Film to digital - “Pushing” the ISO

by Malcolm McElvaney

Like most of my quest a random inspiration got me interested in this particular film based concept. I watched a video about shooting ISO-3200 film at ISO-12000 for night photography which was the highest ISO his camera would shoot and he did get usable pictures but this is called “pushing” the ISO. It can be emulated on the digital camera side as it is an exposure adjustment in principal just sounds more exotic. The opposite of “pushing” the ISO is “pulling” the ISO and I will cover both in this article.

I have not used film so my knowledge of the details of how things operate is limited to what I have read but the reason for the “pushing” and “pulling” was a good work around for a film based problem. Film is rolled up and typically has 24 or 36 exposures per roll to be wound into the camera body and the ISO (also called ASA) it is rated for is set on the camera as well. You should have both numbers the same to allow proper exposure calculations in camera. I switched to present tense because film photography is still alive and well. The limitations are now in play as the photographer goes against the ever changing light conditions and with a set number of exposures (frames) to use or lose. Whether digital or film as it gets darker we tend to use a high ISO to compensate for the light lost. I can alter the ISO my camera uses any time I like but the film is a physical medium fixed at the light sensitivity it is rated for. Here is where my non-experience with film is showing just to be clear. I assume you could change the roll out to another ISO variation if you had one with you losing the unused exposures or change the ISO on the camera and develop the mismatched ISO of the film differently. I am going to stop now as I don't know any more about the process that could go on to properly explain it.

The technique is called “pushing” or “pulling” the ISO and which of the two it is depends on the direction you go. The inspiration for my looking into this may be on the extreme end of what can be done but one could have only ISO-400 film and need ISO-800 instead so by telling the camera it was ISO-800 it would underexpose each frame by one stop. When developed either by the photographer or a lab it would technically by over developed for the ISO-800 rating used but this “pushing” would produce images with higher contrast and some lost highlights. The opposite option would be setting the camera to ISO-200 and overexposing each frame by one stop and when under developed for ISO-200 and not ISO-400 producing image with better contrast control.

Digitally the process is different but still an exposure adjustment done by manually under or over exposing the image taken or using the exposure compensation option to alter how the camera calculates the settings used. In the previous example our film was actually

rated ISO-400 so we will stick with the digital equivalent. An exposure compensation of -1 is one stop underexposed and the same as using ISO-800 on the camera so we have “pushed” the exposure so to speak, while, using a setting of +1 is one stop overexpose and be like using ISO-200 on the camera resulting in a “pulled” exposure. The exposure is the raw and / or jpg files saved to memory card. Now to develop the image taken and while we have many options the simple curve adjustment was recommended. By taking a point along the curve and pulling it up you brighten the ”pushed” image. It is a digital process and infinitely undo-able so just experiment and shoot some pictures in field requiring this technique.

I shoot with digital cameras but I'm not motivated to dive into this new world of an essentially foreign art form; however, I started with digital photography so this is what I know and will stick with. I have learned more about film photography by finding the photographers online via youtube sharing glimpses of the dark room processes and print making steps so I appreciate the work that goes into the art form. This particular technique I covered in this article really never made sense until I saw it as an exposure adjustment and given the limits a way to alter ISO in a more artistic way. I like to get bracketed sets at +/- 2 ev so I already have many “pushed” or “pulled” images just because I try for HDR images. The post processing of any image makes the final results so now I have process to “apply” and a better understanding of where it came from.

This is the overexposed image from a bracketed set taken at 1/40, F/9, ISO-100 and two stops overexposed. Taken 03/21/2021 at the Davis Mountains State Park. I “pulled” the image with two points on a curve. (223, 118) and (152, 34)