



Richard Costin

www.richardcostin.com

Practical review of the Nikon D3 DSLR

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Before I kick off, it is important to mention that I have no affiliation with Nikon or any other camera manufacturer. I had to pre-order at full price and wait patiently like everyone else. If it is no good I have wasted my time/money and there will be a D3 on eBay. Please also note the pdf converter for some reason plays funny games with the image colours, which may appear a little off compared to what I'm seeing.

All the views and opinions within this text are mine base on actual use

Five months have passed since the announcement of Nikon's new flagship DSLR and its sibling the D300, with an amazing amount of hype surrounding both of these cameras. I had several opportunities to handle pre-production models and each time made it made me more impatient to get my hands on it. I received mine in early December and it has been my primary camera since then. Please note all of the images taken and presented for this review have had minimal Lightroom processing from RAW and NO noise reduction.

Listing all the features and specs here would be a little pointless as it has been covered extensively at the usual tech web haunts. The manual and brochure for this camera are also available on the Nikon website as a PDF download which should help answer any questions about the specs far better than I can list here.

My method for reviewing this camera will be to simply use it as I would normally, mostly outdoors and report my findings. Just a to give you some perspective; I am (currently) a serious amateur with my primary focus now being wildlife photography. I earn my pennies working as a 3D animator at a London based visual effects company called The Mill.

Lastly, please note this is an initial review of the camera. A machine like this takes time to fully explore and I may add to this review as time goes by and I discover more about it. So this first revision is entirely my initial impressions.

Anyway, enough about me, and on to the star of the show...



The camera itself, initial impressions

Upon picking up the D3 you can instantly feel it's quality. It is pro build through and through. Very similar to the D2X(s), but slightly larger. Nikon are well known for their great ergonomics and this is no exception. I believe it could hammer in my tent pegs if needed.

As is usual with Nikon bodies, all the controls are well placed and designed to allow you to change almost everything without taking your eye from the viewfinder. Photographers coming from the D2X(s) will instantly feel at home with only a few subtle control changes. Those coming from the D200 or even the D80 will soon be up and running as many of the controls are shared between the entire range of Nikon DSLRs.

One of the first things to strike me was the LCD screen. It is easily the best I have seen on any DSLR thus far. It is a plentiful 3" and has a very high resolution of 920,000 dots (vga).

Checking focus on the back of the camera is a much more viable option now than on the D2X(s)/D200, but excessive chimping is a bad habit which I am always trying to kick.

How the colour matches a calibrated monitor is something I will be comparing, but as I always shoot raw it's not a critical factor at this moment. It is also great news that the D300 has this same screen.



Holding it in your hand and everything feels perfectly crafted yet durable. I should also mention the body has Nikons great weather sealing all over, with the exception of the lens mount which requires a sealed lens for that area to be protected. I have used both the D200 and D2X(s) in heavy rain and although I always do my best to protect it (C.80 rocks!), they have got very wet and not missed a beat. I see no reason for the sealing to be any less effective than on previous cameras. If I have a problem I'll shout it from the rooftops but I trust Nikon on this.

All in all, I am very pleased to see that Nikon have taken the, if it 'aint broke don't fix it approach. One thing that should be mentioned is that the D3 does not (unlike previous Nikons including the D300) come with a plastic LCD protector attachment. I am assured by Nikon that the screen can take much punishment, as it is now manufactured with "tempered glass". I don't treat my cameras very well and will be looking for a little extra protection myself in the form of an "invisible shield" protection film for peace of mind. I have also heard a reliable report of one reviewer actually trying to scratch his with a knife and failing. I'll take his word for it though ☺

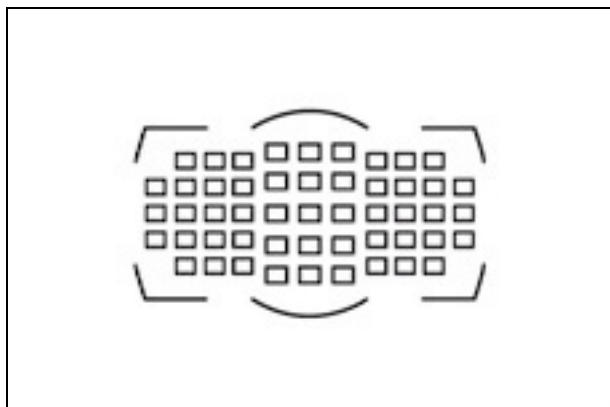
The all new autofocus system

One of the most touted features in the D3 is the all new autofocus system, the "Multi-CAM 3500FX". It is clear upon initial use that the AF system is implemented completely differently from that of previous Nikons...

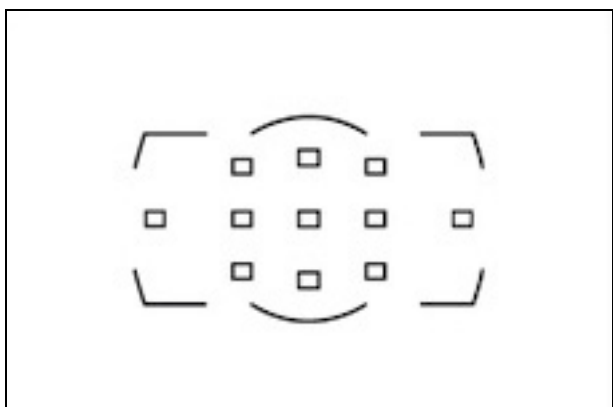
Rather than seeing a deluge of focus points through the view finder, you are presented with a clear unobstructed view of your subject. In single point mode the selected point is alone in the finder. In automatic AF point selection mode the active focus points only briefly become visible either when you select one, or when it *initially* locks it's focus onto something. Unlike before you can't see inactive points as a thin outline. At first this is a little off-putting, but do you really want 51 points getting in the way of your subject all the time? No.

Another nice touch is that if multiple objects in space are in focus, (i.e the same distance from the camera) it lets you know by lighting up multiple points across the entire sensor (in single shot focus mode). I was not expecting this and was pleasantly surprised during use. When 51 point 3D tracking is activated and the dynamic point mode is selected, the camera shows you the point that is currently in use which then dances around the finder as your subject moves when the AF is activated (in continuous mode). It actually does a very nice job of following the initial point of focus when testing indoors. How it will cope in the real world we shall see.

Below you can see the 51 densely packed points available to you, all of which are enclosed in a thin border which is always visible. You have modes for only selecting either all 51 or 11 in single AF mode and 9, 21 or 51 point in dynamic mode.



51 point mode



11 point mode

One initial concern I had when looking over the D3's specs was the placement of the auto focus sensors. As you can see from the above diagrams, the sensors are quite tightly packed into the centre of frame, more so than the DX sensor of the D300.

However, I am glad to report that having now used the camera I have found this not to be a significant problem. The coverage is more than adequate and I had no trouble locking onto and tracking flying subjects with the system, even with off centre compositions. Objects that left the point cluster seemed to often remain in focus with the correct points lighting up upon it re-entering the area. Further testing will hopefully reveal what's going on. You never know, I might even read the manual!



The AF point coverage was more than enough for this off centre composition.

There are the usual M,S,C modes for manual, single and continuous focusing respectively. One change Nikon veterans may notice is the removal of group dynamic area mode, leaving only regular dynamic mode. This, for me at least is welcomed, as I never used group mode which limited the sensors used to the general area of focus rather than tracking over the whole frame. One less setting to accidentally put the camera into! Macro/bug photographers may miss this though, but probably not. You can also put the camera in full auto mode whereby it decides what to initially lock onto and track.

As is the case with all recent high end DSLRs (Nikon or otherwise) the AF system is highly customizable. All the usual options are there for selecting lock on time and whether you want fps or focus priority etc. There is also a deluge of new and altered options available on the D3, which I will be testing individually to determine their effect on performance when the fancy takes me. One thing to mention though is that the locations for these options are more logically located and named in the menus than before. Worth noting is that the custom menu section in the menu now much more useful and customizable than before.

The switch to flick between **Manual**, **Single** and **Continuous** focus modes is in its usual place next to the lens. This has been the source of some talk amongst users for a while now, some of whom seem to have the problem of knocking it into other modes by accident. I have never had this problem but to me this switch is stiffer and more positive in its movements than on previous models. This may be due to the newness of the camera (it probably is) so time will tell.

The AF in use

The first lens to attach had to be one of my personal favorites, the AF-S 70-200 f2.8. This is a great lens to handle and the optical quality is top notch. The AFS motor inside ensures positive, snappy focusing and it covers the full frame on the D3's sensor. A great match for this camera.

After a few hours use I got the sense that the D3 was outperforming the D2X(s) and D200. Lock-ons were quick, positive and the camera held the focus well even with distracting backgrounds; assuming you initially managed to get a point on your subject. No it wasn't perfect every time, but no system is.

The real results, checking the files back on the computer yielded a far higher number of sharp in flight images than I would normally expect to achieve with the D2X(s) or D200, (not that those systems were slouches by any means).

One area that seemed significantly improved was that of low light/contrast lock-ons. With the D200 and D2x(s), I was very used to predicting when the camera would hunt and allowing for it. The D3's AF feels much more able with low light/contrast subjects. This is a subjective feeling at the moment and will need proper side by side comparison to make sure I am not simply suffering from NCF (New Camera Fever).

Most of this initial testing was done on larger birds and I am hoping to give it a really good work out with some of the smaller raptors soon who specialize in giving photographers high blood pressure.

One interesting thing not mentioned in most tech documents for this camera is its detection in full auto focus mode. I have been shown examples by Nikon of how the focus system detects human skin tones and sets the focus there when left to its own thinking. I have yet to test this but it holds interesting potential, especially for pap and sports shooters.

A minor problem I have encountered is that the thumb dial for switching AF points is *still* a little too far to reach for my liking when using the camera in vertical mode. A more centered location would have been better. But it is not so far that it is unusable.





The AF was locked onto this fine bird during flight and held it till landing, even with the trees in the background fighting for the limelight!

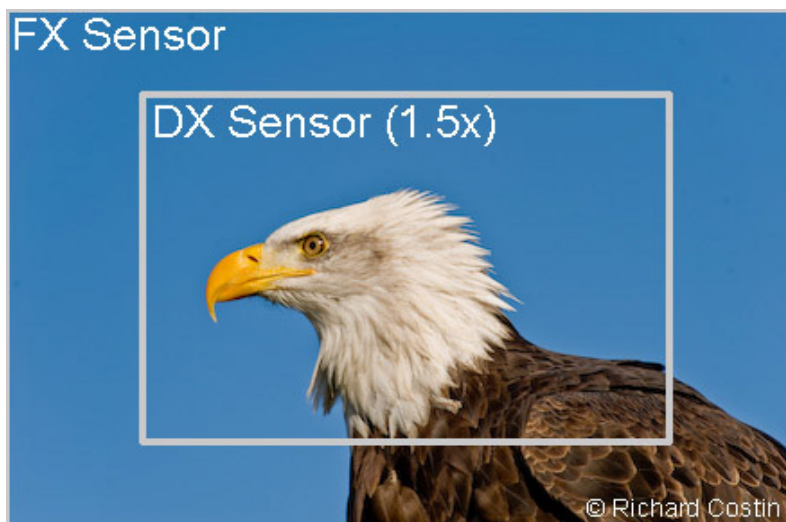
As touched upon earlier, there is the 3D tracking option. Nikon have taken their existing 1001 pixel metering sensor and tied it in to the AF system. This offers additional help to the AF system with object tracking based on colour and shape. This was fun to play with indoors but how does it cope with raptors doing their thing? Well I must say it was pretty effective. There is a little trust going on here as you can't watch the dancing point and keep an eye on what the bird is doing at the same time. I will say though that if you got the initial point over your subject; it would take something pretty special to distract the point away from it. Most of the time.

Just quickly whilst I'm on the subject of the metering sensor, all I need to say is that exposure is controlled by Nikon Matrix metering. Good stuff! This D3 if anything exposes a little brighter than my other Nikons, but there might be a good reason for this as you will see later.

Looking through the viewfinder is a big change for Nikon (digital) users. The view is huge, bright and the 70-200 has lost some of the reach it had on the DX cameras. Those coming from canon full frame sensors will be used to the larger finders but for us Nikon users it is a big change.

If you place a DX lens (one designed specifically for the smaller sensor size of the previous Nikon DSLRs) the camera will detect this and automatically crop the viewfinder. This is very handy, but can be overridden in the menu. The downside is however that with a DX lens attached you are only using the centre portion of the sensor. This will result in you only achieving 5 megapixels in the resulting files. But it does show Nikons continuing commitment to backwards compatibility which they are well known for with the F mount.

The lack of DX reaching (or cropping technically) power has been a concern of mine from when I ordered the camera and almost made me head to the D300; as in wildlife photography normally the longer the better when it comes to lenses. This one potential downside however is offset by all the advantages full frame brings to the table as you will see. Plus it offers the opportunity for some amazing wide habitat shots. I can always stick a longer lens on if really, really needed.



Comparison of the FX and DX sensor physical sizes.

“Crop factor” is something I will cover in a separate article, as there is a lot of confusion surrounding just what it means if you are new to it all. Here is a quick explanation to help you understand the differences...

Firstly “FX” and “DX” are simply terms created by Nikon to describe their sensors. FX is the same size as old 35mm film and “DX” is 1.5x smaller.

Basically the full frame FX sensor spreads its 12 megapixels out across the larger area above. All other Nikon DSLRs use a physically smaller sensor. The D300 spreads its 12 megapixels across this smaller area. This has implications for image quality, (both pros and cons) but the **effective** outcome is that you put more pixels on a smaller portion of your subject, as if you zoomed in with your lens on the FX sensor by 1.5x.

One advantage that FX lends itself is that because its 12 megapixels are spread over a larger area, each pixel is bigger. This means that they can collect more light in a given period of time. Photography is all about collecting light, so the more light you can collect in your given exposure, the better. There are many good articles about the advantages (and some disadvantages) of full frame sensors online. Google is your friend!

One all new feature I will briefly mention is the ability to fine tune the auto-focus yourself for individual lenses. I have yet to try this feature, but I see this being very useful for macro photographers and those with a very large, eclectic collection of lenses. Presets can be saved per lens. I may check it out at a later date, but only if I have a problem. Remember, if it 'aint broke...

Now onto the feature that has created the most buzz since its announcement...

Image quality, DX to FX

Nikons have traditionally got a lot of bad press (well forum babbling) for their higher iso performance and whilst there is some truth to this it was only really noticeable when the new breed of canons came out, (and the 5D, to be fair had this to it's advantage). The 1D mkIII especially was pulling away from the competition, which was announced a year ago at PMA in Feb 2007.



ISO 200 – Nikon's excellent matrix metering handled this situation beautifully



The D3 utilizing the Nikon's excellent flash system (SB-800 Flash unit)

At it's optimum ISO level (200) and assuming good exposure there is no noise whatsoever and a good 1.5 - 2 stops of pushing before *any* real artifacts crop up.

One thing that became very clear when first looking at a D3 RAW file is just how much you can push them exposure wise. The latitude available is astounding and I actually have to try to blow highlights in most situations when shooting raw. This is shown below. I had the exposure compensation on for the flight shots as it was a bright day and forgot to reset afterwards (doh!). The first shot shows the image strait from the camera, horribly overexposed and the second is a 20 second corrected version, using only the exposure, recover, fill and vibrance sliders in Lightroom.



Original shot, over exposed



Shot after about 20 seconds of processing in Lightroom

Amazingly not a single pixel was blown in the raw file once the histogram was shifted to the left. This camera will be ideal for people who like the "shoot to the right" method.

As you can see the files play very nicely in post processing, but if you have to push a file too far you will eventually get a halo type effect around edges (amongst other artifacts). This problem only occurs if you really, really crunch the dynamics both ways in post. This highlights the fact it is still important to get it as right as possible in the camera. Below you can see the results of deliberately crunching the file into oblivion!



Normal processed raw



Crunched, but note lack of shadow noise

Now the biggie...

ISO performance

I'll simply show you a comparison with the D200. These are from raws @ **ISO 2000**, with ***all noise reduction and sharpening turned off in camera and in Lightroom.***

Please note that the 70-200 was zoomed in a little on the d3 to compensate from the crop factor difference. Each camera was also set to the same aperture and shutter.

Here is the scene in its entirety (from the D3) and the 100% crops are on the following page.





Well, the results speak for themselves don't they? The D3 destroys the D200 in terms of visible noise and detail retention. There's the slightest hint of colour noise in the D3 shadows, but that can be removed in post with no quality impact and there is no need for anything but the slightest touch of luminance noise reduction if that.

Sharpening

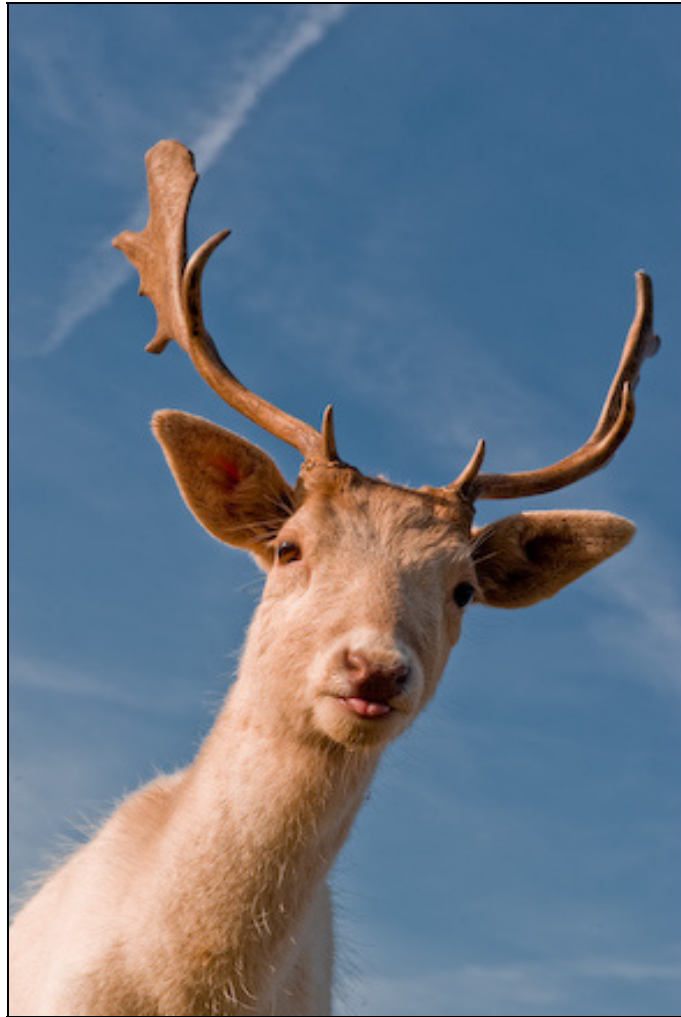
With all the rumors of the quality of the sensor floating around I was a little disappointed with my first pixel peeping, (yuk, but when you gotta peep you gotta peep); however the D3's raw's play VERY nicely with sharpening and it is a *vital* step to get the most from these files. The amount you can sharpen is a testament to the per pixel quality of this sensor. These are at ISO 200...



The full image



100% crop with sharpening



*The above image was with the D3 and the **excellent** new Nikkor 24-70 lens.*

Continuing up the iso ladder, the amount you can push your raws in post decreases, but this is to be expected and is a whole other world compared to what has come before. Wildlife and nature photography usually limits you to natural, available light and often the best time to shoot is dawn/dusk when the light is low.

There is no doubt that being able to confidently shoot at 1600 and beyond (keeping your shutter higher or your depth of field greater) knowing the images will be salable from a technical aspect is going to open up some new opportunities for a lot of people. Not forgetting the added bonus of giving your flash more range. Many photographers will greatly benefit from what the D3 brings to the table in terms of image quality. The pre-release hype about sensor and its noise (or lack thereof) looks to be justified.

This is all good news for everyone, even those in the Canon camp who I'm sure will get a response to the D3 before too long. The 5D is due an update and the "blue dot" 1D mkIII cameras are starting to come back from the repair centres.

The fx sensor processes at 16 bits internally and is capable of saving 14 bit and 12 bit raw files. When looking at the raw files, the colors and tones are very well rendered with smooth graduations and impressive dynamic range. The images just seem to have more depth to them than before, (both in 12 and 14 bit modes).



The D3 handles graduations and tone beautifully.

The following is an area that is a little subjective but after peeping on screen and examining large prints I am seeing no real difference between 12 and 14 bit raw files from the D3. Even after severely pushing them up or down in Lightroom I couldn't reliably tell one from the other. Does this mean it's all a marketing con? Well not really. The images defiantly benefit from being processed at 16 bit, (a 12 bit file from a 16 bit master will look better than one that was 12 bits all the way).

There are also 3 compression options for your raws, uncompressed, lossless and compressed. Lossless compression means that once it is opened, it will be 100% identical to it's uncompressed state. This option reduces a 14 bit raw from 24.8 meg to 15.4 meg with no loss in quality. To that end I doubt I will ever use uncompressed.

The lossy compression option that takes the raw further down to 14.4 meg. This method throws away data that it computes you won't miss and works very well. I noticed almost no difference. I will stick to lossless however, as the file size savings aren't large. Another benefit of the smaller raws is that the buffer clears quicker. You don't get many additional frames for the initial burst (18 for 12bit Lossless raw) as the data all comes from the sensor at full quality to start with whichever mode you save.

I use Sandisk extreme III and IV cards, the latter of which performs very well and clears the buffer from full in about 25 seconds. The top of the line Sandisk Ducati cards offer slightly better performance, but not enough to warrant the extra cash IMHO.

The main reason I will shoot 12 bit as opposed to 14 is as mentioned I can see no difference, but also lossless compression drops that further from 15.4 to 12.5 (with lossless) letting me cram more on my memory cards and save on hard drive space later. I'm sure a comprehensive test between 12 and 14 will pop up online somewhere but several other reviewers have noted the same too.

Those supplying demanding agents should not worry, the D3's raws play very well with upscaling and even with slight cropping should hit the mark. Having more pixels to play with would help a little here, but you would then loose performance in other areas, of which are more important, (to me at least).

The long and short of it, don't worry that it's only 12: quality over quantity. I am very interested in how this will compare to the new Canon 1DS mkIII 21 megapixel beast. I'm sure the canon will out resolve in pure detail at lower isos but I suspect the D3 will outperform in most other areas. It will be interesting to see how users of both systems rate each camera as people get their hands on them.

Another all new feature worth a quick mention is live-view. This will be handy for above or below head shooting, especially when lying flat on the ground and wanting to keep your movement to a minimum. A great point to note is that autofocus and metering is available during live view, albeit in a clunky, (yet necessary due to the design of SLRs) manner. The LCD has a viewing angle of 170 degrees, so can be viewed from harsh angles.

This following feature is one I always said I wanted in the next Nikon flagship and it's here...

Dual compact flash slots, with a load of configuration options. In off the red!

The options available are as follows...

- Backup mode which records the same raw (or jpeg if in jpeg mode) to both cards. Yesss! You can never be too careful about your images, (see my review of the G-Safe raid hard drive). This in itself is a good reason for pros to get this camera. Fact, digital storage fails! Cover yourself as much as you can.

- Alternate backup mode with Raws on one card and jpegs on the other. Good for giving clients quick access and then only having to process the selected images.

- Simple overflow mode where the camera fills one card up, then moves onto the next. Good if you need to shoot volumes of data and don't want to have to stop to change cards or a working in harsh environments where exposing the camera inners is a bad idea.

- You also have the option to copy the contents of one card onto the other manually.



A big thank you to Nikon for making the secondary slot compact flash and not using two separate card types. CF cards are more durable and easier to handle with gloves on. They also outperform their SD cousins.

There is no denying it, this is an expensive camera aimed squarely at demanding pros and very serious amateurs, but is it worth the price tag? Based on my experiences thus far, Yes. Expensive it is but you get so much camera for your money. Especially in contrast to Canon's £6000 megapixel upgrade, the 1Ds mkIII (not to say that that isn't a fine camera, but it's not for me).

All in all Nikon have delivered big time with the D3, and it represents definite milestone in DSLR history. When paired with the 200-400 I feel this now represents one of the best combination for wildlife photography that has ever been available. It is becoming clear that Nikon weren't lying when they said this camera was designed exclusively based on real photographer's requests, needs and feedback. Not perfect, but damn close!

Nicely done, thank you Nikon!

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