

What is Automatic? By Fred Tullock

When it comes to automatic, three major things the camera can adjust: Focus, Exposure and Color Balance.

As you will see, there are many steps between having the camera control everything, and you controlling everything. Transitioning to manual can be done in steps, so you don't have to learn everything about your camera at once. Keep in mind that even the most advanced photographers will often let the camera do some things automatically. In general, the more advanced manual modes are lower in each section. This document was created as an outline with bold highlights, so it should be useful for future reference without re-reading it entirely.

- 1) **Camera controlling everything:** This is full point-and-shoot photography
 - a) **Auto mode:** Camera has full control of everything: exposure, color balance, focus settings.
 - b) **Scene modes:** You pick from various scene modes such as: Sports, close up, landscape, portrait
 - i) As in auto, camera still has full control of everything, but is tweaked for the scene type you select.

 - 2) **Focus:** Always choose where the camera is focused, whether automatic or manually focused. There is no shame in using automatic focus, if you chose where it focuses.
 - a) **Automatic Focus**
 - (1) Where does it focus?
 - (2) Most cameras have a very easy way to manually move the point of focus. This way you don't have to reframe after focusing, essential with a tripod.
 - (3) Cameras often have setting to automatically focus on the closest object.
 - ii) What is Continuous focus?
 - (1) Off: Stops once focus is found: good if subject distance does not change, but is moving.
 - (2) On: Continuously focusing: good if subject distance is changing.
 - iii) What if I enable focus Tracking?
 - (1) Once you achieve focus on a moving object, it will stay in focus as long as you keep it in the frame.
 - iv) Back button focus
 - (1) Instead of pushing shutter half way to focus, a separate button on rear of camera is used for focus.
 - (2) Once you achieve focus on a subject who's distance does not change, you don't risk bad focus for subsequent shots, or have to wait for the camera to focus again.
 - (3) This mode often used by advanced photographers, recommend you try it.
 - (4) May require more than one menu setting change, for one time setup.
 - v) Automatic focus is much faster than manual, and in some cases more accurate than manual.
 - vi) With a DSRL in live view, you are not limited to the number of focus points in the viewfinder, you can autofocus anywhere in the frame. Mirror- less cameras do not have this limitation.

 - b) **Manual Focus**
 - i) Required for panoramas, (or use back button focus)
 - ii) Very useful for close-up work where focus is critical, or when focus stacking.
 - iii) Not recommend for every kind of photography, such as a moving subject.
 - iv) If using back button focus, you don't have to switch to manual focus, just turn the focus barrel!
 - v) Lets you focus anywhere in frame, DSLR cameras have limited locations of auto focus points in the viewfinder.
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- 3) **Controlling Exposure:** Three things control exposure: Aperture (f stop), Shutter Speed and ISO. Always pay attention to what these are, even in automatic, and change as needed. The major exposure modes are:
 - a) **P- Program mode:** Fully automatic control of exposure.
 - i) Many cameras let you turn the main dial to simultaneously adjust shutter and aperture to maintain exposure, letting you choose between more depth of field or stopping motion.

- b) **S (Shutter) or Tv (Time value) Priority:** You set the shutter speed and the camera will automatically adjust aperture for proper exposure.
 - i) Use when controlling motion is a high priority.
 - ii) Keep an eye on the aperture that the camera selects, as it is limited by the lens. For example if the exposure requires more light, and the aperture is already wide open, you may underexpose if you do not manually raise the ISO.
 - c) **A-Aperture Priority:** You set the Aperture (f stop) and camera will automatically adjust shutter speed.
 - i) Use when controlling depth of field is a high priority. Or shooting max aperture, for fastest shutter.
 - ii) Keep an eye on shutter speed that the camera selects. Too slow and you could have blur from subject motion, or camera motion if not on a tripod. You may need to manually adjust ISO to achieve an acceptable shutter speed.
 - d) **M-Manual exposure:** You manually control both aperture and shutter speed.
 - i) Useful if you need specific shutter and aperture setting, or do not want either to change.
 - ii) Auto ISO:
 - (1) **On:** Camera will automatically adjust ISO to maintain exposure.
 - (a) Every time the light changes, such as clouds passing the sun, ISO will automatically compensate.
 - (2) **Off:** ISO must be manually changed
 - (a) Use the meter to adjust Shutter/Aperture/ISO for initial exposure.
 - (b) Convenient for easy control of exposure, especially for high or low key images without having to use exposure compensation.
 - (c) As long as the light does not change, the exposure of your subject will not change.
 - (d) This setting is essential for panoramas, and night sky.
 - (e) Exposure compensation will not directly affect exposure, but adjusts the meter.
 - (3) Enable Auto ISO may not be a dedicated button, but a sub setting of ISO, often front knob.
 - e) **Notes:**
 - i) As a growing photographer, it is essential to get past Program mode of exposure.
 - ii) **Exposure Compensation** functions for all exposure modes, useful if the scene is mostly light or mostly dark, otherwise the camera gives all scenes a medium tone. Most cameras have a dedicated button for it. Don't forget to turn it off when finished.
 - iii) Cameras have various meter weighting settings, so you can prioritize proper exposure at one specific location, or the entire scene.
- 4) **Color balance:** Your eye compensates for light of different color temperature, so white objects always seem white. Your camera also needs to.
- a) Auto
 - i) Often used, even by advanced photographers, don't feel bad if you never get past this.
 - ii) Some light sources, often indoors will have poor color results.
 - b) Manual: Incandescent, Sunlight, Cloudy, Shade, etc.
 - i) Standard old fashion light bulbs look best with Incandescent setting.
 - ii) Best for panoramas. (if not, easy to fix in post processing if shooting RAW)
 - iii) Helpful if subject has different color light than background.
 - c) Manual by degrees Kelvin
 - i) Custom setting to any temperature light source.
 - ii) Not often used
 - d) Preset
 - i) Use white card or white object in scene to create and use a preset color balance for that light.
 - e) Calibrated
 - i) Most accurate way to capture all colors accurately. Requires a test chart, and new calibration for every different type of light.
 - f) **Notes:**
 - i) If shooting raw images, it is very easy to manually adjust color balance during processing.
 - ii) Technically perfect color balance is not your only creative option. Sometimes you may desire slightly warmer color.