

# Camera Features and Functions



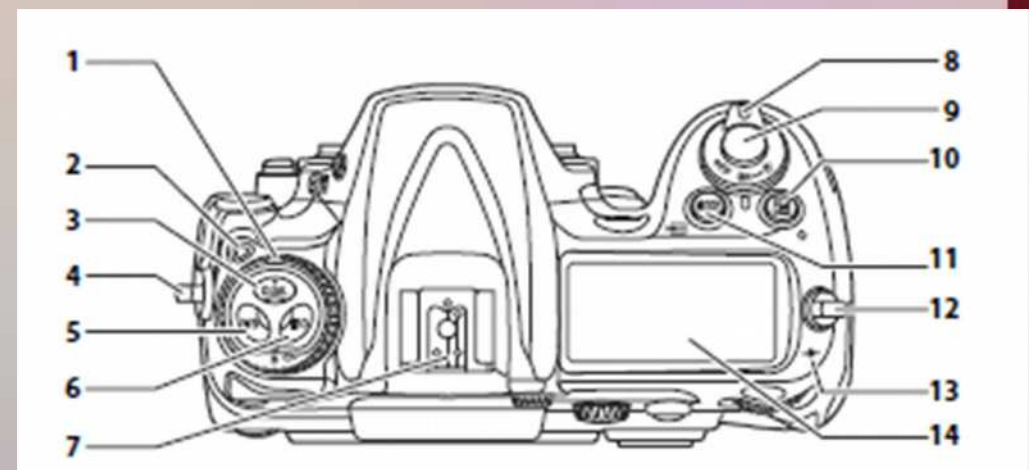
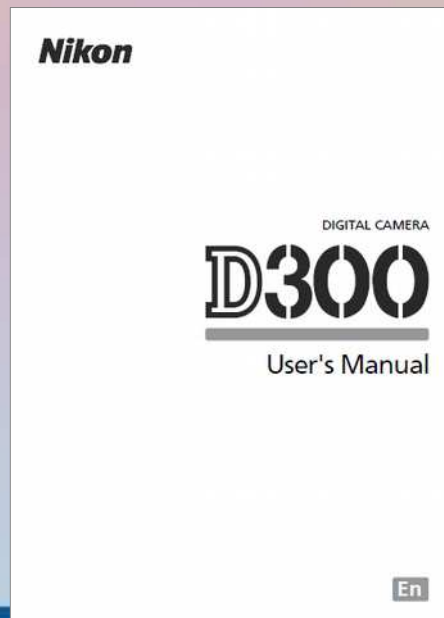
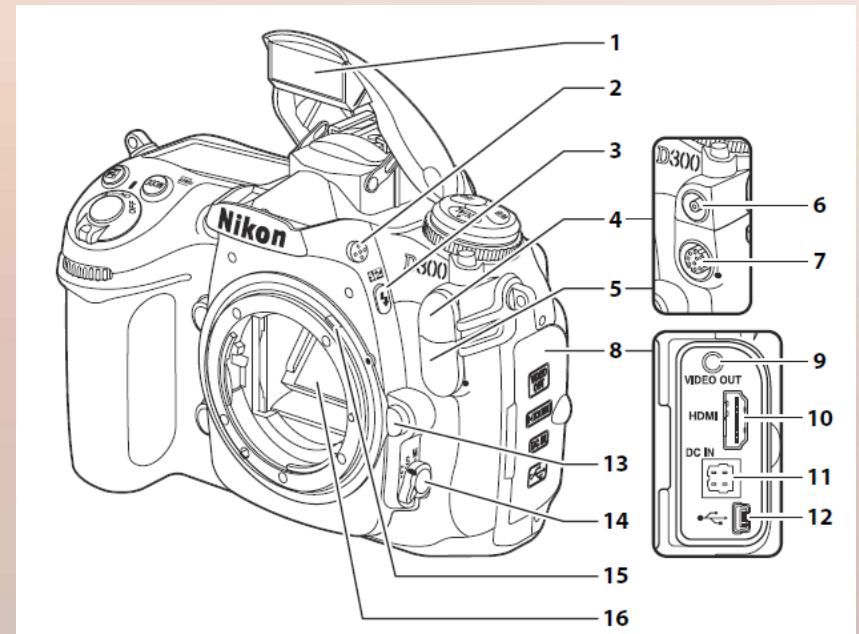
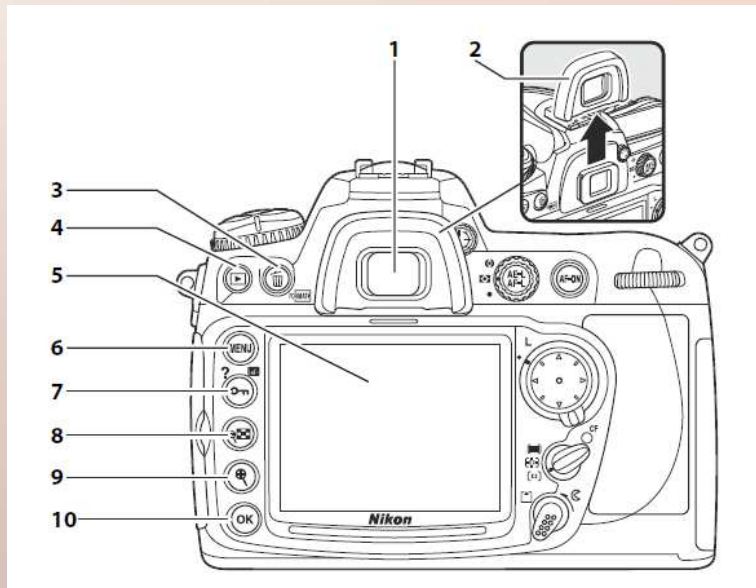
# MENUS AND SETUP



# Setting up your new camera

- After unpacking your camera, put your battery on charge while you **take time to read your manual**.
- Much of the information could seem difficult to follow, so **work through the basic camera setup**.
- **Understand** the function of **external buttons**
- **Understand** navigation through the menus
- *Place your manual in a zip lock bag and keep it with your camera (Prevents it getting dog eared)*

# Just how complex is it really?





# Using your manual

## ■ Taking Photographs

Question	Key phrase	See page
How many more shots can I take with this card?	Number of exposures remaining	45
How do I take bigger photographs?	Image quality and size	56, 60
How can I get more photos on the memory card?		
Can I control how the camera focuses?	Autofocus	61
How do I take a lot of photographs quickly?	Release mode	74
Can I change the frame advance rate?	Shooting speed	76, 282
Can I shoot a self-portrait?	Self-timer mode	89
Can I take pictures under low light without the flash?	ISO sensitivity	94
Can the ISO sensitivity I choose be adjusted to ensure optimal exposure?	ISO sensitivity auto control	96
How do I freeze or blur moving objects?	Exposure mode <b>S</b> (shutter-priority auto)	106
How do I blur background details or keep both foreground and background in focus?	Exposure mode <b>A</b> (aperture-priority auto)	107

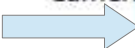
# Table of Contents

Q&A Index .....
For Your Safety .....
Notices.....

## Introduction

Overview .....
Getting to Know the Camera.....
Camera Body .....
The Control Panel .....
The Viewfinder Display .....
The Shooting Information Disp .....
The Command Dials .....
Quick Start Guide.....

## Tutorial

Camera Menus .....
 Using Camera Menus .....
Help .....
First Steps .....
Charge the Battery .....
Insert the Battery .....
Attach a Lens.....
Basic Setup.....
Insert a Memory Card.....
Adjust Viewfinder Focus .....
Basic Photography and Playback.....

## Image Recording Options

Image Quality.....
Image Size .....

## Focus

Focus Mode .....
AF-Area Mode .....
Focus Point Selection.....
Focus Lock.....
Manual Focus .....

## Release Mode

Choosing a Release Mode .....
Continuous Mode.....
Framing Pictures in the Monitor (Live View) .....
Self-Timer Mode.....
Mirror up Mode .....

## ISO Sensitivity

Choosing ISO Sensitivity Manually.....
Auto ISO Sensitivity Control .....

## Exposure

Metering .....
Exposure Mode .....
<i>P</i> : Programmed Auto .....
<i>S</i> : Shutter-Priority Auto.....
<i>A</i> : Aperture-Priority Auto.....
<i>M</i> : Manual .....
Autoexposure (AE) Lock.....
Exposure Compensation .....
Bracketing .....

## More About Playback

205

Full-Frame Playback .....
Photo Information.....
Viewing Multiple Images: Thumbnail Playback .....
Taking a Closer Look: Playback Zoom.....
Protecting Photographs from Deletion.....
Deleting Individual Photographs .....


## Connections

223

Connecting to a Computer .....
Direct USB Connection .....
Wireless and Ethernet Networks .....
Printing Photographs.....
Direct USB Connection .....
Viewing Photographs on TV .....
Standard Definition Devices .....
High-Definition Devices .....

## Menu Guide

245

 The Playback Menu: Managing Images.....
Delete .....
Playback Folder .....
Hide Image.....
Display Mode .....
Image Review.....
After Delete .....
Rotate Tall .....
Slide Show.....
Print Set (DPOF) .....



## The Shooting Menu: Shooting Options...

Shooting Menu Bank .....
Reset Shooting Menu .....
Active Folder .....
File Naming .....
Image Quality .....
Image Size .....
JPEG Compression .....
NEF (RAW) Recording .....
White Balance .....
Set Picture Control .....
Manage Picture Control .....
Color Space .....
Active D-Lighting .....
Long Exp. NR (Long Exposure Noise I
High ISO NR .....
ISO Sensitivity Settings .....
Live View .....
Multiple Exposure .....
Interval Timer Shooting .....

## Custom Settings: Fine-Tuning Camera S

Custom Setting Bank .....
Reset Custom Settings .....
a: Autofocus .....
a1: AF-C Priority Selection .....
a2: AF-S Priority Selection .....
a3: Dynamic AF Area .....
a4: Focus Tracking with Lock-On .....
a5: AF Activation .....
a6: AF Point Illumination .....
a7: Focus Point Wrap-Around .....
a8: AF point selection .....
a9: Built-in AF-assist illuminator .....
a10: AF-On for MB-D10 .....
b: Metering/Exposure .....
b1: ISO Sensitivity Step Value .....
b2: EV Steps for Exposure Cntrl .....
b3: Exp Comp/Fine Tune .....

b4: Easy Exposure Compensatio
b5: Center-Weighted Area .....
b6: Fine Tune Optimal Exposure
c: Timers/AE Lock .....
c1: Shutter-Release Button AE-L
c2: Auto Meter-off Delay .....
c3: Self-Timer Delay .....
c4: Monitor off Delay .....
d: Shooting/Display .....
d1: Beep .....
d2: Viewfinder Grid Display .....
d3: Viewfinder Warning Display.
d4: CL Mode Shooting Speed .....
d5: Max. Continuous Release .....
d6: File Number Sequence .....
d7: Shooting Info Display .....
d8: LCD Illumination .....
d9: Exposure Delay Mode .....
d10: MB-D10 Battery Type .....
d11: Battery Order .....
e: Bracketing/Flash .....
e1: Flash Sync Speed .....
e2: Flash Shutter Speed .....
e3: Flash Cntrl for Built-in Flash ..
e4: Modeling Flash .....
e5: Auto Bracketing Set .....
e6: Auto Bracketing (Mode M) .....
e7: Bracketing Order .....
f: Controls .....
f1: Multi Selector Center Button.
f2: Multi Selector .....
f3: Photo Info/Playback .....
f4: Assign FUNC. Button .....
f5: Assign Preview Button .....
f6: Assign AE-L/AF-L Button .....
f7: Customize Command Dials .....
f8: Release Button to Use Dial .....
f9: No Memory Card? .....
f10: Reverse Indicators .....

## The Setup Menu: Camera Setup.....

Format Memory Card .....
LCD Brightness .....
Clean Image Sensor .....
Lock Mirror up for Cleaning .....
Video Mode .....
HDMI .....
World Time .....
Language .....
Image Comment .....
Auto Image Rotation .....
USB .....
Dust off Ref Photo .....
Battery Info .....
Wireless Transmitter .....
Image Authentication .....
Save/Load Settings .....
GPS .....
Non-CPU Lens Data .....
AF Fine Tune .....
Firmware Version .....

## The Retouch Menu: Creating Retouch

D-Lighting .....
Red-Eye Correction .....
Trim .....
Monochrome .....
Filter Effects .....
Color Balance .....
Image Overlay .....
Side-by-Side Comparison .....

## My Menu: Creating a Custom Menu .....

## Technical Notes

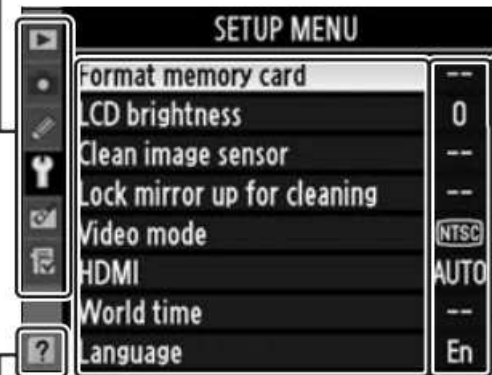
Compatible Lenses .....
Optional Flash Units (Speedlights) .....
Other Accessories .....
Caring for the Camera .....
Storage .....
Cleaning .....
The Low-Pass Filter .....
"Clean Now" .....
"Clean at Startup/Shutdown" .....
Manual Cleaning .....
Caring for the Camera and Battery: Cauti
Troubleshooting .....
Error Messages .....
Appendix .....
Specifications .....
Index .....

# Setup menu

## Tabs

Choose from playback, shooting, Custom Settings, setup, retouch, and My menus

Slider shows position in current menu.



?

If "?" icon is displayed, help for current item can be viewed by pressing (?) button

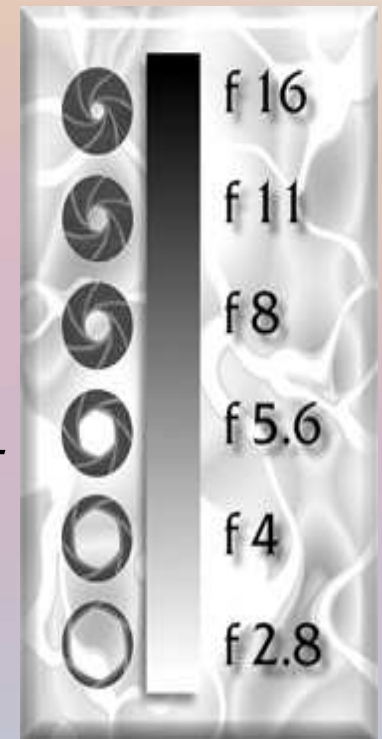
## Menu options

Options in current menu.



# Some Terminology

- Camera manufactures don't always use the same terminology – some common ones
- **Shutter** Priority is called 'S' or 'TV'
- **Aperture** Priority is called 'A' or 'AV'
- **This is where most people get confused**
- *Aperture and 'F' Stops are the same thing expressed from an opposite view point*
- Use 'F' Stops as they are used in camera



## P: Programmed Auto

- In this mode, **the camera automatically adjusts shutter speed and aperture** according to a built in program to ensure optimal exposures for most situations.
- This **mode is recommended for snapshots** and other situations in which **you want to leave the camera in charge** of shutter speed and aperture
- A flex adjustment of the program mode may allow changing the 'F' Stop which also changes shutter speed for a custom program mode

# S: Shutter Priority or TV

- In Shutter priority, **you choose the shutter speed** while the camera automatically selects the aperture
- Action can be frozen or blurred
- **Slow shutter speeds** where the shutter is open for a long time blur action, or can be used effectively when panning the shot
- **Fast shutter speeds** when the shutter is open for a very short time will freeze action



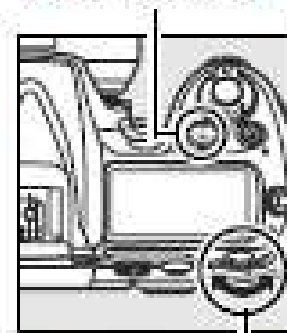
## 5: Shutter-Priority Auto

In shutter-priority auto, you choose the shutter speed while the camera automatically selects the aperture that will produce the optimal exposure. To take photographs in shutter-priority auto:

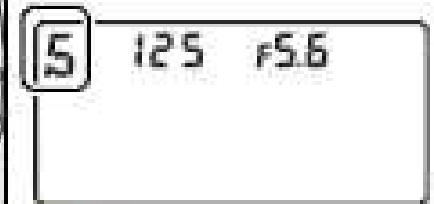
- 1 Select exposure mode  
S.

Press the **MODE** button and rotate the main command dial until **S** is displayed in the viewfinder and control panel.

MODE button



Main command dial



- 2 Choose a shutter speed.

Rotate the main command dial to choose the desired shutter speed. Shutter speed can be set to "x 250" or to values between 30 s (30'') and 1/8,000 s (8000). Use slow shutter speeds to suggest motion by blurring moving objects, high shutter speeds to "freeze" motion.



# Shutter Priority



1/1000th second



1/800th second



1/40th second

What effect do you want to show with your speed setting?





Shutter speed  $1/125^{\text{th}}$  sec  
You can see the wash of the propellers, this tells the story of a power on landing

Shutter speed  $1/800^{\text{th}}$  sec  
You can see how the propellers appeared stopped like it is coming in for a power off landing







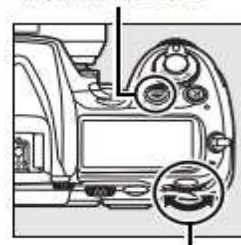
## **A: Aperture-Priority Auto**

In aperture-priority auto, you choose the aperture while the camera automatically selects the shutter speed that will produce the optimal exposure. To take photographs in aperture-priority auto:

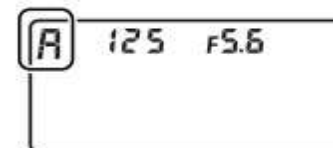
### **1 Select exposure mode A.**

Press the **MODE** button and rotate the main command dial until **A** is displayed in the viewfinder and control panel.

MODE button

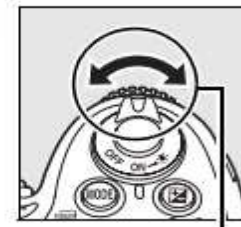


Main command dial

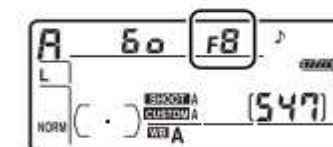


### **2 Choose an aperture.**

Rotate the sub-command dial to choose the desired aperture from values between the minimum and maximum for the lens. Small apertures (high f-numbers) increase depth of field (see page 103), bringing both foreground and background into focus. Large apertures (low f-numbers) soften background details in portraits or other compositions that emphasize the main subject.



Sub-command dial



Small aperture (f/36)



Large aperture (f/2.8)



# Aperture priority



**F32**

Large 'F' stop gives long depth of field



**F13**

Different lenses have different depths of field for a given 'F' stop.

*DOF = Depth of Field or Depth of Focus*



**F5**

Small 'F' stop gives shallow depth of field

# Camera presets modes



Even at a basic level cameras may have additional preset modes





# Control dial

Aperture Priority: You control the DOF with Aperture selection

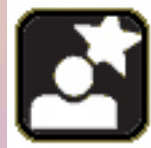


Shutter Priority: Set the shutter to blur or freeze action

Manual Mode: you are in full control



Night Portrait: Use with Flash and slow shutter to capture low ambient light



Portrait: Shallow DOF to promote the subject

Sport Action: Fast shutter speed to freeze action

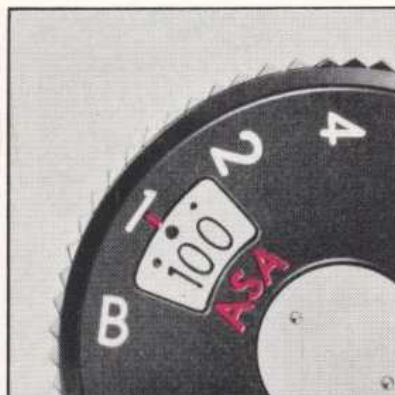


Landscape: High F stop to provide good DOF



Macro: Provides close focus and shallow DOF

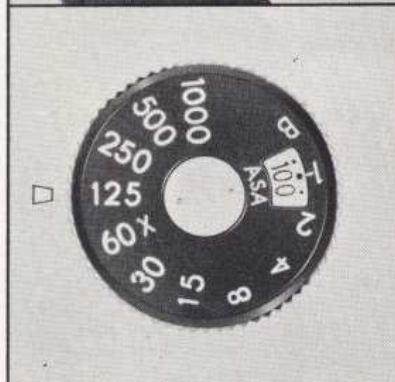
# Shooting Full Manual Mode



**1**

## Set the film speed.

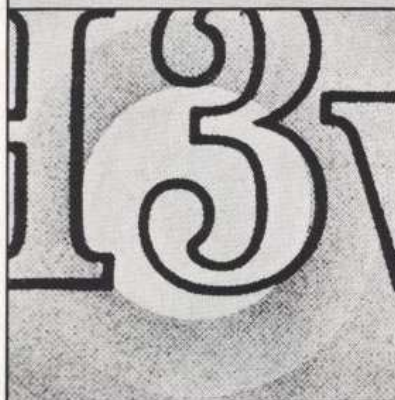
Lift the outer ring of the shutter speed dial, turn it around and set the same number as the ASA number of the loaded film to the small red index which appears alongside the figure 1. Then cock the rapid wind lever.



**2**

## Set the shutter speed.

Turn the shutter speed dial and set the speed you wish to use to the index. When outdoors, set the speed at 1/125 sec., or faster, depending upon the lighting. When indoors, set it at 1/30, or in its neighborhood. Change the shutter speed later, when necessary. (Refer to 5, next page.)



**3**

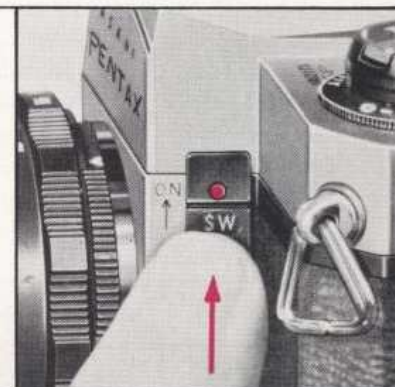
## Compose and focus.

While viewing through the viewfinder, turn the distance scale ring with your thumb and index finger until you get the sharpest image of your subject at the microprism center of the finder.

**4**

## Turn on the light meter switch.

Push up the switch button with your thumb, and the small window on the switch button will turn to red indicating that the meter is switched on. Through the viewfinder, you will observe the movement of the meter's needle on the right side of the ground glass. Be sure to turn off the meter's switch when not actually taking readings.



**5**

## Rotate the diaphragm ring.

The needle moves up and down with the turn of the diaphragm ring. When the needle rests at the center, you will get correct exposure. If the needle does not come to the center no matter how far you turn the diaphragm ring, change the shutter speed. When the needle is off center and close to the (+) mark, you will get over-exposure: change the shutter speed to a faster setting. If the needle is closer to the (-) mark, you will get under-exposure: change the shutter speed to a slower setting.



**6**

## Release the shutter.

Hold your camera firmly and trip the shutter. When the shutter is released, the meter switch will automatically turn off, and the needle will remain fixed at the center. The diaphragm will reopen to its full aperture and the overall image will look brighter. Cock the rapid wind lever for the next picture. (When taking a series of pictures under the same lighting conditions, it is not necessary to repeat the instructions given in 4 and 5.)



# Understanding manual mode

- Manual mode, you are in full control
- A light meter will display in the eye piece
- Exposure has three components. Shutter speed, Aperture or 'F' Stop and ISO
- Decide what you want the image to look like. Set shutter speed and 'F' Stop
- Adjust ISO to bring light meter to the center or change the other settings as required.

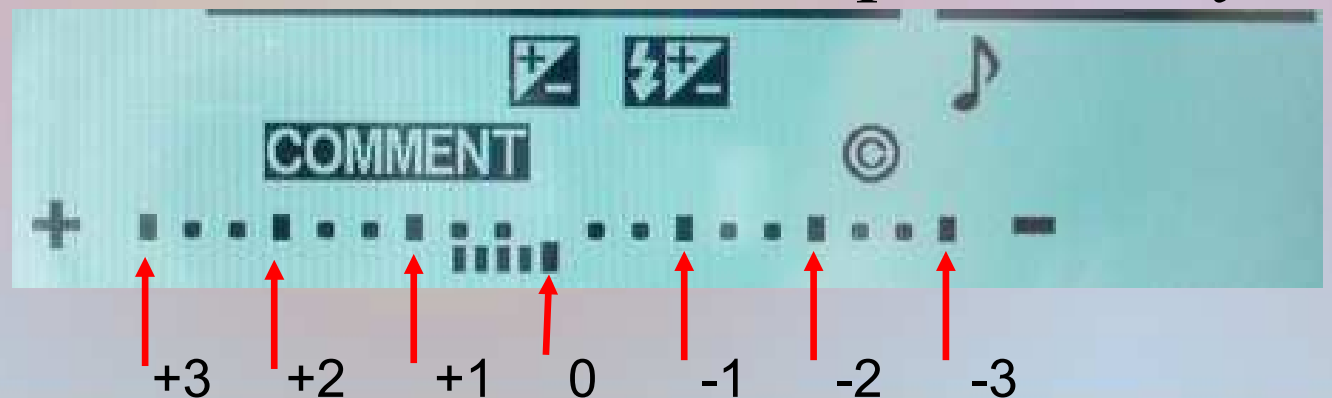


# Understanding displayed values

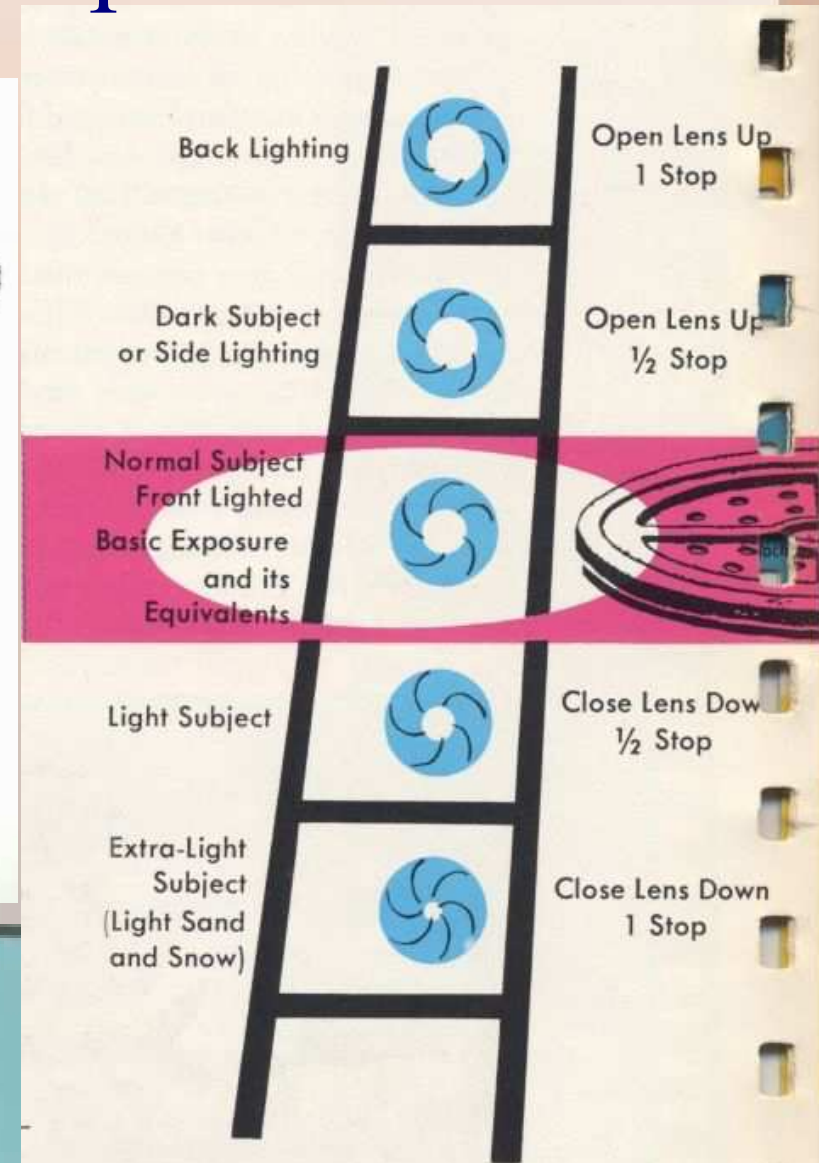
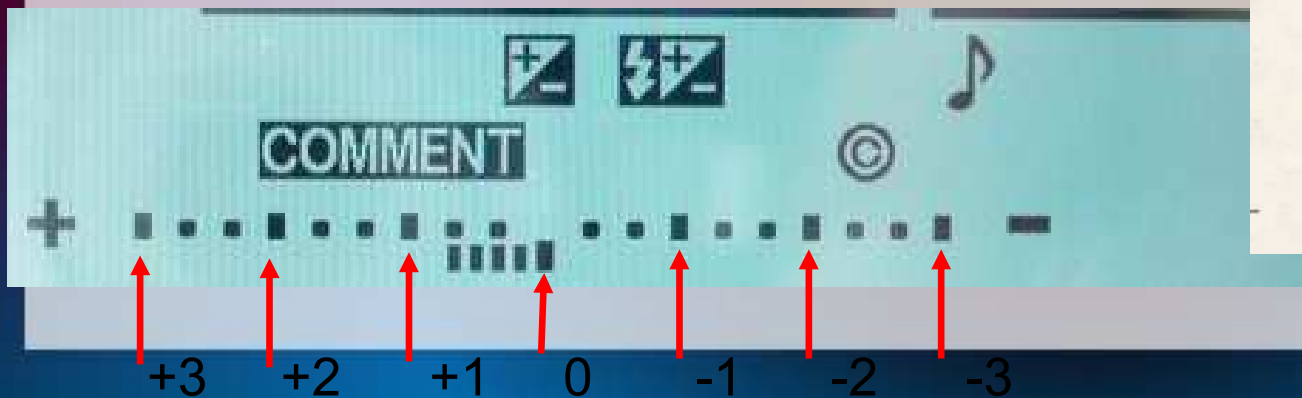
- Set ISO between 100 & 500 for this test
- Point camera at a point of interest
- In 'P' Mode it will show Shutter speed and 'F' Stop values, record these values
- 'S' Mode set shutter speed from 'P' mode and 'F' stop should be close to recorded
- 'A' Mode Set 'F' Stop from 'P' mode and 'F' Stop should be close to recorded

# The light meter

- You should have noticed that when setting the known values found in 'P' mode that 'A' & 'S' modes the numbers were very close
- If you put the same values from 'P' Mode into 'M' Mode the light meter should read in the middle
- In all cases you would have got a correctly exposed image in each mode. The values and exposure may vary slightly



# Getting the right exposure






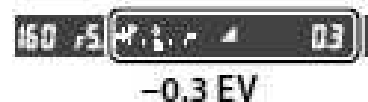
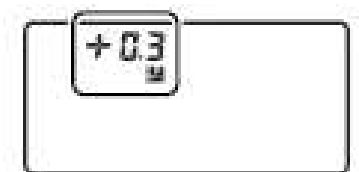
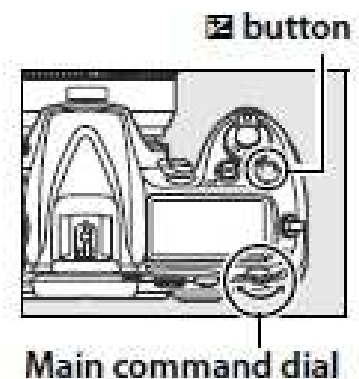
# Exposure Compensation



Exposure compensation is used to alter exposure from the value suggested by the camera, making pictures brighter or darker. It is most effective when used with center-weighted or spot metering (see page 102).

In exposure mode **M**, only the exposure information shown in the electronic analog exposure display is affected; shutter speed and aperture do not change.

To choose a value for exposure compensation, press the  button and rotate the main command dial until the desired value is displayed in the control panel or viewfinder.





Correct exposure





+0.7 Exposure compensation

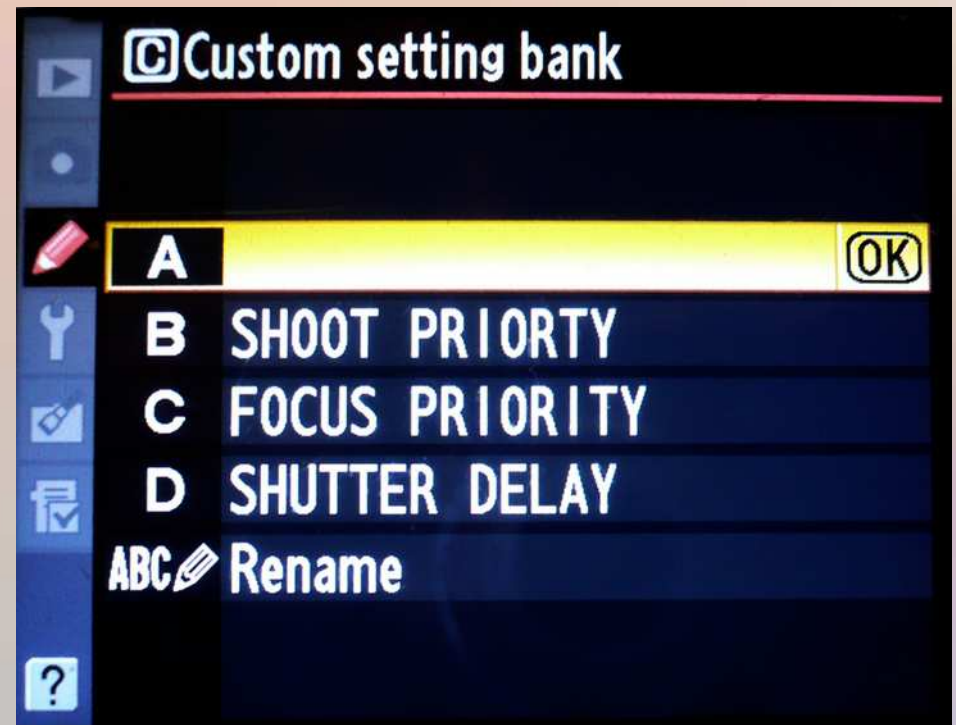




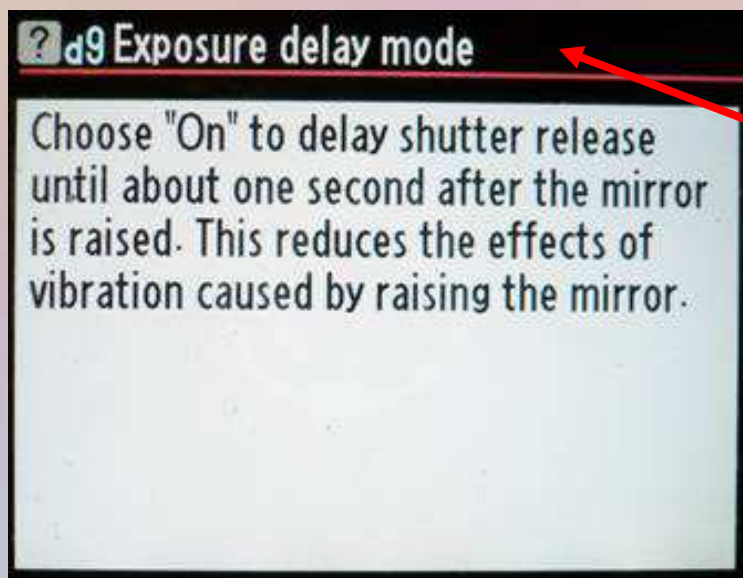
+2.0 Exposure compensation

# Custom menus

- The purpose of a custom menu is to provide your settings for particular conditions
- A - Used for general shooting, adjusted often
- B – I want to shoot and will take my chances that focus has been achieved
- C – Focus must be achieved
- D – my landscape settings









**b Metering/exposure**

b1 ISO sensitivity step value	1/3
b2 EV steps for exposure cntrl.	1/3
b3 Exp comp/fine tune	1/3
b4 Easy exposure compensation	OFF
<b>b5 Center-weighted area</b>	<b>(-)10</b>
b6 Fine tune optimal exposure	
c1 Shutter-release button AE-L	OFF
c2 Auto meter-off delay	Rs

**? b5 Center-weighted area**

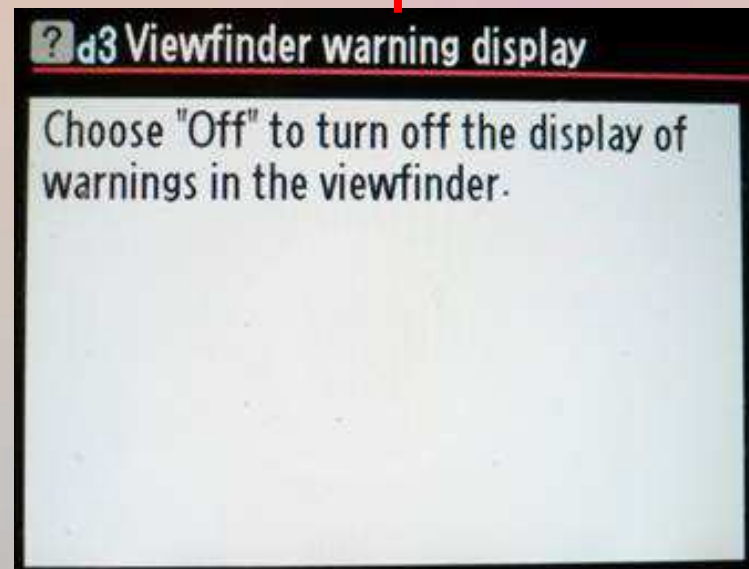
Choose the size of the area given the most weight in center-weighted metering. Regardless of the setting chosen, the size of the area used for non-CPU lenses is fixed at 8 mm.

**b5 Center-weighted area**

(-) 6 $\phi$ 6 mm	
(-) 8 $\phi$ 8 mm	
<b>(-)10 <math>\phi</math> 10 mm</b>	<b>OK</b>
(-)13 $\phi$ 13 mm	
⊙ Avg Average	



The BLINKIES

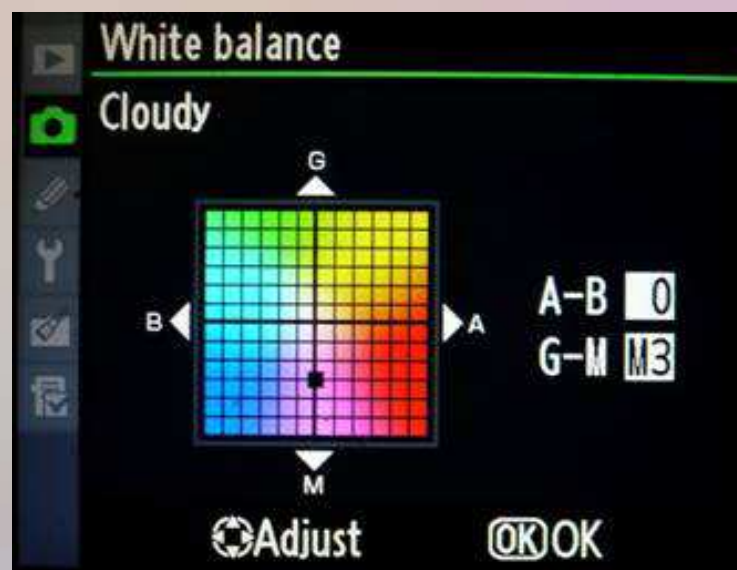
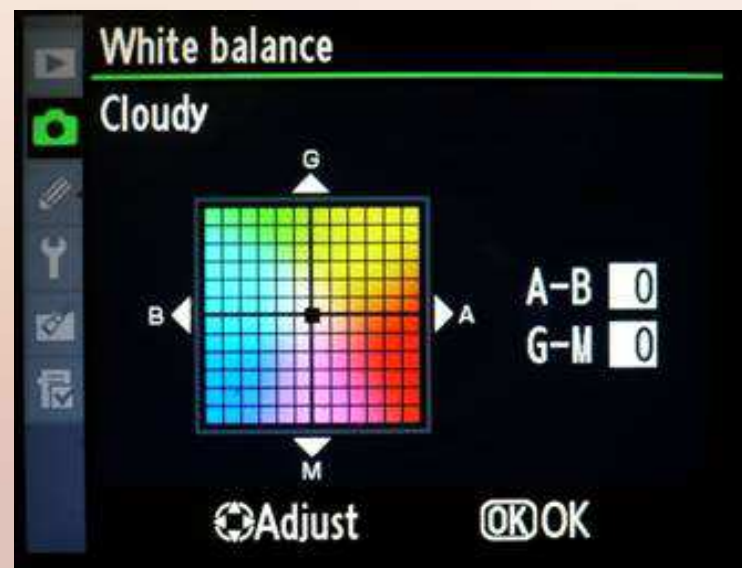


# Shooting menus

- The purpose of a shooting menu is to provide your settings for particular conditions
- A - Used for general shooting, adjusted often
- B – I want to shoot and achieve a particular look
- C – Indoor shooting at the Tournament center
- D – Ready for July 1st





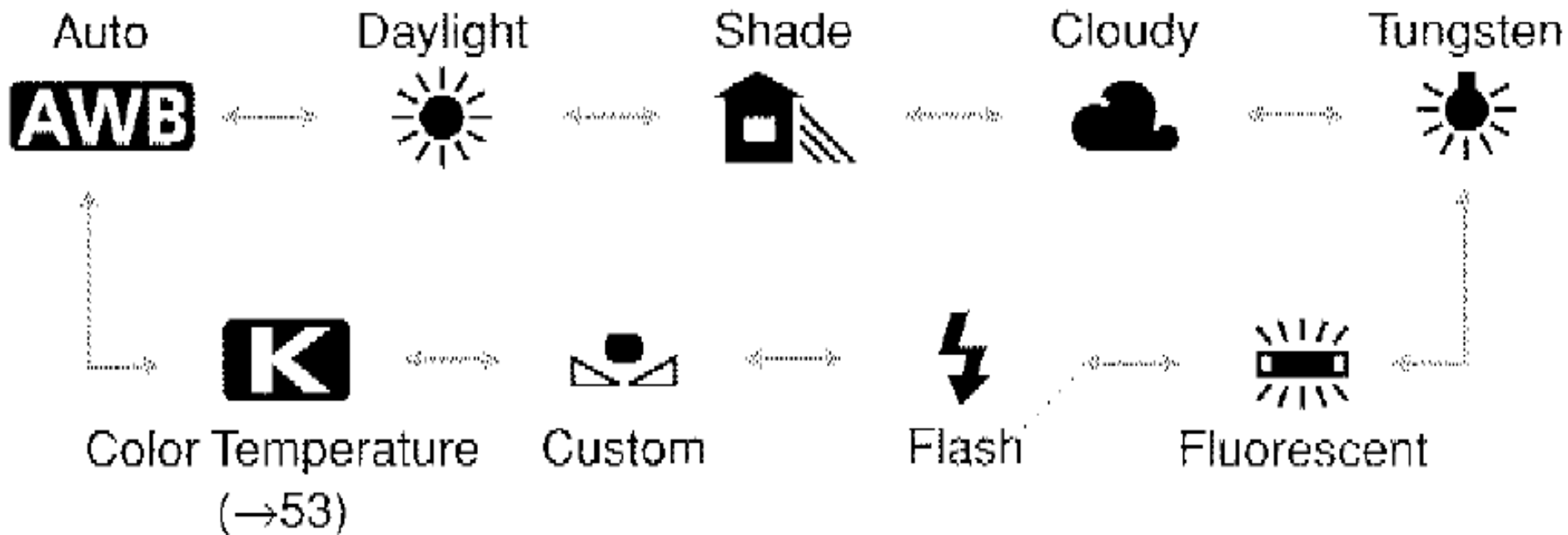


# Why do we have white balance?

Again from days gone by, you had to decide where you would be shooting and what type of film you would use, indoor or outdoor for example.

Remember that orange cast when you took pictures under incandescent light while using outdoor film ?





2500 Kelvin



5500 Kelvin



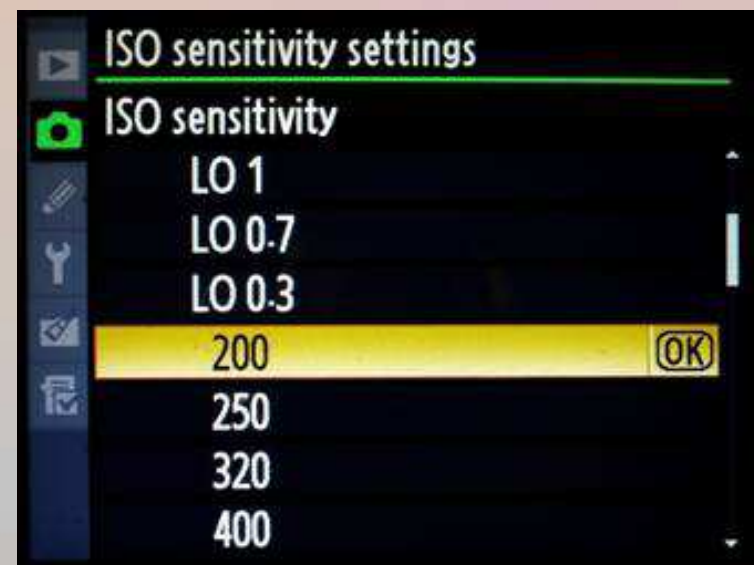
10000 Kelvin













# Increasing ISO increases grain

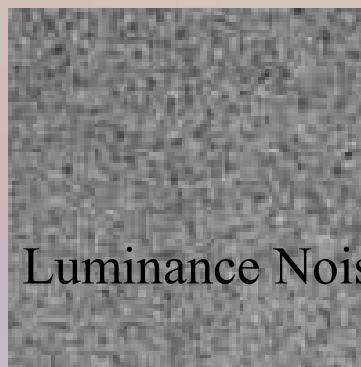
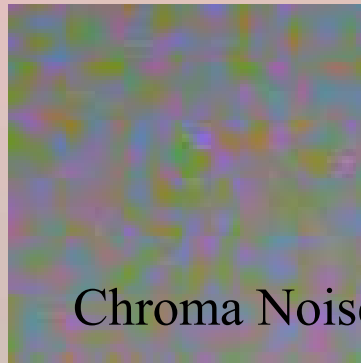
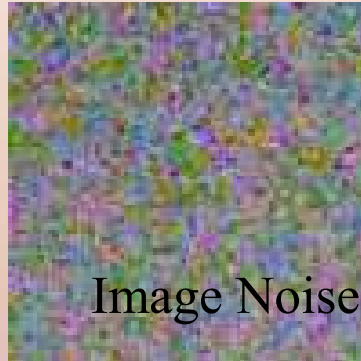
If you had shot film in the past, you probably noticed that as the ASA went up say from 64 to **400** the image would lose some sharpness and **become grainy**.

With Digital and depending on the sensor, pixel size and camera software, we will see an increase of **noise** as ISO increases by amplifying the available light.

# What digital noise all about?



Low ISO setting



High ISO setting

# Noise in your images

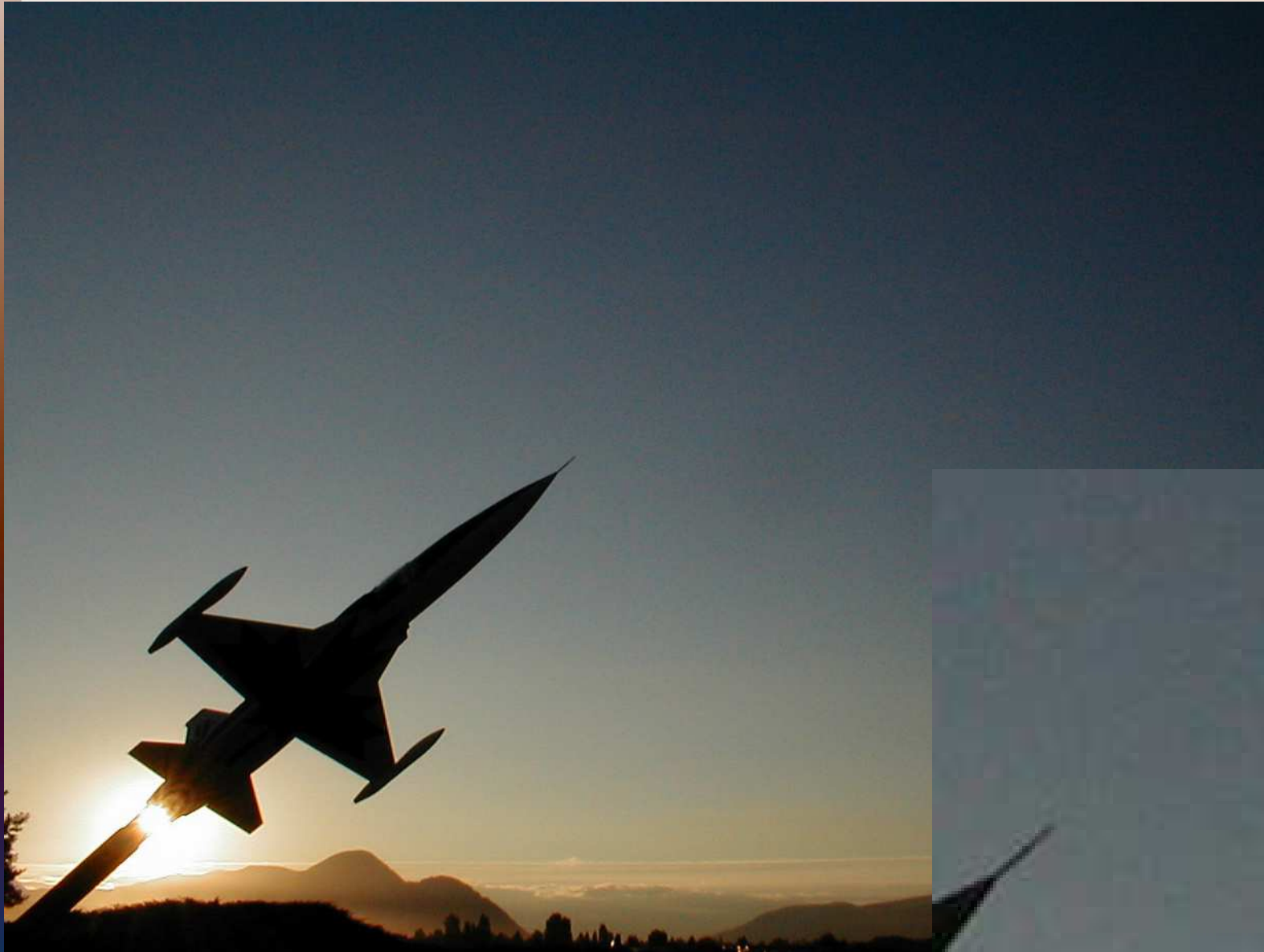


Photo: Robert Nowland Olympus D360L 1/442 sec f/11 ISO 125





NEF - Raw image files are sometimes called **digital negatives**

TIFF = Tagged Image File Format

JPG = Joint Photographic Experts Group

### Memory Card Capacity

The following table shows the approximate number of pictures that can be stored on a 2 GB SanDisk Extreme III (SDCFX) card at different image quality and size settings.

Image quality	Image size	File size <sup>1</sup>	No. of images <sup>1</sup>	Buffer capacity <sup>2</sup>
NEF (RAW), Lossless compressed, 12-bit	—	13.6 MB	98	18
NEF (RAW), Lossless compressed, 14-bit <sup>3</sup>	—	16.7 MB	75	21
NEF (RAW), Compressed, 12-bit	—	11.3 MB	135	21
NEF (RAW), Compressed, 14-bit <sup>3</sup>	—	14.2 MB	112	27
NEF (RAW), Uncompressed, 12-bit	—	19.4 MB	98	17
NEF (RAW), Uncompressed, 14-bit <sup>3</sup>	—	25.3 MB	75	16
TIFF (RGB)	L	36.5 MB	52	16
	M	21.2 MB	93	20
	S	10.2 MB	208	29
JPEG fine <sup>4</sup>	L	5.8 MB	276	43
	M	3.3 MB	488	89
	S	1.5 MB	1000	100
JPEG normal <sup>4</sup>	L	2.9 MB	548	90
	M	1.6 MB	946	100
	S	0.7 MB	2000	100
JPEG basic <sup>4</sup>	L	1.5 MB	1000	100
	M	0.8 MB	1800	100
	S	0.4 MB	3900	100



Questions?

Enjoy your new hobby

