

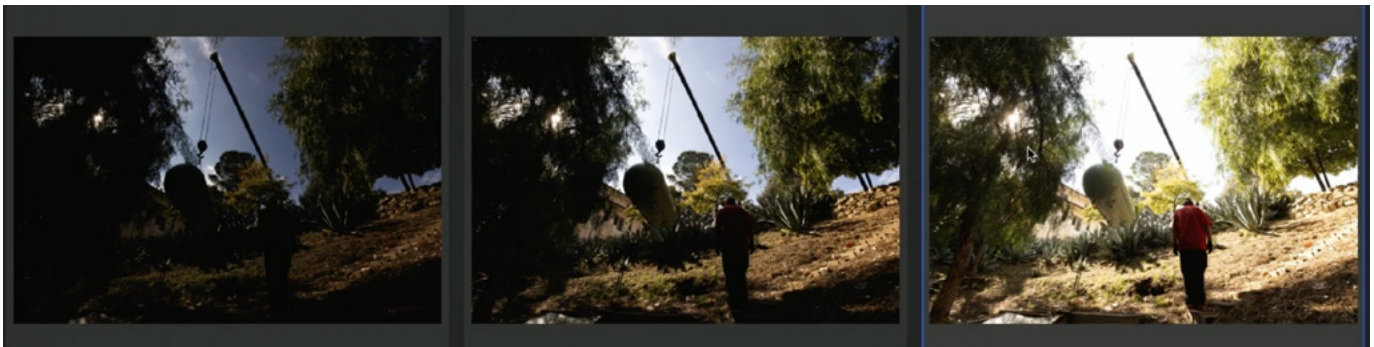


HDR Challenge Image

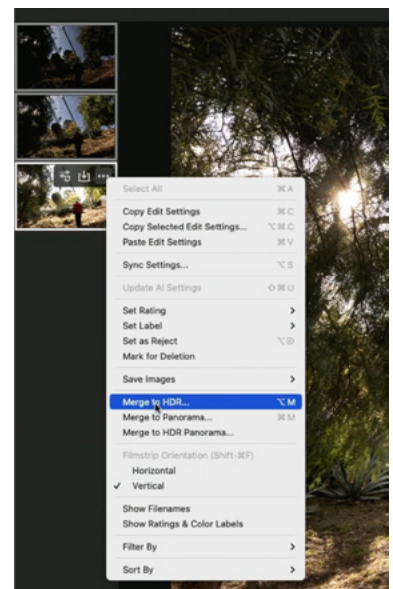
HDR Challenge Image

In this lesson, we're going to tackle a challenge image that was sent in by a Masters Academy member (Thanks, Carl!). It's an HDR image which is created by taking multiple exposures that vary in brightness and then merging them together in order to get the full brightness range of the scene. The image features a propane tank that is being moved and, because of the motion in the scene, the merged result is going to have some artifacts if we use the default HDR settings.

Carl's issue with this image was the noise that appeared in the final result. We're going to look at how we can avoid noise when processing this image.



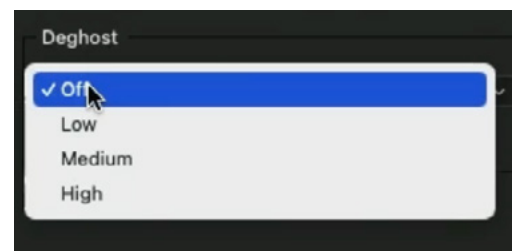
We'll select all three images in Camera Raw and click on the three dot icon (...) that appears when we hover the cursor over one of the thumbnails. This will cause a menu to pop up, from which we will choose to "Merge to HDR." The HDR Merge window will appear, with some settings on the right.



We'll turn on the "Align Images" check box, which will align things from the camera itself being in motion. We'll also turn on the "Apply Auto Settings" check box, which will brighten the image so it's easier to see what's going on. (If you don't like the way this affects your image, you can turn the check box off before hitting the Merge button.)



The Deghost setting tries to compensate for any motion in the scene. The Off setting will not account for motion at all and will create the most natural HDR result, but we do have motion in this scene, so we'll instead experiment with the other options. You essentially want to find the lowest setting that still removes the ghosting. The higher the setting, the fewer of the HDR frames that will be used in the composite. If it's only using one frame, then lightening that area can result in exaggerated noise. In this example, we unfortunately need to use the High setting because Low and Medium still show artifact from the tank moving. After specifying these settings, we'll click the Merge button and the merged result will open back up in Camera Raw.

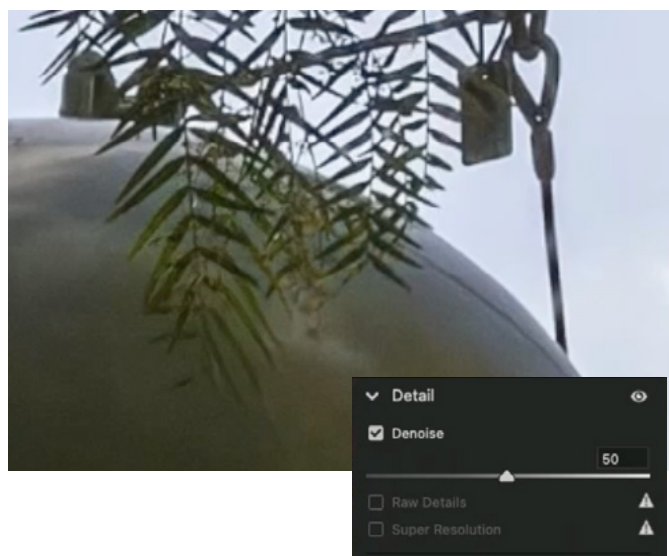


When we zoom in on the result, you can indeed see that pesky noise in the dark part of the tank. What I dislike even more is that there is an uneven amount of noise in different parts of the image. In the tank, there is lots of noise. In the sky, you can't see any. This can make things start to look unnatural.



The Denoise Setting (10:33)

Let's look at how we can correct for the noise. First, we can turn on the Denoise check box, which can be found within the Detail Panel. This helps, but it's not perfect. The Denoise setting tries to retain detail. As a result, you still may find noise lurking between things. For example, the smooth part of the tank was corrected, but if you look close, you can still see some noise artifact between some of the leaves.



Optimize a Single Capture (11:40)

In a case like this, I would actually try to optimize one of the single captures instead of the merged HDR image. These days, I only use HDR when I absolutely have to. Modern cameras generate less noise than old ones and also capture a wider dynamic range (brightness range).

First, I'll manually process the HDR result so that we can later compare it to the processed version of a single image. In the Basic Panel, I'll move the Highlights slider all the way down and the Shadows slider all the way up. I'll also boost the contrast a bit and ensure there is a black point by adjusting the Blacks slider. If the Shadows slider is all the way up and I still need to get detail out of the dark areas, I can use the settings in the Curve Panel to target those darker areas. The Curve settings can actually be better than the Highlights and Shadows sliders at times because those sliders can potentially create halos when moved to their extremes.

Looking at the individual exposures, the brightest of the three has highlights that are too bright and it was impossible to bring detail back into those areas. For that reason, we'll use the middle of the three. We'll move the Highlights slider down until we can see detail in all the bright areas of the sky (This doesn't include the sun, which shouldn't have detail anyway.) We'll move the Shadows slider all the way up in order to lighten the dark areas and bring some detail into the shadows. I still cannot see detail in the man's dark pants, so we'll also increase the Exposure setting. This helps with those darkest areas, but the sky ends up becoming too bright again, so we'll go back to the Highlights slider and move it farther to the left. This is how we commonly have to adjust images like this. By making an improvement to one area (by raising the Exposure), it creates a problem in another area that we'll need to compensate for (by lowering the Highlights).



Remember, the Curve settings can be used to adjust these areas further. Here, there are individual sliders for the different parts of the picture: Highlights, Lights, Darks and Shadows. I'll move the Lights slider down to further darken the sky and the Darks slider up to further brighten the man's clothes (as this is the darkest part of the image).



Under the Effects Panel, we'll increase the Clarity setting in order to make the image pop a bit. Be careful not to overdo it with this slider, as this is another setting that can cause halos if moved to its extremes.



The last thing I usually do is make sure that the image has a black point. If it looks like there is no area that is solid black, I'll increase the Blacks slider. When doing this, there is a trick. If you hold down the Shift key and double-click on the Blacks slider, it will auto-adjust to ensure there is a black point.

Compare Results (18:09)

Now we'll compare the HDR image with the adjusted single exposure. The HDR image has a bit less noise, BUT the Denoise setting was used on it, whereas this setting has not yet been used on the single exposure image.



HDR image after Denoise



Single exposure before Denoise

So let's do that. We'll turn on the Denoise check box and you can see that it produces a really smooth result. We can even lower the setting in order to preserve a bit more detail.



Single exposure after Denoise

Now, looking between the two processed versions, the single exposure has less noise AND does not contain the artifact created by merging for HDR. There is also no tonal benefit to the HDR image, since we can zoom in on various bright and dark areas to see that the tones are nearly the same.



HDR artifact in merged version



No artifact in single exposure