BARREL ASSESSMENT AND SANITATION

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**ORDER EARLY** – Especially for White Wines

- Better Selection of Wood
- The Cooperage’s inventory will be larger
- You’ll Be Able to Get Your Barrels on time
- The Cooperage’s Schedule
- The French take LOTS of Holidays
- Potential shipping problems –
  There is the threat of a west coast dock strike
- American coopers are busy feeding the Distilleries
- Early Season Discounts can be **Substantial**

If you can order AND take delivery early, ask for **additional discounts**
• Terroir is not nearly as pronounced in trees as in Grapes
• Oaks don’t respect our artificial borders

• Different Species
• Even at best, the French Government only required 70% compliance with origin

• French vs other European oak forest areas. “Two Hungarys”

• Single Forest Designation usually costs more

• Grain tightness is readily observable and repeatable
OAK BARRELS

French oak: Quercus petraea
American oak: Quercus alba
CT: Convection Toasted
Hoops (galvanized steel)
American barrel: 6; French barrel: 8
Barrel sizes (typical):
Bordeaux type: 225 L. / 59.43 Gal.
Cognac type: 300 L. / 79.25 Gal.

Toasting levels (typical):
- Light
- Medium
- Medium +
- Heavy

Croze
Chime
Head
Head or chime hoop
Rivet
Stave
Bung hole
Bung (white silicone)
Bilge hoop
Stave joint
Bilge (widest part of the barrel)
Quarter hoop
French hoop
THE TRUCK PULLS UP WITH YOUR LOAD OF BARRELS

- Look for gross damage as you unload and roll barrels
- Check the labels on the barrels; did you order Noisette toast?
• Most Cooperages suggest leaving barrels wrapped until ready to use but let your cellar conditions be your guide.

• If there’s damage to the wrapping, look deeper.

• How much wrapping is appropriate? Tell your cooper what you need.
• The most easily damaged areas are the stave ends and this damage can be hard to spot.
• Look for deformed and flattened hoops and staves.

• Look for hairline cracks at the bilge, especially at the bung stave. **ANY cracks at all are cause for rejection in a new barrel.**

• Are the bungholes round and fully cauterized?
• Are they 50-52mm?

• The hoops should be even and the rivets should be symmetrical.

• Check the interior with a light. While color is a poor indicator of toast level, the toast should be uniform.
• Blisters? Mold growth around the head/stave joint?

• Debris? Sawdust, dead mice, cigarette butts......
TYPICAL PROBLEM
PRECONDITIONING

• Does the barrel “look” tight?
• Are there gaps between staves or headboards?

• Put several gallons of water into the barrel.
• Hot water swells more quickly.
• Roll the barrel and leave on one head for an hour or so. Then flip.
• If no seeps, empty and use.

• If there are seeps or drips, the barrel may take a day or two to soak.
• It’s not necessary to add sulfur in a new barrel for a day or two of soaking.

• Note that wine will leak where water won’t.
Two kinds of leaks - though wood and mechanical and repairs are handled differently and it’s important to tell which.

- The puddle at the bottom of the croze is usually not where the leak is.

- Using a knife and a rag, pinpoint the source of the leak.
- In a new barrel, the most likely leak is from the end of a stave.
- This is the easiest leak to fix and should only take a minute.

- If the leak seems to be coming from a headboard or in the body of a stave, a small wedge is used.

- If you see gaps between staves or headboards, first try tightening the hoops.

- Tighten the hoops evenly. If gaps still persist, some flagging might be needed.

- Paraffin is a universal repair.
SPLITTING WOOD

Star split

Quarter

Sapwood

Douelle

Douelle

Annual ring

Wood fibers

Pith ray
Scobecia declivis is the culprit. One of a huge number of wood boring beetles, they are attracted to wine soaked wood, sometimes in daunting numbers.

They aren’t attracted to bug lights.

They overwinter in dead wood around the winery and emerge in late spring and early summer. During this time, if you have to work barrels outside, do it early in the day.

Keep doors and windows screened or closed.

They make a hole about the size of a pencil lead.

If you see smaller holes the size of a straight pin, the problem is mistletoe from Europe.

Three pieces of good news:

They die in the winery environment so they won’t re-infect next spring.

There is a coating that seems to help.

The holes are easy to plug.
A BORE BUG

Scobecia declivis
Every winery has its own protocol depending on cellar conditions but here are some General Guidelines:

- After emptying the barrel, rinse with plain water, empty completely and introduce SO$_2$.

- **Sulfur** - Gaseous sulfur requires a pesticide applicator’s license so most burn sulfur. Either wicks torn into pieces or disks can be used- disks are easy and come in pre-measured 2.5, 5 or 10gm tabs.

- **Check every three weeks or so**. If the barrel looks tight (and passes the “knock” test), carefully sniff the barrel. If there are any off notes behind the SO$_2$ like VA or Ethyl Acetate, the barrel needs to be rinsed and re-gassed quickly. Or sold off.

- **In very dry conditions**, the barrel can be stored full of a solution of Potassium Metabisulfite and 180gms of Citric Acid. 45gms of Metabi will release about 100 ppm of SO$_2$ and you can double this if in doubt. Be sure to top regularly if you use this method.
BUYING USED BARRELS

- Given the cost of new barrels and the need for neutral aging and storage, many wineries buy used barrels.

- Get the history of the barrels; reputable wineries normally have good quality barrels.

- If buying from a third party, ask how long the barrels have been stored. What protocols have been followed?

- The price of used barrels is market driven. If you’ll need some, buy early. White barrels are more expensive since they tend to be cleaner than reds and can be used for either red or white. In a big crop year, white barrels will be unavailable as harvest approaches.
CLEANING BARRELS

- Clean First, Then Sanitize/Disinfect

- **Sodium Percarbonate**, **Peroxyacetic Acid** or **Ozone** MAY help. Because barrels are so porous and the wine has had months to penetrate, short term disinfectants are of limited value.

- **Hot water and Steam** - Heat is the best way to control off characters and we use this regularly. Note that any treatment will remove some oak characters. A 5-10 minute treatment will reach several mm into the wood and destroy MOST of the problem organisms as well as leach wine residues.

- **Soda Ash** - This is an outdated treatment and is not recommended. Amounts over about ¼ ounce per gallon will “burn” the wood.

- Whatever treatment used, watch wine chemistry to keep problems below detectible levels.
SO₂ can be used in several ways in barrel storage. Note that SO₂ inhibits bacterial growth but doesn’t have much killing affect.

A holding solution of 45gms Potassium Metabisulfite dissolved in water will give 100 ppm free SO₂ in a 225L barrel. Don’t forget to add 180gms Citric Acid to lower the pH. The amount of Metibi can be doubled for more protection.

The empty barrel can be gassed with liquid SO₂, available in tank from several vendors. Note that using liquid SO₂ requires a pesticide applicator’s license. Not hard to get.

A lot of wineries burn elemental sulfur in sticks or tabs. Tear sticks into pieces and tabs come pre-measured in 2.5gm, 5gm and 10gm disks. Whatever method used, be sure to have a holder to catch drips as a buildup of elemental sulfur in the barrel has been shown to contribute to H₂S formation.
**Brettanomyces** - Some say it’s everywhere although there are brett free wines and barrels. There are several in-house tests available (Lebrun labs and Veriflow are two) and your lab can quickly give you results. If you have a problem, breweries will fight over your used barrels.

**VA and Ethyl Acetate** - bad news although light levels can be controlled or removed with chemicals or hot water/steam. The most common problem in used barrels.

**TCA** - If you haven’t had this problem, you will. In barrels, it only takes a small portion of one stave to contaminate a barrel. If you get that musty wet basement smell, pull the wine from the barrel instantly and have it tested. Even below detectible levels, it covers wine flavors. It can be mitigated by treatment with polyethelene or milk fat which absorbs the TCA.
SHAVED BARRELS

Shaving/recoopering barrels removes spent wood and most contamination.
THE UPSHOT

- Sanitation with barrels is the same as in the rest of the winery but barrels, being porous, need fastidious care and maintenance.  
  Keeping barrels full and regularly topped is your best defense against problems.

- Use your existing winery protocols unless you have a problem.  
  Changing conditions in the cellar should change your strategy on caring for barrels.

- Taste often - most problems are treatable if caught early.

- Regardless of the cost, don’t be afraid to junk problem barrels.