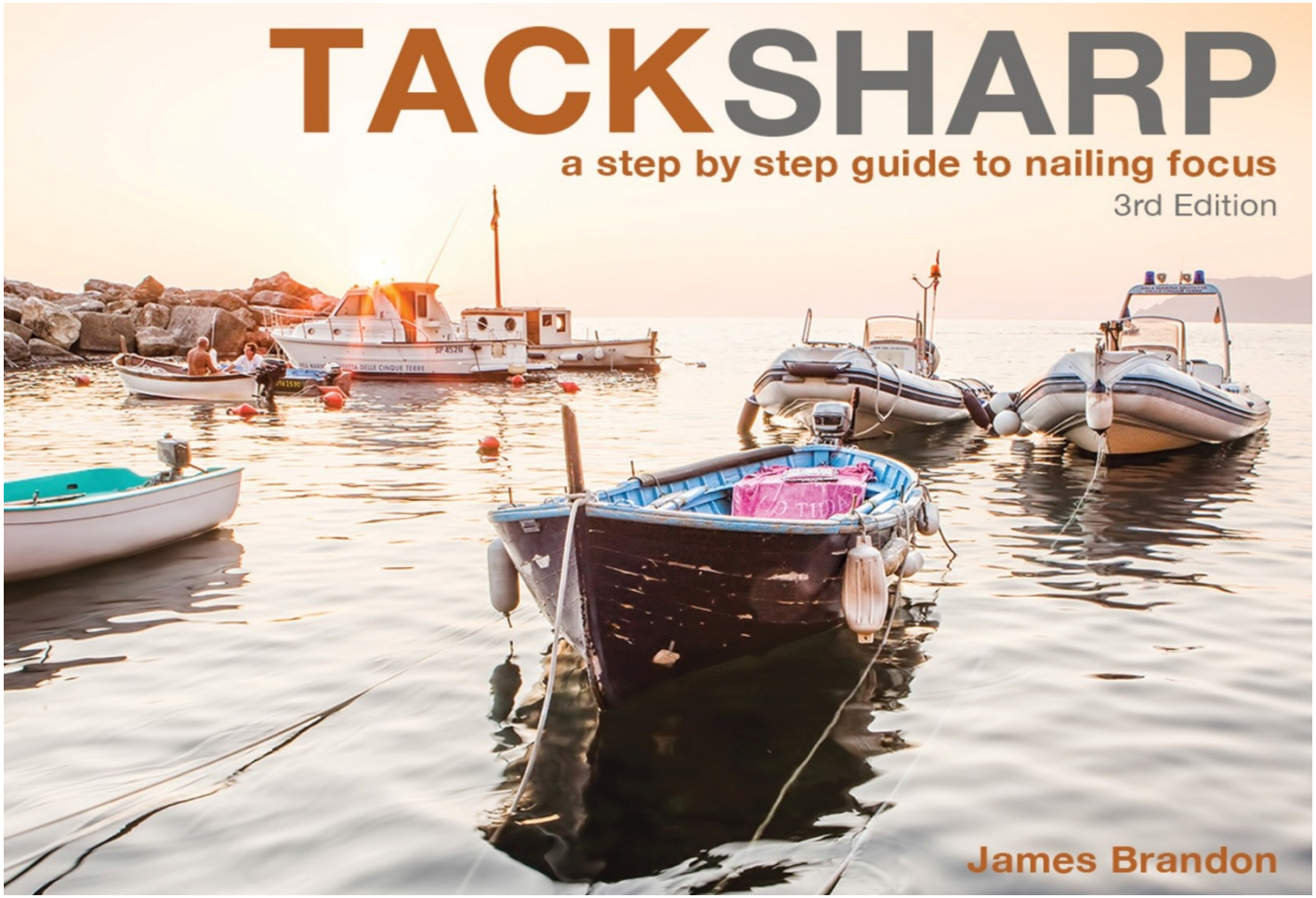
Achieving “Tack Sharp”

Presented by

John Monroe

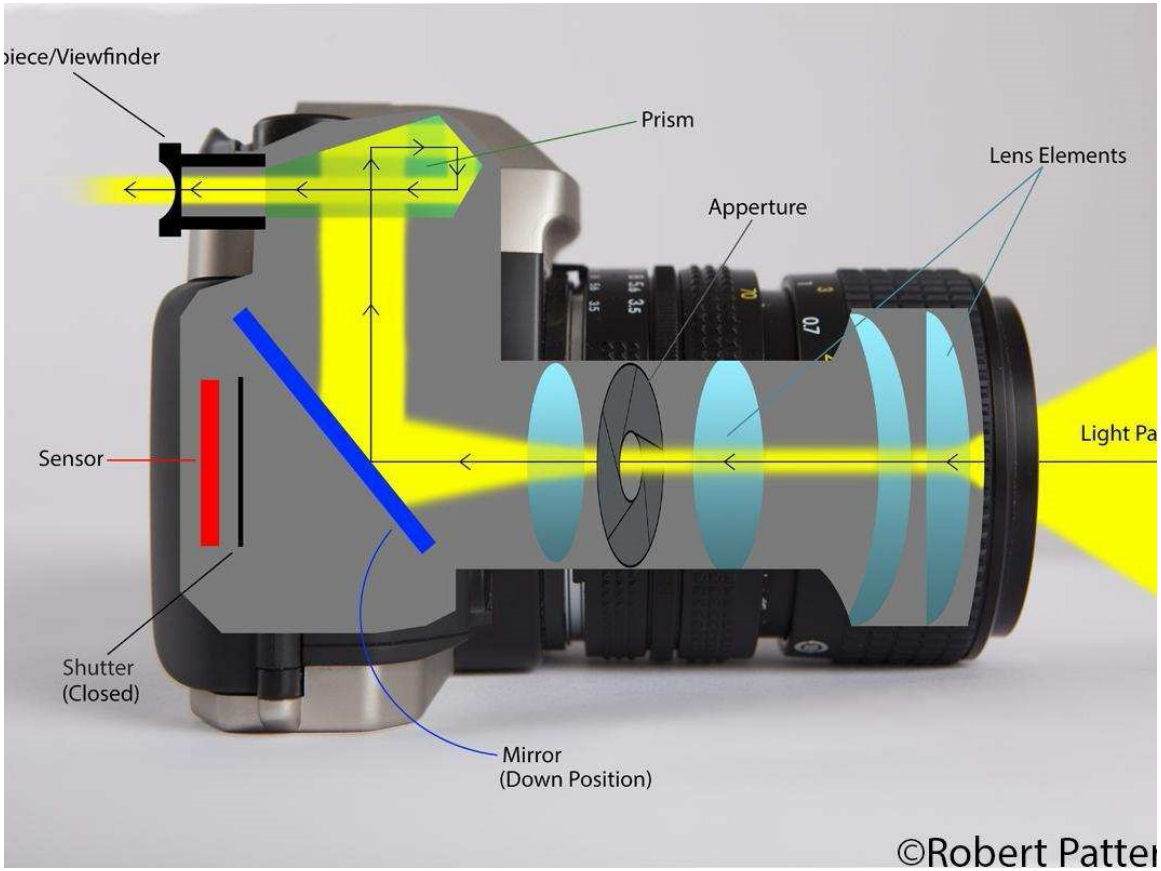


Many images and ideas in this presentation came from the eBook "TACKSHARP" written by the world class photographer James Brandon. To download, just google "**tacksharp ebook**" $9.97

What is Tack Sharp?

- Tack Sharp simply means having the most important part of an image in focus

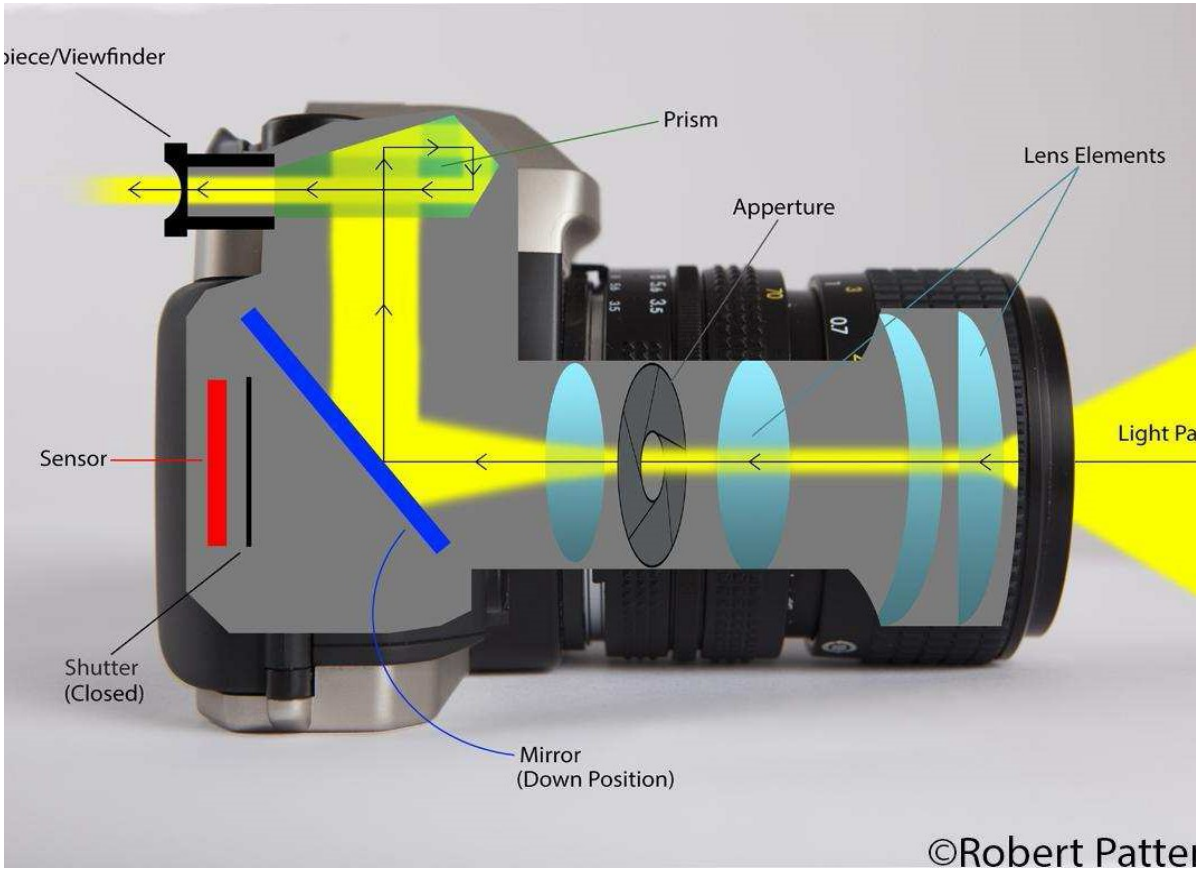
- This doesn't mean everything has to be in focus, just the important part



Note that, on most cameras, the image is eventually focused on the **Prism** which you see in the Viewfinder. It doesn't matter if the image is of something 2 feet in front of the camera or at infinity. It's **always** focused on the prism.

Very first thing to do

- Adjust the Diopter on your viewfinder
- Always shoot with glasses or without them
- Don’t switch (sometimes glasses - sometimes not)
- **Why not???**
- Because the image is always focused on the prism and the prism is always the same distance from your eye



The **aperture** is the **GREY** mechanical device (in the lens) that changes its size to allow more or less light to reach the sensor.

Aperture

- Aperture affects Depth-of-Field (DOF) or how much of the image is in focus

- To isolate subjects, use **small f-stop**
- Ex. f/2.8 – but more chance for blurring

- To **increased DOF**, use a **larger f-stop**
- f/13 - good chance image will be in focus
- f/22 - probably have infinite focus

Increasing DOF

- Focal length of lens affects DOF
- **Long** lenses (200 mm) = **less** DOF
- **Short** lenses (18 mm) = **more** DOF

- Distance-to-subject affects DOF
- **Farther** away = **less** DOF
- Get closer to subject with shorter lenses

Use A Tripod

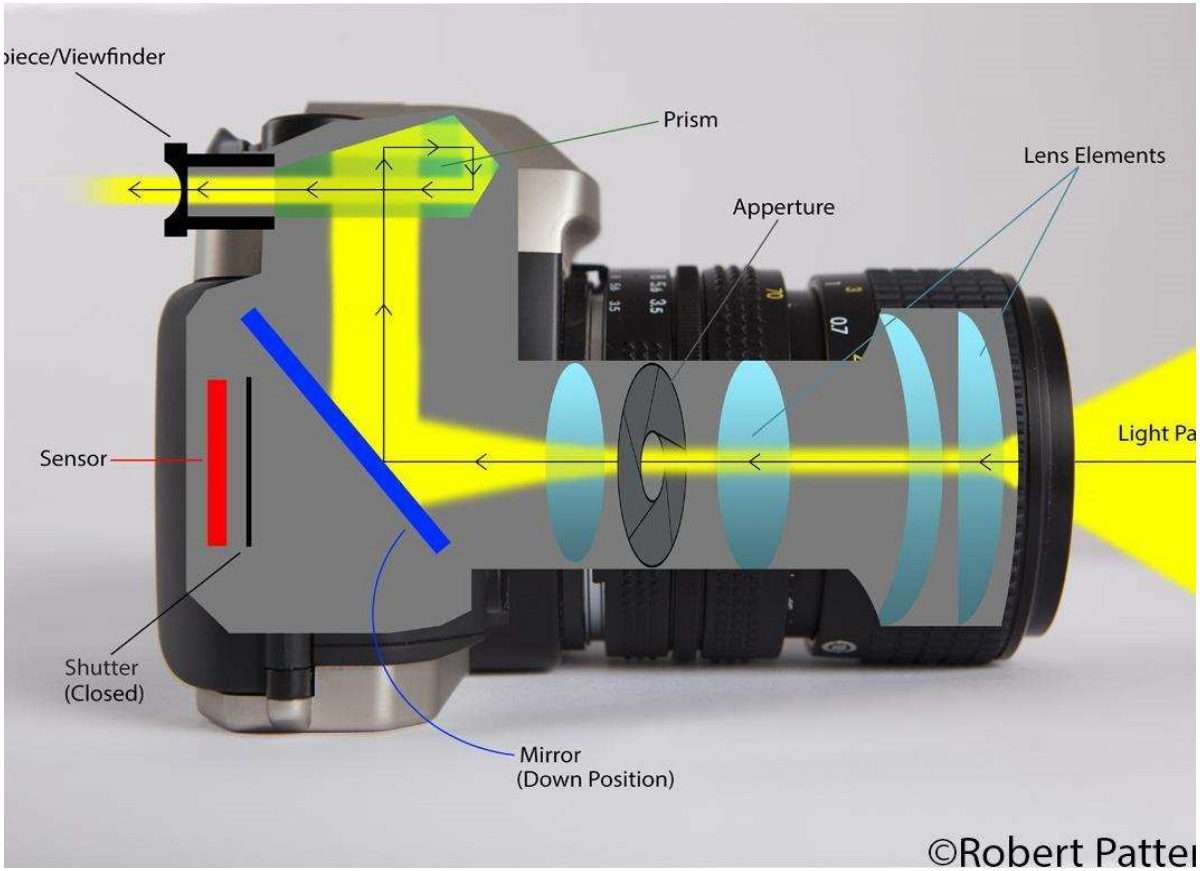
- Huge leap towards sharper images
- Don't use Optical Image Stabilization on tripods
- A must for longer exposures (night & low-light)
- Side benefit: better image compositions
- When using a tripod, keep both hands off camera *and* tripod when releasing the shutter
- If windy, weigh tripod (backpack or bag of rocks)

For those who refuse to use a tripod

- Hold camera touching a tree, telephone pole, park bench, etc. to steady it
- Maybe try a lightweight 8” foldup tripod
- Become comfortable with some blurry images

Hand-Holding Camera

- Develop a good "shooter's technique"
- Place one foot slightly **forward**
- Hold camera **underneath** the lens
- **Tuck elbows** in as much as possible
- Squeeze or **slowly** roll finger over shutter button



The **<u>shutter</u>** is the **BLACK** device (in front of the sensor) that opens allowing light to reach the sensor when the mirror is up and shutter button is pressed.

Shutter Speed

- Shutter speed affects motion
- Without tripods, **it's all about shutter speed**
- The **Reciprocal Rule** – use speed of at least the reciprocal of the lens focal length
- Don't forget the 1.x multiplier for C-sensors
- **1/1000 sec** for consistent sharp images

- When shooting flash at 200 or 250th sec, the flash lighting can be as fast as 1/10,000 sec

ISO

- Faster shutter speeds require higher ISO
- Ideally, keep ISO at **800 or less**
- Higher ISO = More digital noise (but noise reduction software is available and it works)
- Don’t be afraid to push the ISO up
- (I’ve used up to **16,000** successfully)

ISO 16,000 15mm f/5.0 1/60 sec

(Un-retouched – lots of noise)

Same Image
(with strong noise reduction)

Ask Yourself This

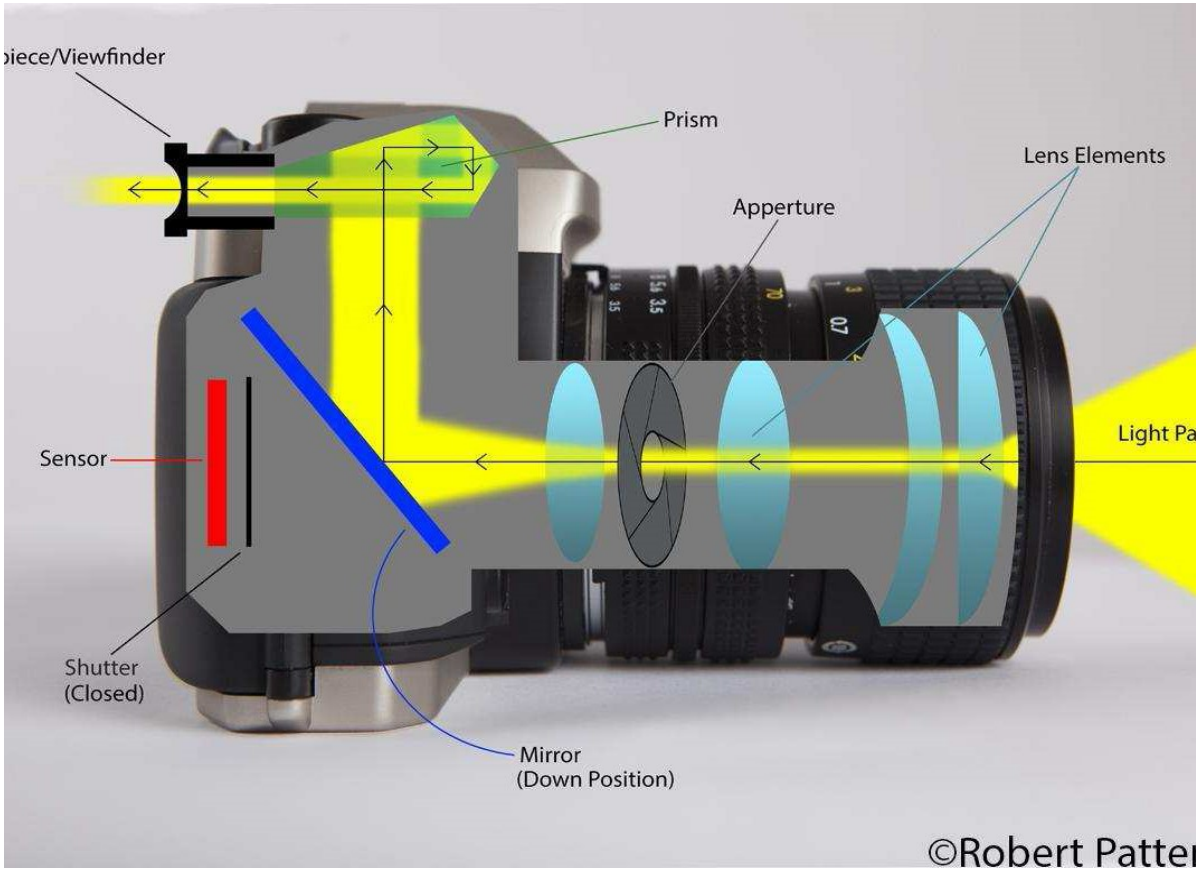
- Would you rather have a sharp image with some noise (from higher ISO) or a blurry image that is noise-free?

- Which is easier to remove with software (blur or noise)?

- Very difficult to remove blur

Do Lenses Really Matter?

- **Prime** lenses have a fixed focal length
- Prime lenses are noticeably sharper and cheaper than **zooms** but are less versatile
- More expensive lenses generally sharper (but not always – complexity cost **$$$**)
- Cheaper to use other photo techniques



The **<u>mirror</u>** is the **BLUE** device (in the camera) that directs light to reach either the viewfinder or the sensor. To allow light to reach the sensor, the mirror has to flip up when the shutter button is pressed.

Using Mirror Lockup

- Flips mirror up before shutter is pressed
- Use menu to find Mirror Lockup function
- Prevents camera shake after mirror flips up
- Without lockup, vibration affects **1/30** sec shots (watch out when taking waterfall shots)

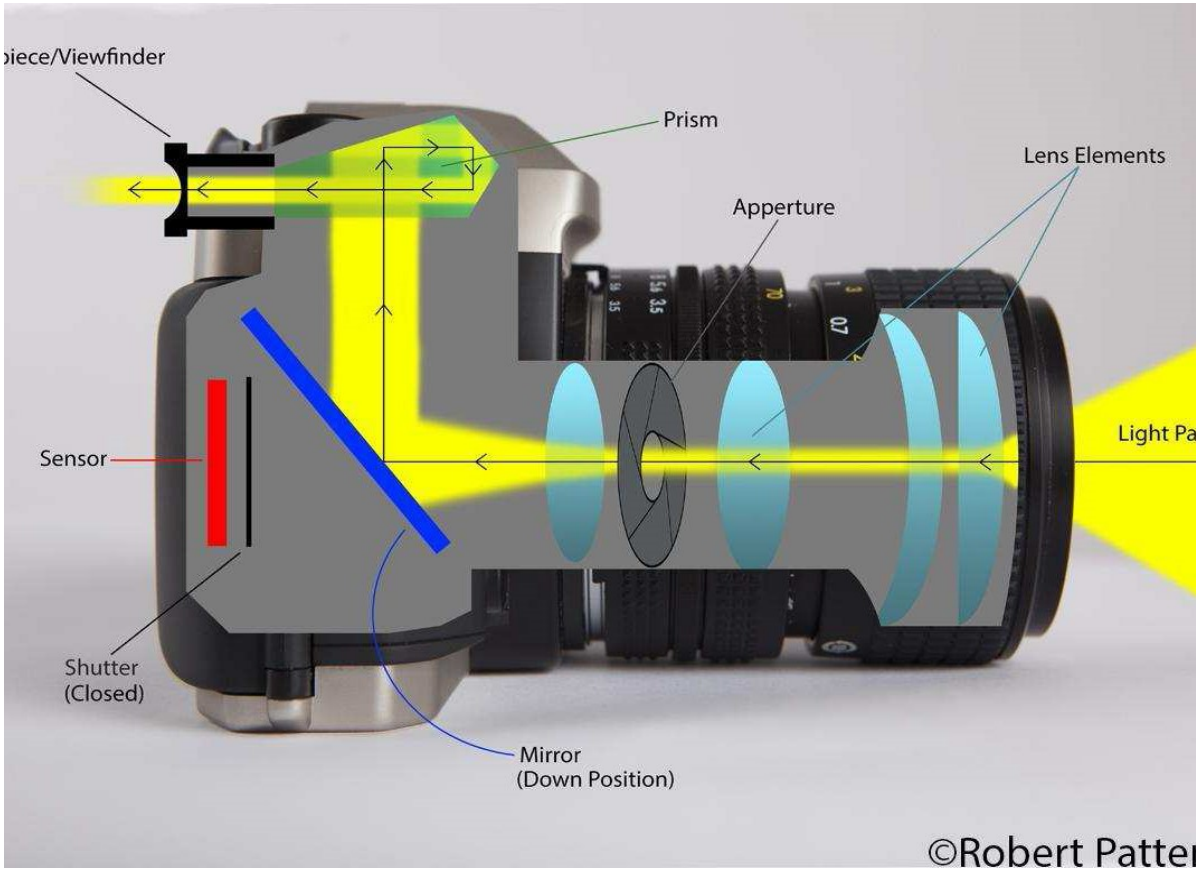
High-Speed (burst) Mode

- Use continuous shooting mode to take several shots in rapid succession
- This increases the odds of getting at least one shot that is “tack sharp”
- Google: **How to get “Tack Sharp” Photo Images by Brad Sharp**

Self-Timers & Wireless Remotes

(reduces tripod shake for sharper images)

- 10-Sec timer takes too long (except group shots)
- Camera's 2-Sec timer works great
- Cable release gets you away from the camera
- Wireless remotes offer greater distances
- Consider using remote to start camera's timer for group images you want to be in



In **Live View**, the **BLUE** **<u>mirror</u>** stays flipped up so the light reaches the sensor and the <u>image is projected directly on the LCD screen</u>.

Manual Focusing With Live View

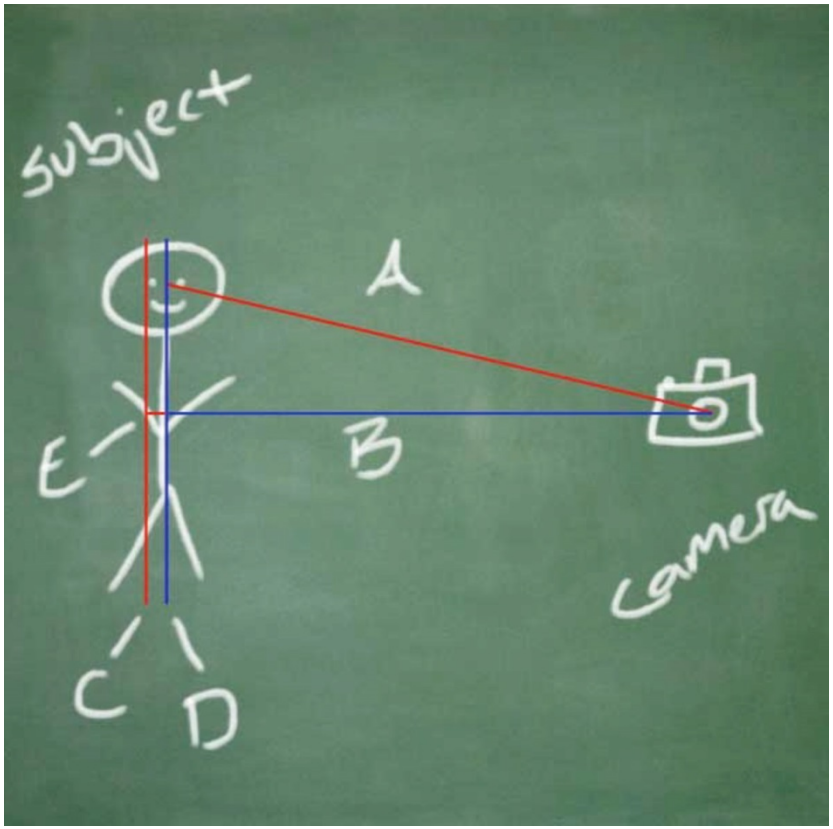
- Turn on **Live View**
- **Zoom** in to 10x
- Set **manual** focusing
- Adjust focus ring
- **Much** sharper than focusing than with a viewfinder
- Uses more battery

Rule of Thirds – Danger!!!

- Do you center the subject in viewfinder, press the shutter button half way down to focus, then hold the button and re-compose picture?

- Well, you're in for a little surprise!

Why ‘Focus-Recompose’ Fails

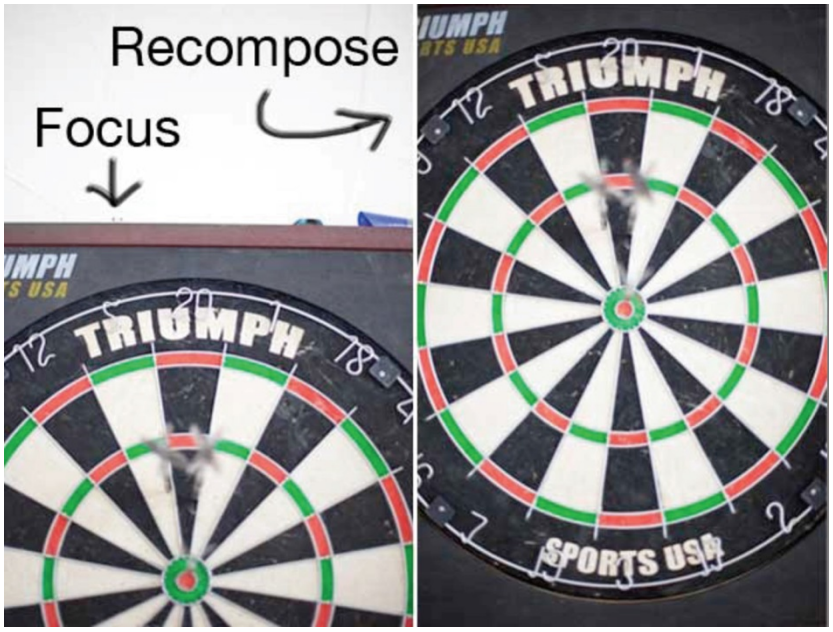


- A = distance to eye
- B = distance to subject after a re-compose

- A does **NOT** equal B
- therefore,
- Subject’s eye is *not* in focus

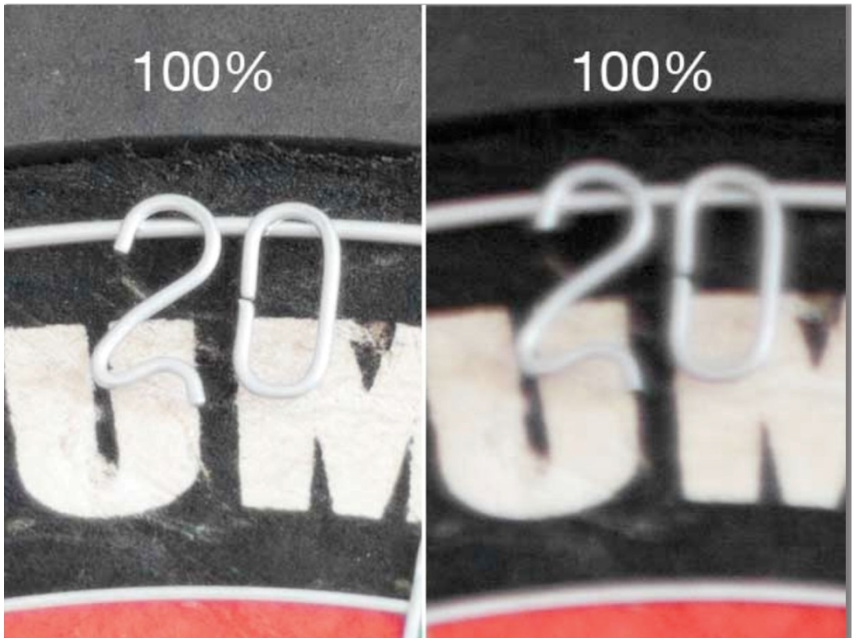
Proof That Focus-Recompose Fails

Focused on target's "20"
Recomposed on target's Bull's Eye



After image taken, "20" not focused

Before **After**



Advanced Stuff

- Finally, there's a way to really get sharp images and it's probably sitting in your camera without your even knowing it.

Back Button (AF-ON) Focus

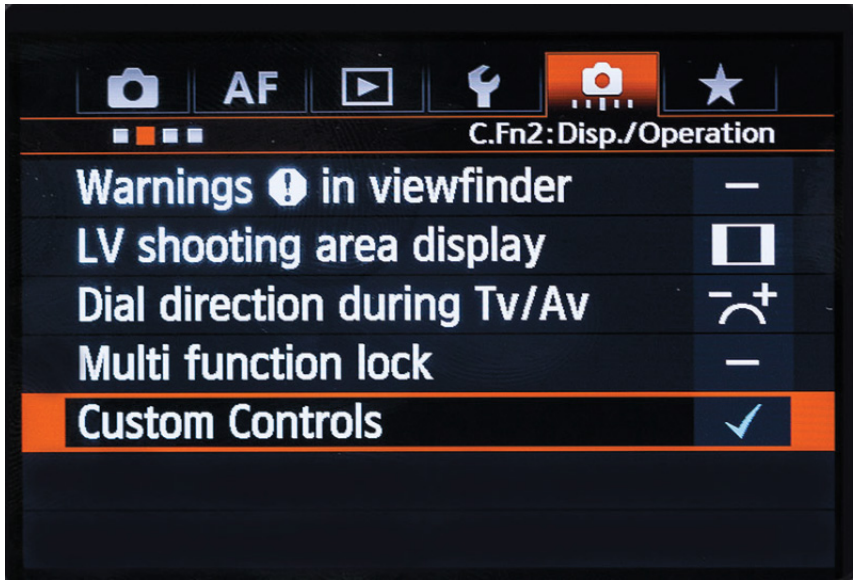
(or **AF-C** on Nikons)

Why Use Back Button Focus?

- Safe to focus and recompose scenes
- Timing – be ready for ‘the moment’ to occur (not a ‘Cialis’ moment)
- Full time Servo Focusing available
- No more switching (AI-Servo & One Shot)
- Never have to take lens off Auto Focus
- Still able to use Manual focus if desired
- Also – **Tack Sharp Images**

Activating the Back Buttons

(check user's manual for help)

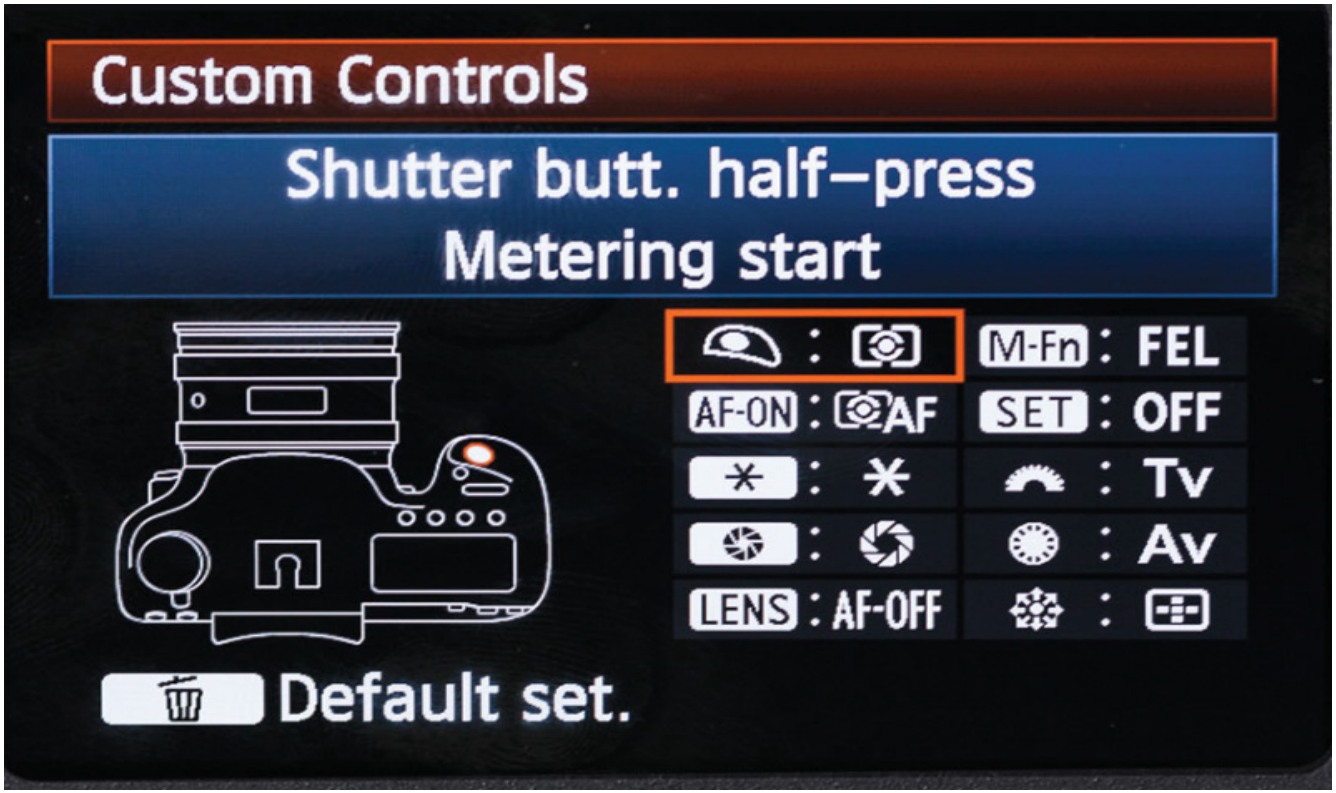


- --- For Canon ---
- Use 'Menu'
- Find Custom ***Functions***
- Find Custom ***Controls***
- Hit 'Set'

To Assigning Control Functions

- 1) Select camera button to change
- 2) Select function to assign to that button
- 3) Use 'Set' to make assignment *permanent*
  (until you want to change it)

Re-Assign Shutter Button



- Select shutter button (1st option)
- Hit ‘Set’

Assign the Function

- Select Metering start (2nd option)
- Hit ‘Set’

Re-Assign AF-ON Button
(AF start)

- Return to previous screen
- Select AF-ON button (2nd option)
- Hit ‘Set’

Assign the Function

- Select (1st option) Metering & AF start
- Hit ‘Set’

Re-Assign AF-lock (*) Button
(AE lock on 7D Mark II)

- Return to previous screen
- Select **AE lock** button **(‘*’ 3rd** option)
- Hit ‘Set’

Assign the Function

- Select (**5th** option) **<u>Metering Auto Lock</u> (<u>&hold</u>)**
- The ***H** icon
- Hit ‘Set’

??? Say Again Please ???

- We assigned the following:
- **shutter release** to the shutter button
- **start metering** & ***lock*** to * button
- **focusing** to AF-ON button
- AF-ON metering overrides the shutter button
- * metering & *lock* overrides the AF-On button
- Shutter button = only releases the shutter

Now, taking a picture looks like this

- Index finger on shutter button
- Thumb near AF-ON back button
- If desired, place subject in center of viewfinder and start metering & hold with * button
- Re-compose with focus point on subject
- If subject is stationary, tap AF-ON
- If subject is moving, hold AF-ON
- Press shutter button

Single Point AF

- Place selected AF point over subject's **eye**
- Hit (AF-ON) button
- Re-compose and take the picture

Set Up Single Point AF

Method 1 (default)

Use 2 controls to set AF point

Method 2 (new)

Set AF point with joystick <u>only</u>

Set Joystick to Control AF Point

- Select joystick button (last option)
- Hit ‘Set’

Assign Function to Joystick

- Select “AF point direct selection”
- Hit ‘Set’

How Does Single Pt AF Work?

- All the focus points use **lines** to detect contrast
- But, **all pts are not created equal**
- Some pts (called '**cross type**') use both vertical and horizontal lines to focus – **more sensitive**
- Others use only horizontal or vertical lines
- The *center* points are 'cross type'
- If having problems focusing with off-center points, use center point and re-compose

Servo Focusing (focus tracking)

- Good for wildlife, sports, or **things that '*m o v e*'**
- Locks on and automatically tracks the subject
- But wait there's more – it even 'predicts' where target will be when the shutter opens

AI-Servo in action

Shot taken at Clarke Co Fair of one of those “go around fast” things coming straight at me. I put the single-point AF on the girl’s face and fired. 70 mm lens at f/4.5, 1/125 sec, ISO 400, **AI-Servo**, hand-held Canon 7D.

The Focus Trifecta

- If you use servo, back button focus, and single point AF together, the result will be a dramatic increase in the number of sharp images you end up with.

- It may take a day to feel comfortable with the back buttons but you will end up with a lifetime of sharper images.

Moving Platforms

(Boats, Planes, Horses, Helicopters)

- Shoot with a **short lens** (Ex: 24 mm)
- Set focal length to just-short-of **infinity**
- **Shutter priority** at 1/1000 sec or faster
- ISO at 800 or less if possible (more if needed)
- Use optical image stabilization
- **Handhold** – No tripods here and don't rest the camera on the moving platform

Long Exposure Trick

(Image by James Brandon)

1-minute exposure at f/18 (gets light sparkle)

Quick exposure at f/2.8 (freezes boat movement)

Use Photoshop to blend exposures together

Now, Put It All Together

To Get Tack Sharp Images, try

- **Higher f-stop numbers** (for greater DOF)

- **Back Button focus** (for more control & accuracy)
- **AI-Servo** (if subject is moving)
- **Single Point AF** (on critical areas in image)

- **Increase shutter speed** (to reduce chance of blur)
- **Tripod with cable or remote release** whenever possible
- **Mirror lockup or Live View focusing** if available

Hope this helps

Any Questions?