

Essay

Barreling Down

by Jason Lett

Late autumn, following the primary fermentation of the wines, is the time of year reserved for “barreling down.” The pressed red wines are moved from their settling tanks into barrels for aging and secondary fermentation. I’ve been rolling a lot of barrels lately, and I am once again struck by the absolute marriage of form and function that they represent.

An Iron Age technology, the barrel is still an essential element in creating the world’s most prestigious wines. As I roll barrels through my cellar, I am engaging in one of the only activities in winemaking that has gone unchanged since the Roman era. Grapes are no longer pressed by foot in stone troughs cut into the floor. We fill and empty barrels at the flick of a switch or a nitrogen valve, not with a clay pot. But the act of moving a barrel around the winery, and, once filled, the dynamics experienced by the wine aging inside, have not changed in two thousand years.

The form of a barrel – a cylinder tapered on both ends – is what allows it to function so beautifully. Its shape gives it structural integrity, makes it easy to move, protects the wine from oxygen, and facilitates its clean racking.

The taper of a barrel creates the internal tension that gives the barrel its strength. The boards that make up a barrel, called staves, are shaved into chamfered oblongs by the barrel maker. The individual staves, when bent together over a fire of wood chips, become a seamless series of arches side-by-side, capable of withstanding great force. (Full barrels falling off of high racks often bounce rather than burst.) Once filled, the wine inside the barrel swells the grain of the wood, forcing the joints between the staves together so tightly that no wine leaks out. Just as the wine needs the barrel, to protect it from air and nurture its aging, so does the barrel need the wine, to keep its staves from drying, shrinking, and collapsing in on themselves.

The taper of a barrel makes it easy to move. One person can roll an empty one on its ends, spin it in place to work it around a sharp corner, or roll it end-over-end to ease through a narrow doorway. Full, a 60 gallon burgundy barrel weighs about 650 pounds. Yet for all that weight a full barrel can be tipped back and forth with one hand – very useful when gravity racking directly from the barrel.

The taper of a barrel protects the wine inside from oxidation. The apex of the barrel’s arch, called the bilge, has a hole drilled in it – the bunghole. The bunghole is used to fill and empty the barrel, and is stoppered with a bung. If the bunghole is placed straight up, any air inside the barrel will come to the top, exposing only a small circle of wine to air. This air can be removed by pulling the bung, topping the cask, and replacing the bung. Frequent topping up prevents oxidation and vinegaring of the wine inside. The barrel shape is so effective at preventing oxidation that the best stainless-steel wine drums imitate the bulged shape of a wooden barrel.

The taper of a barrel eases the process of racking, or draining the clear wine off of the “lees.” (Lees are the yeast solids that have settled to the bottom.) Just as the shape of the bilge limits the amount of air contact at the top of the barrel, the bilge limits the amount of contact of the lees with the wine. This, and the ease of tipping the full barrel one handed, make it possible to put a tap in the head of the barrel and rack or bottle straight from the barrel. Traditional-style barrels still have a small bung low down in the front head of the barrel for just this purpose.

The beauty of the barrel lies in its functionality. Its shape is only one of the barrel’s attributes. It is, in itself, a great expression of wood and of the wood-workers art. Then, once filled, the barrel becomes an important contributor to the aging and flavor of the final wine.