

Canon EOS 7D Mark II

A field review

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INTRODUCTION

This new generation Canon EOS 7D MkII is probably one of the most anticipated Canon cameras for a long time. The first generation EOS 7D was well received when it was introduced in 2009 and it served its purpose well. But it was not without its shortcomings, and many felt it didn't offer sufficient superior performance over its XXD siblings, and more so when the 70D was introduced. It then became very apparent that a new model will be required; rumours were rife for many months, but the brand-faithful buying public had to wait in anticipation, and when their long wait was over, it most certainly was not in vain.

The new model overshadows its older brother in every aspect, from basic specification standards, to body design and build quality, to all-out performance in the field.

In the following sections I will provide an overview of the new model, discussing the important features and how they fared when used in actual field conditions. There are however some features which I did not test, having had limited time with the camera, such as live view and video recording.

SPECIFICATIONS

The full set of specifications for this new model are available on the Canon websites and I will not be going into a deep technical discussion on the intricate design elements and electronics of the camera. Instead I will only deal here with those design elements and features that played a major role during field testing and use of the camera.

General

The 7D MkII is a digital, single-lens reflex camera, with a built-in flash. The lens mount accepts Canon EF and EF-S lenses.

Dual Digic 6 processors are used.

The camera accepts CF Type 1, SD, SDHC and SDXC memory cards. Also compatible with UDMA CD cards.

Body design

With a magnesium sub-frame, weather sealing which is stated to be the best in class, a large 3" LCD panel and a comfortable and chunky grip which feels even better with the optional vertical grip attached the new EOS 7D MkII feels good in the hand. The basic control layout is very similar to the EOS 5D MkIII, but with the inclusion of a very handy lever type thumb switch which is fitted around the familiar joystick. This new thumb switch is used to change AF area selection modes, very nice and easy to use. This should be a regular feature on all new models using this area focus set-up, including the 1DX. I used this switch a lot when photographing motorsport to make it easier to track cars angling towards the viewfinder, or when parallel panning. Very handy also for a quick change from a single centre AF point for pin-point accuracy to a zone which is easier to handle birds in flight.



The weather sealing came in handy when I was covering motorsport and doing a fast AF action test with subjects close to the camera, using the Canon EF 24-70 f4 L IS lens, set anywhere between 24 and 50mm, tracking cars from the inside of a fast bend. At this point it had started to drizzle somewhat, and I was not able to leave my position whilst the race was in progress, just carried on shooting. Needless to say both camera and lens handled the damp conditions with ease.



The optional vertical grip is a must-have for me. The first 7DMkII which I handled, a Beta-release, was fitted with one, and being used to the 1D series I really missed the extra gripping and support area offered by this accessory on my test camera. It also holds a second battery, and this will also be really helpful. While Canon claims about 670 shots from a single charge of the new LP-E6N battery, I was out of power on shot nr 910 for the second time. The first charge lasted all of 360 shots, the second 550. Admittedly I did use the menu a lot playing around with set-up, viewing on the LCD screen, and so on. Also, I tend not to shoot in single shot and static AF modes, for just about all the photos taken were done on AI Servo mode and high speed 10fps with short two to four shot bursts. Quite a number of times I would track a moving subject but not take any shots, and the IS on my 500 f4 L was also on for quite some time when doing bird photography in the early, low light mornings. All of these could contribute to the shorter than expected battery life.

Sensor

The sensor is a new CMOS design, APS-C format in 3:2 ratio, and approximately 22.4x15mm in size. Focal length multiplier is 1.6x the focal length of the lens.

Resolution is 20.2 effective megapixels with a pixel size of 4.1 μm . Total pixel count is 20.9 MP. Full size images are recorded as 5472 x 3648 pixel images. Included are the normal RGB primary colour filters and a Low Pass filter in front of the CMOS sensor. The sensor is a self-cleaning unit which is activated when the power is turned on or off. In addition the Dust Delete Data system is also included. A manual cleaning function is also available in the menu system.

ISO range is from 100 to 16000, but expandable to 51200.

I found the sensor to be really good, recording colours and detail as good as can be expected, and better than most in its class. Control of noise on higher ISO is quite improved from the 7D, and very

useable images can be had on ISO 2000, and by this I mean print or display in higher resolution. Yes some noise reduction is required on these. At ISO 1000 and lower I didn't feel the need for any noise reduction.

The photo below was taken under stadium lighting at Supersport Park in Centurion on ISO 6400. The insert is a 100% crop. Noise is still very well controlled, and these photos could be used in editorial content for newspapers without any ill effects. Yes a little noise does show when viewed in full size, but these results are quite an improvement on the first generation 7D, my feeling is it performs about 1 to 1 ½ stops better and is very close to what I am getting from my 1D MkIV. Not quite up there with the 1DX and 5DIII but certainly the best APS-C camera by Canon.



Recording

Dual card slots are provided, 1x CF and 1xSD slot. The camera can be set to record on both cards simultaneously in either same or different file sizes and formats, or switch automatically to the second card when the first is full. Available are three RAW and eight jpg quality settings for stills images, whilst video can be captured in MOV format, (H.265, PCM linear audio), or MP4 (H.264, AAC Audio)

Since the camera was delivered without any software CD's or a user manual, I decided to set the camera to write large jpg files to one card, and full Raw to the other. 8GB cards meant I could write about 290 Raw images to a card. This set-up allowed me to get instant results for initial comparisons from the jpg files, (Picture Style set to faithful) and then when Canon had their raw convertor ready, I could compare them to the converted raw files. The results from these comparisons follow a little later in the review. I changed the camera setting to record Raw on both cards, and to switch over automatically when the first card is full when I could start to use Canon's DPP4 and Adobe's Lightroom 5.7.

White Balance

The standard white balance settings are included, and provision is also made for a custom WB setting.

For most of the time that I had the test camera, the weather was on a mission to make it as difficult for me as possible. Seasonal rains which should have occurred early September arrived in time for me to have one dry day and one evening for the whole of the first 9 days in middle November. Fortunately on that dry evening was the cricket match that I used as my first real outing with the camera, except for some playing at home getting the feel of the body. I decided to use the auto white balance setting and see how accurate the camera would get the WB under the difficult conditions of partly cloudy, setting sun with some influence from the stadium lights, to full darkness with stadium lights as the sole light source. Usually I would set a Kelvin setting of 4750 for this particular stadium and have to admit the AWB was very close. I had to fine tune some of the shots but really not by much, not more than 100 K. I would regard that as a good end result.

I also used AWB for the rest of the tests, which included birding, motorsport and macro with and without flash. Since all my outdoor tests were done under changing conditions of partly cloudy, to outdoor shade, to sunshine to overcast all in one session, the AWB setting certainly proved its worth, saving me from continuously having to monitor that parameter as well. In all I have to say the AWB is very accurate, easily managing the changing conditions with minimal adjustment in post processing.

Autofocus

Autofocus is by a new 65 point, all cross-type (at f5.6) AF system. The centre AF point is of the dual cross type at f2.8 and allows auto focus at apertures up to f8. This system is not too different from the AF system used in the flagship EOS 1DX. The array of AF points (in AF zones) covers a proportionally large area of the viewfinder.

The Dual Pixel CMOS AF also offers smooth and fast AF when the camera is used for recording video.

The Intelligent Tracking and Recognition (iTR) function found on the 1DX is also included in the 7D MkII. This feature is a real bonus to the sports shooter, it certainly assists the camera to select and place the most suitable AF point onto a subject tracked in the viewfinder.

The usual AF mode options are One-Shot AF, Predictive AI Servo and AI Focus. Personally I have never really seen the need for AI Focus with One Shot and AI Servo being the only modes I use.

The AF configuration menu include the same options as used in the 5D3:

Case1: Versatile multipurpose setting

Case 2: Continue to track subjects ignoring possible objects

Case 3: Instantly focus on subjects suddenly entering AF points

Case 4: For subjects that accelerate or decelerate quickly

Case 5: For erratic subjects moving quickly in any direction

Case 6: For subjects that change speed and move erratically.

Each of the case settings can be personalised for tracking sensitivity, accel/decel tracking and AF point auto switching. I used Case 4 and 5 most of the time, and found Case 4 the best solution for motorsports and birds in flight.



1/160, f13, ISO 200, 140mm



1/125, f18, ISO 200, 157mm

I always change the CFn to set the shutter button for light meter and trip only, and then use the AF-ON button for all AF activity (the so-called back button focus technique).

The AF system on this camera is very much improved on the older 7D and could well be one of the major selling features of this new model. I found it very fast and accurate in lower light levels, on static and moving subjects, using short focal length lenses and the long tele-primers. I could acquire focus and then track fast moving race cars with ease and accuracy, using my Canon 500 f4 L IS, Canon 24-70 f4 L IS and my Sigma EX 120-300 f2.8 lenses. I feel the focus lock-on was a little quicker than what I got from the 5DIII when shooting rugby, but then again I couldn't test this 7DII on rugby as the local season is done and dusted so can only really compare with motorsport and birds in flight.

When light levels dropped and a slight drizzle started, the 24-70 f4 L was in use and still easily tracked close-up shots of race cars, or at more distance with the 120-300 f2.8.

Panning race cars moving parallel to the sensor plane was accurate and easy, a 10 shot series of a car drifting wide and into the sand trap kept 9 of the shots sharply focussed. Using the Canon EF 24-70 f4 L IS and some close action, I managed 3 and 4 shot bursts losing one shot in the sequence due to not focussed, which under those trying conditions again is very good going. Fast moving and changing of direction from subjects close to the camera is always a very testing environment for a camera, more so than subjects at longer subject distance.

The 7DII did really well on motorsport, confirming my initial assessment that this camera will be high on the wish list of a sport shooter.

At a local bird sanctuary I tested the camera with my Canon 500 f4 L IS on birds in flight. Static shots were focussed accurately and with quick lock-on as one would expect. Picked on an Egyptian Goose flying head-on towards me at a rapid rate of knots, the camera acquiring the subject and continuously tracking the bird until it completely filled out the viewfinder. Only shot nr 7 is not sharply focussed, and shot nr 8 shows the iTR in action, keeping the AF points on the subject even though he suddenly veered upwards catching me unawares.



As I have stated before, this AF system is really very good. Combined with a fast lens the camera makes a super combo for the action shooter.

Shutter

The shutter is a typical mechanical, vertical travel focal-plane shutter. The speeds range from 30 seconds/bulb to 1/8000 and is electronically controlled. Flash X-sync is at 1/250

First thing I noticed is how quiet this shutter is, even without enabling silent-shooting mode, done through the menu. A bird shooters dream and one of the quietest shutters I've experienced on a D-SLR. I like it! Shutter lag, or rather the lack of it, was more than acceptable, one does not get the impression that is any appreciable lag, certainly never bothered me. Same as I would experience from any of my 1D bodies and the 5DIII, you will have to measure electronically to quantify the difference in lag between this and any other top range body.

Drive system

Another big feature offered with this camera, the most rapid APS-C sensor D-SLR with frame rates up to 10fps, previously speeds like these was only available in pro bodies. Setting the camera to silent shooting does drop the frame rate to 4fps in continuous mode. A low speed setting with a default of 3fps is also available, as are single shot. The 10fps is reachable only with a shutter speed of 1/1000 or faster.

I used the camera in high speed continuous most of the time, with the odd single shot setting every now and then. Silent mode is effective, but with the quiet shutter I didn't really test the camera in this mode.

LCD Monitor

The LCD monitor is a 3" TFT type, 1.04 million pixels and is not a touch screen. Viewing is easy with clear and bright image displays.

Viewfinder

The viewfinder is clear and carries a full complement of settings on view, including the electronic level, the parameter set-up, exposure and flash exposure, file type, WB, drive speed, focus mode and a few other settings. Yes it is easy to read and does not appear cluttered at all. The focus zones and focus points are clearly visible, without being distracting. I like the viewfinder, and it did appear to be brighter than my 1D4.

File conversions

As said earlier, I didn't have a Raw convertor for the first week that I had the camera. I therefor opted to record all photos in both Raw and largest jpg settings (Picture Style set to Faithful), onto two different cards with the idea to compare the in-camera jpg files to the output from a suitable Raw Convertor, which turned out to be Canon's Digital Photo Professional 4 and Adobe Lightroom 5.7. The 7D2 produced very good in-camera jpg's, better than what I am used to seeing, but still not comparable to the output from DPP4 and more specifically LR5.7, which is to be expected. The in-camera jpg's were developed further in DPP4 and LR5.7 which did go some way to improving them even more. But the developed Raw files from the two software applications still was the best, with the more functional LR5.7 getting the nod in fine-tuning during development of my raw files.

Conclusions

The Canon EOS 7D Mark II is a very nice camera indeed, well built, good ergonomics, good menu layout, good controls layout. It performed very well in the field under some rather trying conditions

and came out tops, every time. The fast frame rate, combined with the very good AF system and better than average for class noise handling capabilities make this camera a very real option for the sport- or wildlife and nature photographer. Canon has produced a winner here.

Many thanks to Canon SA for arranging and making available the test camera.