

File Type - Do we set our camera to RAW or JPEG?

A subject that generates an awful lot of discussion and different viewpoints.

So what's the difference?

RAW files comprise all the unprocessed data that a camera sensor collects from a scene and as such is a bit like an unprocessed film negative.

Alone it's unappealing but offers a world of potential when processed - much like an Ansell Adams masterpiece - and because the processed image is saved as a new file (JPEG, TIFF, etc) the original remains in its unprocessed state and can be re-processed again and again.

JPEGs are a "final product" or "end result" much like a film transparency (slide).

The camera takes the original raw data and runs it through its image processor and applies contrast, saturation, white balance, colour space and sharpening, etc according to how these parameters are set in the camera **and then** compresses it to reduce the file size, throwing away data at the same time.

The image may be beautiful but there's no going back to the original & reprocessing.

Using Raw is necessary if you are looking to produce large prints that extract the most detail out of the file. In addition it allows you adjust white balance and customise/interpret reality without sacrificing quality and also improve your chances of recovering an image and correcting mistakes during post processing.

So why would you bother using JPEG?

Although RAW gives the ultimate quality and choice in post processing the quality of JPEGs has dramatically improved over the years and is therefore:

- Popular with beginners and those who don't want to/don't feel comfortable post process(ing).
- Because file sizes are much smaller they allow photographers to shoot and record images much faster and take significantly more shots before the camera's buffer is filled; a huge advantage for action photographers
- Event photographers typically don't have time to edit images when they are photographing live events. The photo is normally instantly transferred once captured.

- To minimise the chance of manipulation news agencies now often require that all photo submissions are shot in JPEG format

White Balance

Most light sources do not emit purely white light and have a certain "colour temperature". The colour temperature of daylight is variable and depends on time of day and prevailing weather conditions

The human brain processes information that comes from our eyes and automatically adjusts the colour temperature so we normally see colours correctly.

Cameras do not have the same abilities and White Balance is the adjustment of colours so that an image looks "natural"

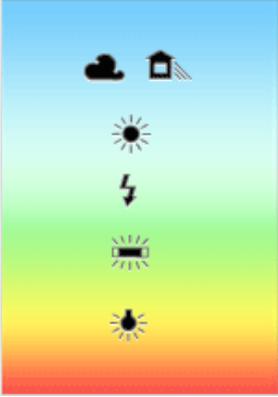
Film normally has a colour temperature of "typical" daylight.

Digital sensors can be set to "auto" white balance where the camera makes a "best guess" based on a white subject that serves as a reference point eg white clouds in a scene.

This may not yield good results especially if the scene doesn't contain a pure white or is dominated by a single colour and therefore can get things wrong.

As a consequence in addition to "Auto" digital cameras have the facility to set colour temperature manually corresponding to typical different types of lighting via white balance pre-sets set by the manufacturer

eg

WB SETTINGS	COLOR TEMPERATURE	LIGHT SOURCES
	10000 - 15000 K	Clear Blue Sky
	6500 - 8000 K	Cloudy Sky / Shade
	6000 - 7000 K	Noon Sunlight
	5500 - 6500 K	Average Daylight
	5000 - 5500 K	Electronic Flash
	4000 - 5000 K	Fluorescent Light
	3000 - 4000 K	Early AM / Late PM
	2500 - 3000 K	Domestic Lightning
	1000 - 2000 K	Candle Flame

So what do we do for the best?

1. Some recommend shooting in **Auto** white balance which, like auto exposure control will give good results **most of the time**.

If the camera gets it wrong and you're shooting in

- RAW you can correct in post processing
- JPEG you can make certain adjustments in post processing but
 - things are a bit more problematic
 - so it may be best to change to a manually selected pre-set

2. Some recommend shooting at the **Cloudy pre-set** which accords with normal ambient conditions in the UK and will on the whole replicate conditions as if you were shooting with film.

If the camera gets it wrong

- the situation is much the same as shooting in Auto white balance but
- with the benefit that if shooting in RAW and lighting conditions are consistent you can "batch process" to a chosen alternative white balance pre-set.

