Recommendations for in-camera settings for aviation photography – Nikon D100, D200, D300, D800, D7200

Content

1. Introduction

This guide is meant as a basic guideline for in camera settings that I found useful on the 3 camera types listed, when using them for spotting. The settings are focused on the jpg shooter. IFor the RAW shooter many things are not as important, as the settings can be altered in the editing of the RAW file.

While I only used the 3 cameras listed many tips could be useful on other Nikon DSLR cameras of the same generation.

Behind each recommended setting you will find the page of the cameras manual where you will find more about that setting and how to change it.

If you have a non US manual for your camera, you can download the US version at http://support.nikontech.com/app/answers/detail/a_id/13948#Anchor-21683 so you can compare the pages listed here to the manual in your language.

1.1 Understanding P* mode (for all cameras)

Many experienced photographers will tell you that you should never let the camera take control of the exposure, which is basically correct, however Nikon offers a good compromise between control and safety with the P* mode.
P* allows you to customize the P (Program mode) by rotating the main command dial. You can set it to use to use faster shutter speeds or small apertures. The good think about that option is that the reaction to changing light conditions is instant. So a suddenly moving in cloud or a dark coloured aircraft do not need any manual influence by the user. The camera will adjust shutter speed and aperture as needed. With P or A mode one setting is fixed. The camera changes shutter speed and aperture, but also considers if you wanted a faster shutter speed.

Say we are starting at ISO 200, 1/1000th and F8 suddenly a cloud moves in.

P* would adjust to 1/800 and F7.1
A would adjust to 1/640 (or lower) and F8
S Would adjust to 1/1000th and F6.3

For spotting I recommend the following settings:

D100: 2 clicks to the right (towards faster shutter speed)
D200: 3-4 clicks to the right (2-3 for a VR lens)
D300: 3-4 clicks to the right (2-3 for a VR lens)
D800: 4 clicks to the right (3 for VR lenses)

2. D100

The D100 was the first affordable semi-professional Nikon DSLR. It features a 6MP CCD sensor and is based on the F80 film body. It features the CAM900 auto focus module, which offers 5 AF sensors (one cross-type).
Recommendations for the D100 could be useful for the D70, D70s, D50 and D40.

2.1 Basic settings

Shooting Mode: Continuous	**P41**	
Image Quality and Size: JPEG fine (or RAW if you want to use RAW)	**P43**	**P136**
ISO: 200 – whenever possible	**P48**	**P139**

Compared to today's standards the D100 is noisy, so I do not recommend going much higher then ISO 200, if you are planning on up-loading your shpts to the aviation photo databases on the net.

White balance: Auto -2 or Cloudy -1	**P50**	**P138**

The automatic White Balance of the D100 is known for its green colour cast. It is recommended to use a warmer setting the usual to counter this. Taking a PRESET WB is a good idea under difficult light conditions, as is shooting RAW under such conditions.

Image Sharpening: Normal	**P58**	**P140**
Tone Compensation: Normal	**P59**	**P141**
Colour Mode: sRGB	**P60**	**P142**
Hue Adjustment: 0	**P62**	**P143**
Focus Mode: C	**P63**	
AF Area Mode: Dynamic Area AF	**P65**	
Metering: Centre weighted	**P75**	
Exposure Mode: P* works good and can an alternative to A and S	**P76**	

2.2 Custom Settings Menu

EV Step: 1/3	**P151**
AE-L / AF-L: AE-L Lock only	**P154**

Grid Display: On **P157**

Dyn. AF AF-C: Select AF Area **P157**

3. D200

The Nikon D200 replaced the D100 in Nov. 2005, It has a magnesium alloy body, which is weather sealed. The sensor is a 10MP CCD: The AF has been improved to CAM 100 with more focus points and much better accuracy. In addition the matrix metering mode is now capable to recognize colours and uses a 1005 segment matrix mode to find the exposure.

Settings for the D200 might be useful for D80, D90, D60 and D40X as well.

3.1 Basic Settings

Shooting Mode: CL **P26**

I would use CH only for airshows. For nomal airliners CL set to 3 fps is enough.

Image Quality: JPEG Fine **P28** **P129**

RAW format can be used for more control in editing your image. But if you lwant to learn your camera I would suggest RAW, as the faults you made in using it will be more obvious. Because of that you should use RAW whenever it really counts.

ISO Sensitivity: 200 **P33**

You can go down to 100 if the weather allows. I would not go over 320, as the noise becomes a problem at 400 and above,.

White Balance: Auto **P35** **P129**

The automatic white balance has been much improved compared to the D100, Under natural light Auto will work just fine most of the time.

Optimizing Images: Normal **P45** **P129**

Color Space: sRGB **P50** **P129**

Focus Mode: Continuous Servo AF-C **P51**

AF Area Mode: Dynamic area AF **P54**

Metering: Centre weighted **P61**

Exposure mode: P* **P62**

You can use S and A mode when you want. M only makes sense for night shots or static subjects.

3.2 The Shooting Menu

I have only listed points that are not covered in the Basic Settings part of this guide.

Image Size: Large	**P130**
JPEG Compression: Optimal Quality	**P130**
RAW Compression: Comp RAW	**P130**
Long Exp NR: Off	**P131**
High ISO NR: Low	**P131**

3.3 Custom Settings

AF-C Mode Priority Selection: Focus	**P148**
AF-S Mode priority Selection: Focus	**P148**
Focus Tracking with Lock-on: Normal	**P150**
Center Weighted Area: 10mm	**P155**
Assignment of AE-L/AF-L Button: AE Lock only	**P157**
Viewfinder Grid Display: On	**P158**
CL Mode Shooting Speed: 3FPS	**P158**
Assign Func Button: Matrix Metering	**P170**

Very handy to quickly switch metering modes.

4. D300

Announced in August 2007 the D300 was the next upgrade in the Nikon line of semi-professional DSLR cameras after the D200. It features a 12MP CMOS sensor. The focus system has been improved. It now has the 51 point (11 cross-type) CAM3500DX AF system, which is a big step up from the D200 and leaves no comparison to the old D100. It is the same AF system as sued in the Nikon D3 professional camera. The switch to the CMOS type sensor has greatly improved the high ISO quality of the camera.

Settings for the D300 can be used on the D700, D90, D5000 and D3 series of cameras.

4.1 Basic Settings

Image Quality: JPG Fine **P56**

RAW format can be used for more control in editing your image. But if you lwant to learn your camera I would suggest RAW, as the faults you made in using it will be more obvious. Because of that you should use RAW whenever it really counts.

Image Size: L **P60**

Focus Mode: AF-C Continuous Servo AF **P62**

AF-Area Mode: Dynamic Area AF **P64**

Release Mode: CL **P74**

You can use CH at airshows. CL is usually good enough for airliners.

ISO Sensitivity: 200 **P96**

Up to ISO 400 should work on a D300. Going under ISO200 is not recommended.

.Metering Mode: Center weighted **P102**

The improved 3D Matrix Metering of the D300 does a very good job for spotting. Even in high contrast scenes and low contrast scenes. It makes sense to use, but center weighted still is the safer and more predictable bet.

Exposure mode: P* **P104**

You can use S and A mode when you want. M only makes sense for night shots or static subjects.

White Balance: Auto **P127**

Auto works well under natural light.

Nikon Picture controls: neutral **P150**

Neutral is less contrasty but gives you the largest useable dynamic range and leaves the most options for editing. You can down load picture control settings at the Nikon website, which make the camera record the pictures like a D2X.

Active D-Lighting: OFF **P167**

For RAW shooters the use of "Low" is recommended, as you can not turn the function on when you took the pic with ADL off. However you can turn ADL off, when you took the picture with ADL set to "Low". For the jpeg shooters, I strongly recommend turning this option off, as the function can create halos. It often looks like an overuse of the shadow and highlight tool in Adobe Photoshop, especially if you take a photo of a bright white aircraft against a dark blue sky and in other high contrast scenes.

Color Space: sRGB **P169**

4.2 The Playback Menu

Display Mode: Highlights + RGB Histogram **P250**

4.3 The Shooting Menu

Long Exp. NR: Off **P262**

High ISO NR: Normal or Low **P263**

4.4 Custom Settings

AF-C Priority Selection: Focus **P267**

AF-S Priority Selection: Focus **P268**

Dynamic Area AF: 21 points **P269**

I would recommend using 51 points for airshows and 21 points for airliners.

Focus Tracking with Lock-on: Normal **P270**

AF point selection: 11 **P272**

51 point option can be tried, but for me it takes too long to move the focus point with 51 points selected.

Center Weighted Area: 10mm **P277**

Viewfinder Grid Display: On **P281**

CL Shooting Mode Speed: 3 FPS **P282**

Assign FUNC Button: Matrix Metering **P303**

Assign AE-L / AF-L Button: AE lock only **P307**

5. D800

Announced in February 2012 the D800 was the high resolution successor to the D700. It features a 36MP CMOS sensor. It has the Nikon Advanced Multi-CAM 3500FX autofocus sensor module with TTL phase detection, fine-tuning, 51 focus points (including 15 cross-type sensors; f/8 supported by 11 central sensors).

The high resolution FX sensor will be a test for your lens. It also needs very careful handling as even the slightest blur created by the photographer will be visible.

Settings for the D800 can be used on the D750, D610, D800e, D810 and D4 series of cameras.

5.1 Basic Settings

Image Quality: JPG Fine **P84**

RAW format can be used for more control in editing your image. But if you I want to learn your camera I would suggest JPG, as the faults you made in using it will be more obvious. Because of that you should use RAW whenever it really counts.

Image Size: L **P87**

Focus Mode: AF-C Continuous Servo AF **P91**

AF-Area Mode: Dynamic Area AF **P93**

D9 for airliners, d21 or D51 for airshows.

Release Mode: CL **P103**

You can use CH at airshows. CL is usually good enough for airliners.

ISO Sensitivity: 200 **P109**

Up to ISO 1600 should work on a D800.

.Metering Mode: Center weighted **P115**

Centre weighted still is the safer and more predictable than Matrix Metering..

Exposure mode: P* or A **P117**

P is reliable, but due to the high quality the D800 demands from the lens, I find A set to F8 preferable, especially as the low noise of the sensor allows you to up the ISO. S or M as needed.*

White Balance: Auto **P145**

Auto works well under natural light.

Nikon Picture controls: Standard **P163**

Neutral is less contrasty but gives you the largest useable dynamic range and leaves the most options for editing.

Active D-Lighting: OFF **P174**

High Dynamic Range: OFF **P174**

Vignette Control: Normal – OFF for RAW **P275**

For RAW shooters the use of "off" is recommended as you can do vignetting correction in RAW development with most software solutions offering automatic correction for many lenses. For the jpeg shooters, I recommend using "normal" or "High". Make sure that "high" is not overcorrecting before using it.

Auto Distortion Control: OFF **P276**

For RAW shooters the use of "off" is recommended as you can do distortion correction in RAW development with most software solutions offering automatic correction for many lenses. For JPG shooters I also prefer "off" as it is saver to do this correction in editing.

Long Exposure NR: OFF **P277**

Color Space: sRGB **P274**

Display Mode: Highlights + RGB Histogram **P261**

5.2 The Shooting Menu

Long Exp. NR: Off **P262**

High ISO NR: Normal or Low **P263**

5.3 Custom Settings

AF-C Priority Selection: Focus **P281**

AF-S Priority Selection: Focus **P282**

Focus Tracking with Lock-on: Normal **P283**

AF point selection: 11 or 51 **P285**

51 point option can be tried, but for me it takes too long to move the focus point with 51 points selected.

Center Weighted Area: 12mm **P289**

CL Shooting Mode Speed: 2-3 FPS **P293**

Viewfinder Grid Display: On **P295**

Assign FN Button: Matrix Metering **P311**

FN button + command dials: Choose image area **P314**

Assign AE-L / AF-L Button: AE lock only **P307**

6. D7200

Announced in March 2015 the D7200 was the successor to the D7100 and seen as the replacement for the D300 until the D500 arrived. It features a 24MP CMOS sensor. It has the Nikon Advanced Multi-CAM 3500 autofocus sensor module with TTL phase detection, fine-tuning, 51 focus points.

Settings for the D7200 can be used on the D7000, D7100, D750.

6.1 Basic Settings

Image Quality: JPG Fine **P77**

RAW format can be used for more control in editing your image. But if you I want to learn your camera I would suggest JPG, as the faults you made in using it will be more obvious. Because of that you should use RAW whenever it really counts.

Image Size: L **P81**

Focus Mode: AF-C Continuous Servo AF **P83**

AF-Area Mode: Dynamic Area AF **P86**

D9 for airliners, d21 or D51 for airshows.

Release Mode: CL **P66**

You can use CH at airshows. CL is usually good enough for airliners.

ISO Sensitivity: 200 **P99**

Up to ISO 1280 should work on a D800.

.Metering Mode: Center weighted **P105**

Centre weighted still is the safer and more predictable than Matrix Metering..

Exposure mode: P* or A **P51**

P is reliable, but due to the high quality the D800 demands from the lens, I find A set to F8 preferable, especially as the low noise of the sensor allows you to up the ISO. S or M as needed.*

White Balance: Auto **P111**

Auto works well under natural light.

Nikon Picture controls: Neutral **P130**

Standard is a bit too sharp and has a picture control setting for clarity of +1. This can cause halos. If you want to use standard for the bit more flashy colours, I would suggest to modify it to. Sharpening +2 and Clarity 0.

Active D-Lighting: OFF **P139**

High Dynamic Range: OFF **P141**

Vignette Control: Normal – OFF for RAW **P271**

For RAW shooters the use of "off" is recommended as you can do vignetting correction in RAW development with most software solutions offering automatic correction for many lenses. For the jpeg shooters, I recommend using "normal".

Auto Distortion Control: OFF **P271**

For RAW shooters the use of "off" is recommended as you can do distortion correction in RAW development with most software solutions offering automatic correction for many lenses. For JPG shooters I also prefer "off" as it is saver to do this correction in editing.

Long Exposure NR: OFF **P271**

Color Space: sRGB **P270**

6.2 The Shooting Menu

Long Exp. NR: Off **P271**

High ISO NR: Normal or Low **P271**

6.3 Custom Settings

AF-C Priority Selection: Focus **P276**

AF-S Priority Selection: Focus **P276**

Focus Tracking with Lock-on: Normal **P276**

AF point selection: 11 or 51 **P277**

51 point option can be tried, but for me it takes too long to move the focus point with 51 points selected.

Center Weighted Area: 10mm **P278**

CL Shooting Mode Speed: 3 FPS **P280**

Viewfinder Grid Display: On **P280**

Assign FN Button: Matrix Metering **P284**

Assign AE-L / AF-L Button: AE lock only **P285**