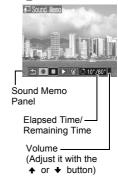
In playback mode (including single image playback and index playback), you can attach sound memos (up to 1 min.) to an image. The sound data is saved in the WAVE format.

1 □ (Play) Menu ▶ □.

See Menus and Settings (p. 19).



- 2 Use the ← or → button to select an image to which to attach a sound memo and press
  - The sound memo control panel will display.
- 3 Select ☐ (Record) and press (REC)
  - The elapsed time and the remaining time display.
  - Pressing the FUNC./SET button pauses the recording. Pressing it again resumes recording.
  - Up to 1 minute of recordings can be added to any one image.



#### **Sound Memo Panel**

•	Exit
	Record
	Pause

Play
Erase

Select [Erase] in the confirmation screen and press the **FUNC**./ **SET** button.



- You cannot attach sound memos to movies.
- Sound memos for protected images cannot be erased.

# Automated Playback (Slide Shows)

Automated playback of memory card images.

\* Image settings for slide shows are based on the Digital Print Order Format (DPOF) standard.

	All Images Plays all images on a memory card in order	
	Date	Plays images bearing a specified date in order.
	Folder Plays images in a specified folder	
$\overline{A}$	Movies	Plays movie files only, in order.
•	Stills	Plays still images only, in order.
<b>*1</b> − <b>*3</b>	Custom 1–3	Plays the images selected for each slide show, Custom 1, Custom 2 or Custom 3, in order (p. 59).

# **1** □ (Play) Menu ► 🗟.

See Menus and Settings (p. 19).



Effect

Slide Show

# 2 Select 凰, ⊞, 🗀, 🗔, 🖸 or 🚹–웹.

- III, : select a date or folder to be played back (p. 58).
- 1, 1, 1, is select the images to be played back (p. 59).
- If you want to add a transition effect to play back images, use the ◆ button to select [Effect] and choose the type of effect with the ◆ or ◆ button (p. 57).

# 3 Select [Start] and press

- The following functions are available during slide shows.
  - Pausing/resuming the slide show: press the FUNC./SET button
  - Fast forwarding/rewinding the slide show: press the ← or → button (continue to hold the button to switch between images more rapidly)



- Stopping the slide show: press the **MENU** button.

#### **Transition Effects**

You can select the transition effect used when one image is replaced by another.

- Standard display.
  - The new image gradually brightens as it moves upward from the bottom.
- The new image first appears in a cross shape and gradually expands to display the full image.
- Portions of the new image move horizontally, then the image expands to display the full image.



## Select a date/folder to play back (⊞/□)

- **1** Select ⊞ or □ and press ∰.
- 2 Use the ← or → button to select a date/ folder to play back and press the button.





Folder

## Selecting Images for Playback (1 - 3)

Select only the images that you wish to play back and save them as a slide show (Custom 1, 2 or 3). Up to 998 images can be selected. They will be played back in their order of selection.

- 1 Select 11, 12 or 13 and press
  - Only the incon will display at first. When you set
     the icon will change to incomplete will display.
     will display.
     will change in the same way when they are set
- 2 Use the ← or → button to move between images for playback and press
  - (SEF) to select or deselect them.
  - You can also select images in the index playback mode.
  - Pressing the MENU button completes the setting.

Check mark indicating selection

Number indicating the selection order





Selecting All Images

- 1 After selecting 1 −3 in step 1, use the ◆ button to select [Mark all] and press the FUNC./ SET button.
- 2 Use the ♠ button to select [Mark all], press the FUNC./SET button.
- 3 Use the → button to select [OK] and press the FUNC./SET button.

To deselect all images, select [Reset].

## Adjusting the Play Time and Repeat **Settings**

Play Time

Sets the duration that each image displays. Choose between 3\*-10 seconds, 15 seconds and 30 seconds. Displaying time can vary slightly depending on the image.

- \* Default setting.
- Repeat

Sets whether the slide show stops when all the slides have been displayed or continues until stopped.

1 Select [Set up] and press (FUNC)



- 2 Select [Play Time] or [Repeat] and then the desired option.
  - Pressing the MENU button cancels the setting.



# **Protecting Images**



You can protect important images and movies from accidental erasure.

See Menus and Settings (p. 19).



- 2 Use the ← or → button to select an image to protect and press ( ).
  - Pressing the FUNC./SET button again cancels the setting.
  - You can also protect images in the index playback mode.



Protection Icon

## Viewing Images on a TV set



You can play back images on a television with the supplied AV cable.

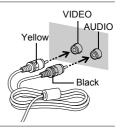
#### Turn off the camera and the TV.

# 2 Connect the AV cable to the camera's A/V OUT terminal.

 Open the terminal cover by slipping a fingernail under the edge and plug the AV cable in all the way.



3 Plug the other ends of the AV cable to the VIDEO IN and AUDIO IN jacks on the TV.



- **4** Turn on the TV and switch it to video mode.
- 5 Turn on the camera.



- You can also use the TV as the display in the shooting mode.
- The video output signal can be switched (NTSC or PAL) to accommodate different regional standards (p. 23). The default setting varies between regions.
- NTSC: Japan, U.S.A., Canada, Taiwan and others
- PAL: Europe, Asia (excluding Taiwan), Oceania and others If the video system is set incorrectly, the camera output may not display properly.

# **Erasing All Images**





- Note that erased images cannot be recovered. Exercise adequate caution before erasing an image.
- Protected images cannot be erased with this function.
- **1** □ (Play) Menu ► ...

See Menus and Settings (p. 19).



- 2 Select [OK] and press
  - To exit instead of erasing, select [Cancel].



Please format the memory card when you want to erase not only image data but also all the data contained on the memory card (p. 25).

# **Print Settings/Transfer Settings**

## **Setting the DPOF Print Settings**



You can select images on a memory card for printing and specify the number of print copies in advance using the camera. The settings used on the camera comply with the Digital Print Order Format (DPOF) standards. This is extremely convenient for printing on a direct print compatible printer, or for sending the images to a photo developing service that supports DPOF.

The  $\triangle$  icon may display for a memory card with print settings set by a different DPOF-compliant camera. These settings will be overwritten by those set by your camera.

#### Single Images



See Menus and Settings (p. 19).

 Selecting [Clear All Selections] cancels all print settings.



# 2 Use the ← or → button to select images for printing.

- Selection methods differ for the Print Type settings (p. 66).
  - **(Standard)**/ **(Both)**Select an image, press the **FUNC**./ **SET** button and use the **↑** or **♦**button to select the number of print copies (up to 99).
  - Image: (Index)
    Select an image and press the FUNC./SET button to select or deselect it.
- You can also select images in the index playback mode.
- If the camera is connected to a printer,
  the □ → button will light in blue while images are being selected. At this time, press the □ → button, confirm that [Print] is selected, and when the FUNC./SET button is pressed, printing will begin.

# Number of Print Copies



#### Index Print Selection



## All the Images on a Memory Card

## 



Select All Image

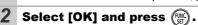
Print Settings

See Menus and Settings (p. 19).

• One copy of every image will be set

- to print.

   Selecting [Clear All Selections]
- Selecting [Clear All Selections] cancels all print settings
- When the camera is connected to a printer, the كي button will light blue. At this time, press the كي button, confirm that [Print] is selected, and when the FUNC./SET button is pressed, printing will begin.





- The output of some printers or photo developing services may not reflect the specified print settings.
  - Print settings cannot be set for movies.



- Images are printed in order according to the file number.
  - A maximum of 998 images can be selected.
  - When [Print Type] is set to [Both], the number of copies can be set. When it is set to [Index], the number of copies cannot be set (only one copy will be printed).

## **Setting the Print Style**

After setting the print style, select the images for printing. The following settings can be selected.

\*Default setting

	■ Standard*	Prints one image per page.
Print Type	<b>Ⅲ</b> Index	Prints the selected images together at a reduced size in an index format.
	<b>■ ■</b> Both	Prints the images in both the standard and index formats.
Date (On/Off*)		Adds the date to the print.
File No. (On/Off*)		Adds the file number to the print.
Clear DPOF data (On*/Off)		Clears all print settings after the images print.



## (Print) Menu ► [Print Settings] ►



See Menus and Settings (p. 19).



2 Use the ★ or ★ button to select [Print Type], [Date], [File No.], [Clear DPOF data] and then use the ★ or → button specify the settings.



- The Date and File No. settings change according to the Print Type as follows.
  - Index
     [Date] and [File No.] cannot be set to [On] at the same time.
- Standard or Both
  [Date] and [File No.] can be set to [On] at the same time,
  however, the printable information may vary between
  printers.
- Images dated using (Postcard Date Imprint mode)
   (p. 30) are always printed with the date, regardless of the [Date] setting. As a result, if [Date] is also set to [On], the date will end up being printed twice on these images.
- Dates print in the style specified in the [Date/Time] menu (p. 22, Basic Guide p. 7).

# **Setting the DPOF Transfer Settings** <a href="#">D</a>

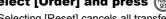
You can use the camera to specify settings for images before downloading to a computer. Refer to the *Software Starter Guide* for instructions on how to transfer images to your computer. The settings used on the camera comply with the Digital Print Order Format (DPOF) standards.

The  $\triangle$  icon may display for a memory card with transfer settings set by a different DPOF-compliant camera. These settings will be overwritten by those set by your camera.



#### Single Images

2 Select [Order] and press (FIRE)



 Selecting [Reset] cancels all transfer order settings.



3 Use the 

or 

button to select an image to transfer and press

- Pressing the FUNC./SET button again deselects the setting.
- You can also select images in the index playback mode.



### All the Images on a Memory Card

Select [Mark all] and press



• Selecting [Reset] cancels all transfer order settings.



Select [OK] and press



- Images are transferred in order according to the file number
- A maximum of 998 images can be selected.

# **Troubleshooting**

#### Camera

•		
Camera will not operate.		
Power is not turned on.	<ul> <li>Press the power button (Basic Guide p. 8).</li> </ul>	
Memory card slot/battery cover is open.	<ul> <li>Confirm that the memory card slot /battery cover is securely closed (Basic Guide p. 5).</li> </ul>	
Batteries are loaded in the wrong direction.	<ul> <li>Reload the batteries in the correct direction (Basic Guide p. 5).</li> </ul>	
Batteries are not the right type.	<ul> <li>Use only unused AA-size alkaline batteries or Canon AA-size NiMH batteries (p. 83).</li> </ul>	
Battery charge is low and the camera will not operate. ("Change the batteries" message displays).	<ul> <li>Replace the camera batteries with 2 unused or fully charged batteries (p. 83).</li> <li>Use the AC Adapter Kit ACK800 (sold separately) (p. 89).</li> </ul>	
Poor contact between camera and battery terminals.	<ul> <li>Wipe the battery terminals with a clean dry cloth.</li> <li>Reload the batteries several times.</li> </ul>	

# When the power is turned on

# "Card locked!" message appears.

The SD memory card's or SDHC memory card's write protect tab is set to "Write protect".

 When recording to, erasing from or formatting the memory card, slide the write protect tab upward (p. 85).

# The Date/Time menu appears.

The lithium date/time battery charge is depleted.

• Replace the lithium date/time battery (p. 92).

## **LCD** monitor

### Nothing displays.

The LCD monitor is set to not display.

 Press the DISP. button to turn on the LCD monitor (p. 12).

#### The display darkens.

The image in the LCD monitor will darken in strong sunlight or bright light.

 This is a normal occurrence in devices containing CCDs and does not constitute a malfunction. This image will not be recorded when shooting still photos, but it will be recorded when shooting movies.

### Display flickers.

Display flickers when shot under fluorescent lighting.

 This is not a camera malfunction (flickering recorded in movies, but not in still images).

# A bar of light (red, purple) appears on the LCD monitor.

Sometimes appears when shooting a bright subject, such as the sun or other light source.

 This is a normal occurrence in devices containing CCDs and does not constitute a malfunction.
 This bar of light will not be recorded when shooting still photos, but it will be recorded when shooting movies.

## appears.

A slow shutter speed has likely been selected because of insufficient lighting.

- Raise the ISO speed
- Set the flash to a setting other than (Flash Off) (Basic Guide p. 13).
- Set the self-timer and secure the camera to something, such as a tripod.

#### A appears.

This displays when using a memory card that has print settings or transfer settings set by other DPOF-compliant cameras.

 These settings will be overwritten by those set by your camera (p. 64).

# Noise displays./Subject's movements are irregular.

Camera automatically lightened the image displayed on the LCD monitor to make it easier to see when shooting in a dark area (p. 12).

 There is no effect on the recorded image.

## **Shooting**

Camera will not record.			
Mode dial is set to ► (playback).	● Turn the mode dial to ♠ (Auto), ♠M (Manual), SCN (Special Scene) or '☴ (Movie) (Basic Guide p. 8).		
Flash is charging.	<ul> <li>When the flash is charged, the indicator will light orange.</li> <li>Shooting is now possible (Basic Guide p. 4).</li> </ul>		
Memory card is full.	<ul> <li>Insert a new memory card (Basic Guide p. 5).</li> <li>If required, download the images to a computer and erase them from the memory card to make space.</li> </ul>		
Memory card is not formatted correctly.	<ul> <li>Format the memory card (p. 25).</li> <li>If reformatting does not work, the memory card logic circuits may be damaged. Consult the nearest Canon Customer Support Help Desk.</li> </ul>		

SD memory card or SDHC memory card is write protected.	• Slide the write protect tab upward (p. 85).	
Image Seen in viewf	inder vs. recorded image	
Usually the recorded image contains more of the scene than is seen in the viewfinder.	Confirm the scope of the captured image in the LCD monitor. Since the difference is accentuated in the Macro and Super Macro modes, use the LCD monitor for close-ups (p. 12).	
Image is blurred or out of focus.		
The camera moves when the shutter button is pressed.	• Confirm the procedures in " appears" (p. 70).	
AF-assist Beam is set to [Off].	• In dark places where it is difficult for the camera to focus, the AF-assist Beam will emit to assist focusing. As the AF-assist Beam will not function when turned off, set it [On] to activate it (p. 20). Take care not to obstruct the AF-assist Beam with your hand when used.	
Subject is out of focal range.	● Shoot with the subject at the	

The subject is hard to focus • Use the focus lock to shoot (p. 36).

correct focusing distance (p. 96).

on.

Subject in recorded	image is too dark.
Insufficient light for shooting	● Set the flash to (Flash on) (Basic Guide p. 13).
The subject is underexposed because the surroundings are too bright.	<ul> <li>Set the exposure compensation to a positive (+) setting (p. 38).</li> <li>Use the spot metering function (p. 37).</li> </ul>
Subject is too far away for flash to reach.	<ul> <li>Shoot within correct flash range of the subject when using the built-in flash (p. 96).</li> <li>Raise the ISO speed and then shoot (p. 45).</li> </ul>
Subject in recorded image flashes white	image is too bright, or
Subject is too close, making the flash too strong.	<ul> <li>Shoot within correct flash range of the subject when using the built-in flash (p. 96).</li> </ul>
The subject is overexposed because the surroundings are too dark.	<ul> <li>Set the exposure compensation to a negative (–) setting (p. 38).</li> <li>Use the spot metering function (p. 37).</li> </ul>
Too much light is shining directly into the camera, or is being reflected off the subject.	Change the shooting angle.
Flash is set to on.	● Set the flash to (Flash off) (Basic Guide p. 13).
Image contains nois	е.
ISO speed is too high.	Higher ISO speeds and

appear.

image noise. For higher image quality, use as low an ISO speed as possible (p. 45).

In 弘, 愛 and modes, the ISO speed increases and noise can

#### 73

#### White dots appear on the image.

Light from the flash has reflected off dust particles or insects in the air.

This is particularly noticeable when shooting at wide angle settings.

 This is a phenomenon that occurs with digital cameras and does not constitute a malfunction.

#### Eyes appear red.

Light is reflected back from the eves when the flash is used in dark areas

- Set the (red-eye reduction) function to [On] and shoot (Basic Guide p. 14). For this mode to be effective, the subject must be looking right at the red-eye reduction lamp. Try asking them to look directly at the lamp.
- Even better results can be obtained by increasing the lighting in indoor settings or approaching closer to the subject. The shutter will not activate for approximately 1 second after the red-eye reduction lamp fires in order to improve the effect.

#### Continuous shooting slows down.

The memory card's performance has dropped.  To enhance the continuous shooting performance, you are recommended to low level format the memory card in the camera after you save all its images to your computer (p. 25).

#### Recording images to memory card takes a long time.

in another device.

Memory card was formatted • Use a memory card formatted in your camera (p. 25).

#### Lens will not retract.

Memory card slot/battery cover was opened with power on.

 After closing the memory card slot/ battery cover, turn the power on then back off (Basic Guide p. 5).

## **Shooting movies**

# The recording time may not display properly or shooting may stop unexpectedly.

The following types of memory cards are used.

- Slow recording cards.
- Cards formatted on a different camera or a computer.
- Cards which have had images recorded and erased repeatedly.
- Although the recording time may not display properly during shooting, the movie will be recorded correctly on the memory card. Recording time will display properly if you format the memory card in this camera (excluding slow recording memory cards) (p. 25).

# "!" displayed on the LCD monitor in red and shooting automatically stopped.

There is insufficient free space in the camera's built-in memory.

- Try the following procedures.
  - Format the card with a low level format before shooting (p. 25)
  - Lower the recording pixels (p. 34)
  - Use a high-speed memory card (SDC-512MSH, etc.)

#### Zoom does not operate.

The zoom was operated while a movie was being recorded.

 Operate the zoom before shooting in movie mode (*Basic Guide* p. 12). The digital zoom, however, can be used during recording (Standard m mode only).

## **Playback**

#### Cannot play back.

You attempted to play back images shot with another camera or images edited with a computer.

- a computer or file location was changed.
- Computer images that cannot be played back may play back if they are added to the camera using the supplied software program ZoomBrowser EX or ImageBrowser.
- File name was changed with |● Set the file name or location on the file format/structure of the camera. (Refer to the Software Starter Guide for details).

#### Movies do not play back correctly.

Movies recorded with high recording pixels and frame rates may momentarily stop playing if played on slow reading memory cards

You may experience frame dropping and audio breakup when playing back a movie on a computer with insufficient system resources

#### Reading images from memory card is slow.

Memory card was formatted in another device.

 Use a memory card formatted in your camera (p. 25).

## Battery

<b>Batteries consumed</b>	quickly.
Batteries are not the right type.	<ul> <li>Use only unused AA-size alkaline batteries or Canon AA-size NiMH batteries (p. 83).</li> </ul>
Battery capacity drops due to low ambient temperatures.	<ul> <li>If shooting in a cold location, warm the batteries such as by placing them in your pocket before using them.</li> </ul>
Battery terminals are dirty.	<ul> <li>Wipe the terminals well with a dry cloth before use.</li> <li>Reload the batteries several times.</li> </ul>
If using Canon AA-si	ze NiMH batteries
As the batteries have not been used for over a year, their recharging capacity has decreased.	<ul> <li>Their charging performance should return to normal after fully recharging and depleting them over several times.</li> </ul>
Battery life has been exceeded.	<ul> <li>Replace both batteries with new ones.</li> </ul>

## **TV** monitor output

Image is distorted or not showing on TV monitor.			
Incorrect video system setting.	<ul> <li>Set the video system to the appropriate setting, NTSC or PAL, for your TV (p. 23).</li> </ul>		

# Printing with a direct print compatible printer

Cannot print	
The camera and printer are not properly connected.	<ul> <li>Securely connect the camera and printer with the specified cable.</li> </ul>
The printer power is not turned on.	● Turn on the printer power.
The print connection method is not correct.	● In the 1 (Set up) menu, select

## **List of Messages**

The following messages may appear on the LCD monitor during shooting or playback. Please refer to the *Direct Print User Guide* for the messages that display during a printer connection.

#### Busy...

Image is being recorded to the memory card, or the playback mode is starting up.

#### No memory card

You turned on the camera without a memory card installed, or with a memory card installed in the wrong orientation (Basic Guide p. 5).

#### Card locked!

The SD memory card or SDHC memory card is write-protected.

#### Cannot record!

You attempted to shoot an image without a memory card installed, with a memory card installed in the wrong orientation, or attempted to attach a sound memo to a movie.

#### Memory card error

There may be something wrong with the memory card. By formatting the malfunctioning memory card with the camera, you may be able to continue using it. However, if this error message appears even when using the supplied memory card, contact your Canon Customer Support Help Desk as there may be a problem with the camera.

#### Memory card full

Memory card is full of images and no more can be recorded or saved. Or no more image settings or sound memos can be recorded.

#### Naming error!

The image file could not be created because there is an image with the same name as the folder that the camera is attempting to create, or the highest possible file number has already been reached. In the Set up menu, set [File Numbering] to [Auto Reset]; alternatively, save all the images you wish to retain onto a computer, then reformat the memory card. Please note that formatting will erase all the existing images and other data.

#### Change the batteries

Battery charge is insufficient to operate the camera. Replace both batteries immediately with unused AA-size alkaline batteries or fully charged Canon AA-size NiMH batteries.

#### No image

No images recorded on memory card.

#### Image too large

You attempted to play back an image larger than 4992 x 3328 pixels or with a large data size.

#### Incompatible JPEG

You attempted to play back an incompatible JPEG image (edited with a computer, etc.).

#### **RAW**

You attempted to play back a RAW image.

#### **Unidentified Image**

You attempted to play back an image with corrupted data, an image with a recording type specific to another manufacturer's camera, or an image that has been downloaded to a computer and altered.

#### Cannot magnify!

You attempted to magnify an image recorded in a different camera or data type, an image edited with a computer, or a movie.

#### **Cannot rotate**

You attempted to rotate an image recorded in a different camera or data type, an image edited with a computer, or a movie.

#### Incompatible WAVE

A sound memo cannot be added to this image since the data type of the existing sound memo is incorrect, or the sound memo cannot be played back.

#### Cannot transfer!

When transferring images to your computer using the Direct Transfer menu, you attempted to select an image with corrupted data or an image taken with another camera. You may have also attempted to select a movie when [Wallpaper] was selected in the Direct Transfer menu.

#### Protected!

You attempted to erase a protected image, movie or sound memo.

#### Too many marks

Too many images have been marked with print settings or transfer settings. Cannot process any more.

#### Cannot complete!

Could not save a part of the print, transfer or slide show settings.

#### Unselectable image

You attempted to set the print settings for a non-JPEG image.

#### Communication error

The computer was unable to download the image due to the large amount of images (approx. 1000) stored on the memory card

#### Lens error, restart camera

An error was detected while the lens was in motion, and the power has been automatically turned off. This error can occur if you hold the lens while it is in motion or you operate it in a location with excessive dust or sand in the air. Try turning the power back on, and resume shooting or playback. If this message continues to display, contact your Canon Customer Support Help Desk as there may be a problem with the lens.

#### Exx

(xx: number) Camera detected error. Turn the power off and then back on, then shoot or play back. A problem exists if the error code reappears. Note the number and contact your Canon Customer Support Help Desk. If an error code displays directly after taking a picture, the shot may not have been recorded. Check image in playback mode.

## **Appendix**

## **Battery Handling**

#### **Battery Charge**

The following icon and message will display.



Battery charge is low. If using the camera for an extended period, replace the batteries as soon as possible.

#### Change the batteries

Batteries are depleted and the camera can no longer operate. Replace the batteries immediately.

#### **Battery Handling Precautions**

- This camera uses AA-size alkaline batteries or Canon AAsize NiMH batteries (sold separately).
  - While it is possible to use AA-size nickel-cadmium batteries, performance is unreliable and their use is not recommended.
- Since the performance of alkaline batteries may differ according to brand, the operating time of the batteries you purchase may not be as long as the batteries that came with the camera.
- When using the camera under low temperature conditions or over long periods, you are recommend to use of Canon AA-size NiMH batteries (sold separately).
  - Camera operating time may shorten at low temperatures when alkaline batteries are used. Also due to their specifications, alkaline batteries may expire faster than NiMH batteries.
- Never mix unused and partially used batteries.
  The partially used batteries may leak.
- Do not install the batteries with their terminals (⊕ and ⊝) reversed.
- Do not mix batteries of different types or from different manufacturers.

 Before installing the batteries, wipe the battery terminals well with a dry cloth.

If the battery terminals are soiled with oil from one's skin or other dirt, the number of recordable images may be considerably diminished, or the amount of time the camera can be used may be reduced.

- At low temperatures, battery performance may be reduced and the low battery icon ( ) may appear earlier than usual. Under these conditions, restore the battery performance by warming it in a pocket immediately before use.
- Do not put the batteries into a pocket together with metallic items such as a key ring.

The batteries may be short circuited.

• When not using the camera for long periods, remove the batteries from the camera and store them separately. If the batteries are left inside the camera, the camera may become damaged from battery leakage.

#### **!** WARNING

Never use damaged batteries or batteries whose outer seal is completely or partially missing or peeled off, as there is risk that such batteries may leak, overheat, or burst. Always check the seals on store-bought batteries before loading them, as some batteries may come with defective seals. Do not use batteries with defective seals.

#### Never use batteries that look like this.



Batteries with all or part of the seal (electrical insulation sheath) peeled off.



The positive electrode (plus terminal) is flat.



The negative terminal is correctly formed (protruding from the metal base), but the seal does not extend up over the edge of the metal base.

## **Handling the Memory Card**

#### SD memory card or SDHC memory card Write Protect Tab



#### **Cautions When Handling**

- Memory cards are high-precision electronic devices. Do not bend them, apply force to them, or subject them to shocks or vibration.
- Do not attempt to disassemble or alter the memory card.
- Do not allow dirt, water or foreign objects to contact the terminals on the back of the card. Do not touch the terminals with your hands or metal objects.
- Do not peel away the original label on the memory card or cover it with another label or sticker.
- When writing on the memory card, do not use a pencil or ball-point pen. Only use a soft point pen (e.g. felt-tip pen).
- Do not use or store memory cards in the following locations.
  - · Locations subject to dust or sand
  - Locations subject to high humidity and high temperatures
- Since some or all of the data recorded on the memory card may be corrupted or erased by electrical noise, static electricity, camera or card malfunction, making a backup copy of important data is recommended.

#### **Formatting**

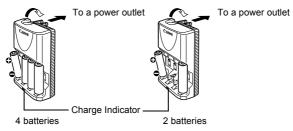
- Please note that formatting (initializing) an memory card erases all data, including protected images.
- You are recommended to use memory cards that have been formatted in your camera.
  - The card supplied with the camera may be used without further formatting.
  - When the camera is malfunctioning, a corrupted memory card might be the cause. Reformatting the memory card may solve the problem.
  - When a non-Canon brand memory card is malfunctioning, reformatting it may solve the problem.
  - Memory cards formatted in other cameras, computers, or peripheral devices may not operate correctly in this camera.
     When that happens, reformat the memory card with this camera.
- If formatting in the camera does not work properly, turn the camera off and re-insert the memory card. Then turn the camera back on and format again.
- Be careful when transferring or disposing of a memory card. Formatting or erasing the data on a memory card merely changes the file management information on the card and does not ensure that its contents are completely deleted.

When disposing of a memory card, take precautions, such as physically destroying the card, to prevent personal information leaks.

## **Using the Power Kits (Sold Separately)**

# Using Rechargeable Batteries (Battery and Charger Kit CBK4-300)

This kit includes a battery charger and four rechargeable AA-size NiMH (nickel metal hydride) batteries. Charge batteries as shown below. Recharging is also possible using two batteries.



- After inserting the batteries, plug the charger (CB-5AH) into an outlet, or attach the power cord to the charger (CB-5AHE, not shown) and plug the other end into an outlet.
- Do not insert and charge additional batteries once charging has begun.
- The charge indicator blinks while charging, then remains lit when charging is finished.



- The CB-5AH/CB-5AHE battery charger can only be used to charge Canon AA-size NiMH batteries NB-3AH and NB-2AH. Please do not attempt to charge other type of battery.
- Do not mix batteries with different purchase dates or different charge states. When recharging batteries, always recharge both of them at the same time.
- Do not attempt to recharge fully charged batteries, as doing so may reduce or impair battery performance. Also, do not charge batteries for more than 24 consecutive hours.
- Do not recharge batteries in enclosed areas that tend to retain heat
- Do not recharge the batteries until the LCD monitor displays the "Change the batteries" message. Repeatedly recharging batteries before they are depleted may cause batteries to lose capacity.

- Wipe the battery terminals well with a dry cloth in the following situations, as the terminals may be soiled with oil from one's skin or other dirt:
  - If the battery usage time has considerably diminished
  - If the number of recordable images has considerably diminished
  - When charging the batteries (insert and remove the batteries two or three times before charging)
  - When charging completes in a space of a few minutes (the battery charger indicator remains lit)
- You may not be able to fully charge the batteries due to their specifications right after purchase or after long periods of nonuse. If this happens, after fully charging them, use the batteries until their charge is depleted. After doing this several times, battery performance will be restored.
- If you store batteries for a long period of time (about 1 year), it is recommended that you deplete the batteries in the camera and to then store them at room temperature (0 to 30°C/32 to 90°F) in low humidity. Storing them in a fully charged condition can shorten their lifespan or degrade their performance.
  - Again, if you do not use batteries for more than 1 year, fully charge them once a year and deplete them in the camera before storing them.
- If the battery usage time has become considerably low despite wiping the terminals and charging them until the battery charger indicator remains lit, this may indicate that the batteries have reached the end of their lifespan. Replace them with new batteries. If you are purchasing new batteries, look for Canon AA-size NiMH batteries.
- Leaving batteries in the camera or charger may result in damage from battery leakage. When not in use, remove the batteries from the camera or charger and store them in a cool, dry location.



- It takes approximately 4 hours 40 minutes for the charger to fully recharge the batteries after they have been depleted. When two batteries are placed on each side of the charger, recharging will take approximately two hours (as determined by testing at Canon facilities). Charge batteries in an environment where the temperature is in the range of 0 to 35°C (32 to 95°F).
- The charging time varies according to the ambient temperature and to the battery charge state.
- The battery charger may emit noise while charging. This is not a malfunction.
- Battery and Charger Kit CBK4-200 can also be used.

#### Using the AC Adapter Kit ACK800

It is best to power the camera with AC Adapter Kit ACK800 (sold separately) when you are using it for long periods of time or connecting it to a computer.



Turn the camera power off before connecting or disconnecting the AC adapter.

Connect the power cord to the compact power adapter first and then plug the other end into the power outlet.



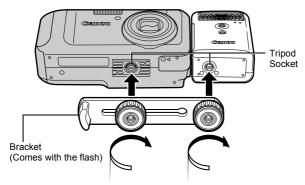
2 Open the terminal cover and attach the cord to the DC IN terminal.



# Using an Externally Mounted Flash (Sold Separately)

#### **High-Power Flash HF-DC1**

This flash is used to supplement the camera's built-in flash when the subject is too far away for proper illumination. Use the following procedures to affix the camera and High-Power Flash to the supporting bracket. Please read the instructions accompanying the flash along with this explanation.





- The flash charge time will lengthen as the battery charge gets weaker. Always set the power/mode switch to [OFF] when you finish using the flash.
- Be careful not to touch the flash window or sensor windows with your fingers while the flash is in use.
- The flash may fire if another flash is being used in close proximity.
- The High-Power Flash may not fire outdoors in daylight or when there are no reflective items.
- For continuous shooting, although the flash fires for the first shot, it does not fire for subsequent shots.
- Fasten the attachment screws securely so that they do not loosen. Failure to do so may lead to the dropping of the camera and flash resulting in damage to both.



- Before attaching the bracket to the flash, check that the lithium battery (CR123A or DL123) is installed.
- To illuminate the subjects properly, install the flash so that it is up against the side of the camera and parallel with the camera's front panel.
- A tripod can be used even when the flash is attached.

#### **■Batteries**

#### Charge becomes Severely Limited

If the battery usage time has considerably diminished, wipe the battery terminals well with a dry cloth. The terminals may be dirty from fingerprints.

#### Usage in Cold Temperatures

Get a spare generic lithium battery (CR123A or DL123). You are recommended to place the spare battery in your pocket to warm it up before switching it for the battery in the flash.

#### Non-Use over Extended Periods

Leaving batteries in the High-Power Flash could allow the battery fluid to leak, damaging the product. Remove the batteries from the High-Power Flash and store them in a cool, dry place.

## **Replacing the Date Battery**

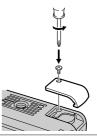
If the Date/Time menu appears when the camera power is turned on, the date battery charge is low and the date and time settings have been lost. Please purchase a lithium coin battery (CR1220) and replace it as follows.

Please note that the first date battery may appear to expire relatively quickly after you purchase the camera. This is because it is installed in the camera at the point of manufacture, not when you make the purchase.



Be particularly careful to keep the date batteries out of the reach of children. Seek medical assistance immediately if a child swallows a battery since corrosive battery fluids can damage the stomach or intestinal walls.

- 1 Confirm that the camera is turned off.
- 2 As illustrated, unscrew the screw from the coin battery cover on the camera's underside with a small Phillips (crosshead) screwdriver.



- 3 Remove the coin battery cover.
- 4 Grasp the lithium coin battery and slide it in the direction of the arrow.



Insert a new battery with the (+) side facing up.

- 6 Replace the coin battery cover and secure the screw with the screwdriver.
- When the Date/Time menu appears, set the date and time (*Basic Guide* p. 7).



After purchasing the camera and turning on the power for the first time, although the Date/Time menu will appear, you do not need to replace the date battery.

If you ever dispose of your camera, first remove the date battery for recycling according to the recycling system of your country.

#### **Camera Care and Maintenance**

Never use thinners, benzine, detergents or water to clean the camera. These substances may distort or damage the equipment.

#### **Camera Body**

Gently wipe dirt off the camera body with a soft cloth or eyeglass lens wiper.

#### Lens

First use a lens blower brush to remove dust and dirt, then remove any remaining dirt by wiping the lens lightly with a soft cloth.



Never use organic solvents on the camera body or lens. If dirt remains, contact the closest Canon Customer Support Help Desk as listed on the rear of the European Warranty System (EWS) Booklet.

#### Viewfinder and LCD Monitor

Use a lens blower brush to remove dust and dirt. If necessary, gently wipe with a soft cloth or an eyeglass lens wiper to remove stubborn dirt.



Never rub or press strongly on the LCD monitor. These actions may damage it or lead to other problems.

## **Specifications**

All data is based on Canon's standard testing methods. Subject to change without notice.

#### PowerShot A460/PowerShot A450

	(W): Max. wide angle (T): Max. telephoto		
Camera Effective Pixels	: Approx. 5.0 million		
Image Sensor	: 1/3.0-inch type CCD (Total number of pixels: Approx. 5.3 million)		
Lens	: PowerShot A460: 5.4 (W) – 21.6 (T) mm (35mm film equivalent: 38 (W) – 152 (T) mm f/2.8 (W) – f/5.8 (T)		
	: PowerShot A450: 5.4 (W) – 17.3 (T) mm (35mm film equivalent: 38 (W) – 122 (T) mm) f/2.8 (W) – f/5.1 (T)		
Digital Zoom	: PowerShot A460: Stills: approx. 4.0x (maximum of approx. 16x with optical zoom combined). Movies: approx. 2.0x (maximum of approx. 8.1x with optical zoom combined).		
	: PowerShot A450: Stills: approx. 4.0x (maximum of approx. 13x with optical zoom combined). Movies: approx. 2.0x (maximum of approx. 6.5x with optical zoom combined).		
Optical Viewfinder	: Real-image zoom viewfinder		
LCD Monitor	: 2.0-inch type, low-temperature polycrystalline silicon TFT color LCD, approx. 86,000 pixels (Picture coverage 100%)		
AF System	: TTL autofocus AF frame: AiAF (5-point)/AF (1-point fixed to center)		

Focusing Range (From the front of the lens)	: Normal: 47 cm (1.5 ft.) – infinity  Macro: 5 – 47 cm (W), 25 – 47 cm (T) (2.0 in. – 1.5 ft. (W), 9.8 in. – 1.5 ft. (T))  Super Macro: 1 – 5 cm (0.3 – 2.0 in.) (W)  Infinity: 3 m (9.8 ft.) – infinity	
Shutter	: Mechanical shutter + electronic shutter	
Shutter Speeds	<ul> <li>15 – 1/2000 sec.</li> <li>The shutter speed varies depending on the shooting mode.</li> <li>Slow shutter speeds of 1.3 sec. or slower operate with noise reduction.</li> </ul>	
Metering System	: Evaluative, Center-weighted average or Spot* *Fixed to center	
Exposure Compensation	: ±2 stops in 1/3-stop increments	
ISO speed (Standard Output Sensitivity, Recommended Exposure Index)	Auto*, ISO 80/100/200/400     Camera automatically sets the optimal speed according to subject brightness.	
White Balance	: Auto, Day Light, Cloudy, Tungsten, Fluorescent, Fluorescent H or Custom	
Built-in Flash	: Auto*, on*, off  *Red-eye reduction is available. Slow Synchro is available.	
Flash Range	: Normal: 47 cm - 3.0 m (1.5 - 9.8 ft.) (W), 47 cm - 2.0 m (1.5 - 6.6 ft.) (T) Macro: 30 - 47 cm (12 in 1.5 ft.) (W/T) (ISO speed: Auto)	
Shooting Modes (Still images)	<ul> <li>: Auto, Manual<sup>1</sup>, Super Macro<sup>2</sup>, Special Scene Mode<sup>3</sup></li> <li>1 Long shutter mode available.</li> <li>2 Selectable in Manual mode.</li> <li>3 Portrait, Night Snapshot, Kids&amp;Pets, Indoor, Foliage, Snow, Beach and Fireworks.</li> </ul>	
(Movies)	: Standard, Compact	
Continuous Shooting	: Approx. 1.5 shots/sec. (Large/Fine mode)/SDC-512MSH used	
Self-timer	: Activates shutter after an approx. 10-sec./ approx. 2-sec. delay, Custom Timer	

,	: SD memory card/SDHC memory card/ MultiMediaCard		
•	: Design rule for camera file system and DPOF compliant		
s): Exif 2.2 (JPEG)* Sound memos: WAVE (monaural)			
WAVE (monaur  * This digital came "Exif Print"). Exif the communicati printers. By conr printer, the came shooting is used	: AVI (Image data: Motion JPEG; Audio data: WAVE (monaural)) * This digital camera supports Exif 2.2 (also called "Exif Print"). Exif Print is a standard for enhancing the communication between digital cameras and printers. By connecting to an Exif Print-compliant printer, the camera's image data at the time of shooting is used and optimized, yielding extremely high quality prints.		
: Superfine, Fine	, Normal		
card is full* (car 1GB at one time Compact: (can 160 x 120 pixel * Using super h 512 MSH recc ** Even if the cli recording will length reache memory card recording may	(30 frames/sec.) continue until the memory n record up to a maximum of e)** record for 3 min.) s (15 frames/sec.) igh-speed memory cards (SDC-		
	MultiMediaCard  Design rule for DPOF compliar  Exif 2.2 (JPEG Sound memos: AVI (Image dat WAVE (monaulate the communicate printers. By comprinter, the cames shooting is used high quality printers. By comprinter, the cames shooting is used high quality printers. By comprinter, the cames shooting is used high quality printers. By comprinter, the cames shooting is used high quality printers. By comprinter, the cames shooting is used high quality printers. By comprinter, the came did not shoot printers. By comprinters. By comprinters. By comprinters and is full the came of the compact: (can 160 x 120 pixel to 160 x 120 pixel the came of the circording will length reache memory card recording marks.)		

Playback Modes	: Single, Index (9 thumbnail images), Magnified (approx. 10x (max.) in LCD monitor, advance or reverse through magnified images possible), Slide Show, My Colors (playback), Sound memos (up to 1 min.) or Movie playback (slow motion available)
Direct Print	: PictBridge compliant, and Canon Direct Print and Bubble Jet Direct compatible
Interface	: USB (mini-B) Audio/Video output (NTSC or PAL selectable, monaural audio)
Communication Settings	: MTP, PTP
Power Source	2 AA-size alkaline batteries     2 AA-size NiMH batteries NB4-300 (sold separately)     AC Adapter Kit ACK800 (sold separately)
Operating Temperatures	: 0 – 40 °C (32 – 104 °F) (0 – 35 °C (32 – 95 °F) when NB-3AH is used.)
Operating Humidity	: 10 – 90%
Dimensions (excluding protrusions)	: 106 x 51.8 x 40.2 mm (4.17 x 2.04 x 1.58 in.)
Weight (camera body only)	: Approx. 165 g (5.82 oz.)

#### **Battery Capacity**

	Number of Images Shot			
	LCD Monitor On (Based on the CIPA standard)	LCD Monitor Off	Playback Time	
AA-size Alkaline Batteries (included with the camera)	Approx. 120 images	Approx. 800 images	Approx. 9 hours	
AA-size NiMH Batteries (NB-3AH (fully charged))	Approx. 400 images	Approx. 1300 images	Approx. 11 hours	

- The actual figures will vary according to the shooting conditions and settings.
- Movie data is excluded.
- At low temperatures, the battery performance may diminish and the low battery icon may appear very rapidly. In these circumstances, the performance can be improved by warming the battery in a pocket before use.

#### **Test Conditions**

Shooting: Normal temperature (23°C ±2°C/73°F ±3.6°F), normal relative humidity (50% ±20%), alternating wide angle end and telephoto end shots at 30 second intervals with the flash fired once every two shots and the camera power turned off after every tenth shot. Power is left off for a sufficient amount of time\*, then the power is turned back on and the testing procedure is repeated.

- · A Canon-brand memory card is used.
- \* Until the battery returns to normal temperature

Playback: Normal temperature (23°C ±2°C/73°F ±3.6°F), normal relative humidity (50% ±20%), continuous playback at 3 seconds per image.



See Battery Handling Precautions (p. 83).

### **Memory Cards and Estimated Capacities**

Recording Pixels	Compres- sion	16MB	SDC-128M	SDC- 512MSH
(1)	ß	5	49	190
L (Large) 2592 x 1944 pixels		10	87	339
		21	173	671
(Mardines 4)	ß	9	76	295
M1 (Medium 1) 2048 x 1536 pixels		16	136	529
		33	269	1041
(Maralinas O)	ß	14	121	471
M2 (Medium 2) 1600 x 1200 pixels		26	217	839
1000 X 1200 pixolo		50	411	1590
(0 11)	ß	56	460	1777
S (Small) 640 x 480 pixels		88	711	2747
o to x too pixolo		138	1118	4317
(Postcard) 1600 x 1200 pixels		26	217	839
W(Wide) 2592 x 1456 pixels	ß	7	64	251
		14	118	457
		28	229	888

Capable of smooth continuous shooting (p. 29) when card has been formatted with a low level format.

This reflects standard shooting criteria established by Canon.
 Actual results may vary according to the subject and shooting conditions.

	Recording Pixels		16MB	SDC- 128M	SDC- 512MSH
Standard	640	640 x 480 pixels (10 frames/sec.)	23 sec.	3 min. 10 sec.	12 min. 16 sec.
Clandard	320	320 x 240 pixels (30 frames/sec.)	22 sec.	3 min. 1 sec.	11 min. 42 sec.
Compact	160	160x 120 pixels (15 frames/sec.)	1 min. 47 sec.	14 min. 29 sec.	55 min. 57 sec.

<sup>\*</sup> Maximum movie clip length at 3 min. The figures indicate the maximum continuous recording time.

### **Image Data Sizes (Estimated)**

December Divole	Compression			
Recording Pixels	8			
2592 x 1944 pixels	2503 KB	1395 KB	695 KB	
2048 x 1536 pixels	1602 KB	893 KB	445 KB	
M2 1600 x 1200 pixels	1002 KB	558 KB	278 KB	
s 640 x 480 pixels	249 KB	150 KB	84 KB	
1600 x 1200 pixels	_	558 KB	_	
w 2592 x 1456 pixels	1890 KB	1038 KB	519 KB	

	Recording Pixels	Frame Rate	File size
Standard	640 x 480 pixels	(10 frames/sec.)	660 KB/sec.
Clandard	320 x 240 pixels		660 KB/sec.
Compact	160 x 120 pixels	(15 frames/sec.)	120 KB/sec.

#### MultiMediaCard

Interface	Compatible with MultiMediaCard standards
Dimensions	32.0 x 24.0 x 1.4 mm (1.3 x 0.9 x 0.06 in.)
Weight	Approx. 1.5 g (0.05 oz.)

#### **SD Memory Card**

Interface	Compatible with SD memory card standards
Dimensions	32.0 x 24.0 x 2.1 mm (1.3 x 0.9 x 0.1 in.)
Weight	Approx. 2 g (0.07 oz.)

#### **NiMH Battery NB-3AH**

(Supplied with the separately sold NiMH Battery NB4-300 set or the Battery and Charger Kit CBK4-300)

Туре	AA-size nickel metal hydride battery
Nominal Voltage	1.2 V DC
Typical Capacity	2500 mAh (min.: 2300 mAh)
Cycle Life	Approx. 300 times
Operating Temperatures	0 – 35 °C (32 – 95 °F)
Diameter x Length	14.5 x 50.0 mm (0.57 x 1.97 in.)
Weight	Approx. 30 g (1.06 oz.)

<sup>\*1</sup> Charging time for four NB-3AH cells.

<sup>\*2</sup> Charging time for two NB-3AH cells placed at both ends of the battery charger.

#### Battery Charger CB-5AH/CB-5AHE

(Supplied with the separately sold Battery and Charger Kit CBK4-300)

Rated Input	100 – 240 V AC (50/60 Hz), 16 VA (100 V) - 21 VA (240 V), 0.18 A
Rated Output	565 mA*1, 1275 mA*2
Charging Time	Approx. 4 hours 40 min.*1, Approx. 2 hours*2
Operating Temperatures	0 – 35 °C (32 – 95 °F)
Dimensions	65.0 x 105.0 x 27.5 mm (2.56 x 4.13 x 1.08 in.)
Weight (body only)	Approx. 95 g (3.35 oz.)

<sup>\*1</sup> When charging four NB-3AH batteries

#### **Compact Power Adapter CA-PS800**

(Included with the separately sold AC Adapter Kit ACK800)

Rated Input	100 – 240 V AC (50/ 60 Hz)
Rated Output	3.15 V DC, 2.0 A
Operating Temperatures	0 – 40 °C (32 – 104 °F)
Dimensions	42.6 x 104.0 x 31.4 mm (1.68 x 4.09 x 1.24 in.)
Weight	Approx. 180 g (6.35 oz.) (excluding power cord)

<sup>\*2</sup> When charging two NB-3AH batteries loaded one on each side of the battery charger

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#### **Disclaimer**

- While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions.
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# **Functions Available in Each Shooting Mode**

Make settings appropriate for the shooting conditions and shoot.

Function		Û	M		SCN	*		
		•	4	ø	7 A 3 % × 8 9 8		M M	Page
Recording Pixels (Still)	Large	•	•	•	•	_	-	p. 26
	Medium 1	0	0	0	0	_	_	
	Medium 2	0	0	0	0	_	_	
	Small s	0	0	0	0	_	_	
	Postcard	0	0	0	0	_	_	
	Wide w	0	0	0	0	_	_	
Recording Pixels	640					•	_	p. 34
(Movie)	320	-	-	-	_	0	_	
()	160					_	•	
Compression	Super Fine s	0	0	0	0	_	_	p. 27
	Fine <	•	•	•	•	_	_	
	Normal	0	0	0	0	_	_	
Flash <sup>1)</sup>	Auto 5	•	0	-		_	-	Basic p. 13
	On §	-	0	-	1)	_	_	
	Off 🚱	0	•	•		_	_	
Red-Eye Reduction		0	0	-	O <sup>2)</sup>	-	-	Basic p. 14
Slow Synchro		-	O <sup>3)</sup>	-	_4)	_	_	Basic p. 14
Drive Mode	Single Shot	•	•	•	•	•	•	-
	Continuous Shooting	-	0	0	0	-	-	p. 29
	10 sec., 2 sec. Self Timer	0	0	0	0	0	0	Basic p. 16
	Custom Timer	0	0	0	0	_	-	ρ. 10
AF-assist Beam		0	0	0	O <sup>2)</sup>	0	0	p. 20
Autofocus Modes		0	0	0	O <sup>2)</sup>	-	-	p. 35
Macro Mode		0	0	-	O <sup>5)</sup>	0	0	Basic
Infinity Mode		-	0	-	O <sup>5)</sup>	0	0	p. 15
Digital Zoom		0	0	0	0	O <sup>6)</sup>	-	p. 27

Function			Δ	ΔM		SCN	<b>-</b> <del>-</del>		
			•	4	ø	<b>1</b>		Ø	Page
Exposure Compensation			_	0	0	0	_	-	p. 38
Metering Method	Evaluative	(3)	_7)	•	•	_7)	_7)	_7)	
	Center Weighted Avg.		-	O <sup>3)</sup>	0	-	-	-	p. 37
	Spot	$\odot$	_	O <sup>3)</sup>	0	-	_	-	
White Balance <sup>8)</sup>		W8	_	0	0	_7)	0	0	p. 40
My Colors		S	_	0	0	-	0	0	p. 43
ISO Speed		iso Mili	_7)	O <sup>9)</sup>	0	_7)	_7)	_7)	p. 45
Disp. Overlay			0	0	0	0	O <sup>10)</sup>	O <sup>10)</sup>	p. 31
O Setting available (a Default setting)									

(Shaded Area): Setting is retained even when the camera power is shut off.

- (1) Default flash settings are as follows.

  - ≥ 3 (3 :Off
- \*The flash cannot be set in the mode
- (2) Cannot be set in the mode.
- (3) This cannot be set in Long Shutter mode.
- (4) This option is set to [On] in M mode, but [Off] in other modes.
- (5) You cannot switch to the Macro/Infinity modes in the 🖾 or 🌃 modes.
- (6) Operation is possible during shooting (Standard m mode only).
- (7) Automatically set by the camera.
- (8) Cannot be adjusted when My Colors mode is set to & or & ...
- (9) Example cannot be set in Long Shutter Mode.
- (10) Only [Grid Lines] can be set in the '\(\frac{1}{12}\) mode.

# Canon