# Barrel Ageing and Barrel Projects

By Daniel Langmaid

# Overview

- Logistics/Necessities of Getting a Project together
- Styles of Beer and Common Styles
- Barrel Care
- Brewing the Beer, Fill Day, Maintenance, Ageing, Empty Day
- Barrel Re-Use
- Barrel Ageing Problems

# Logistics

- Getting a barrel

- What kind of barrel (hard alcohol, wine)?

- Contact local distilleries, local breweries, local wineries, look online (expensive with shipping), local home brewers as well

- Barrels vary in size but generally 52-55gal are very common

- 5gal are fairly available but are quite expensive now ($100 to $150) compared to larger ones (approximately 150 to 200), also age beer faster due to surface area differences

# Yeah we got a barrel!

- Problems with getting a barrel
- Availability, especially recently
- Lack of specific type of barrel desired
- Unreliable sources
- Transportation, pickup, drop off location
- Quality of barrels

# Getting a Project Together

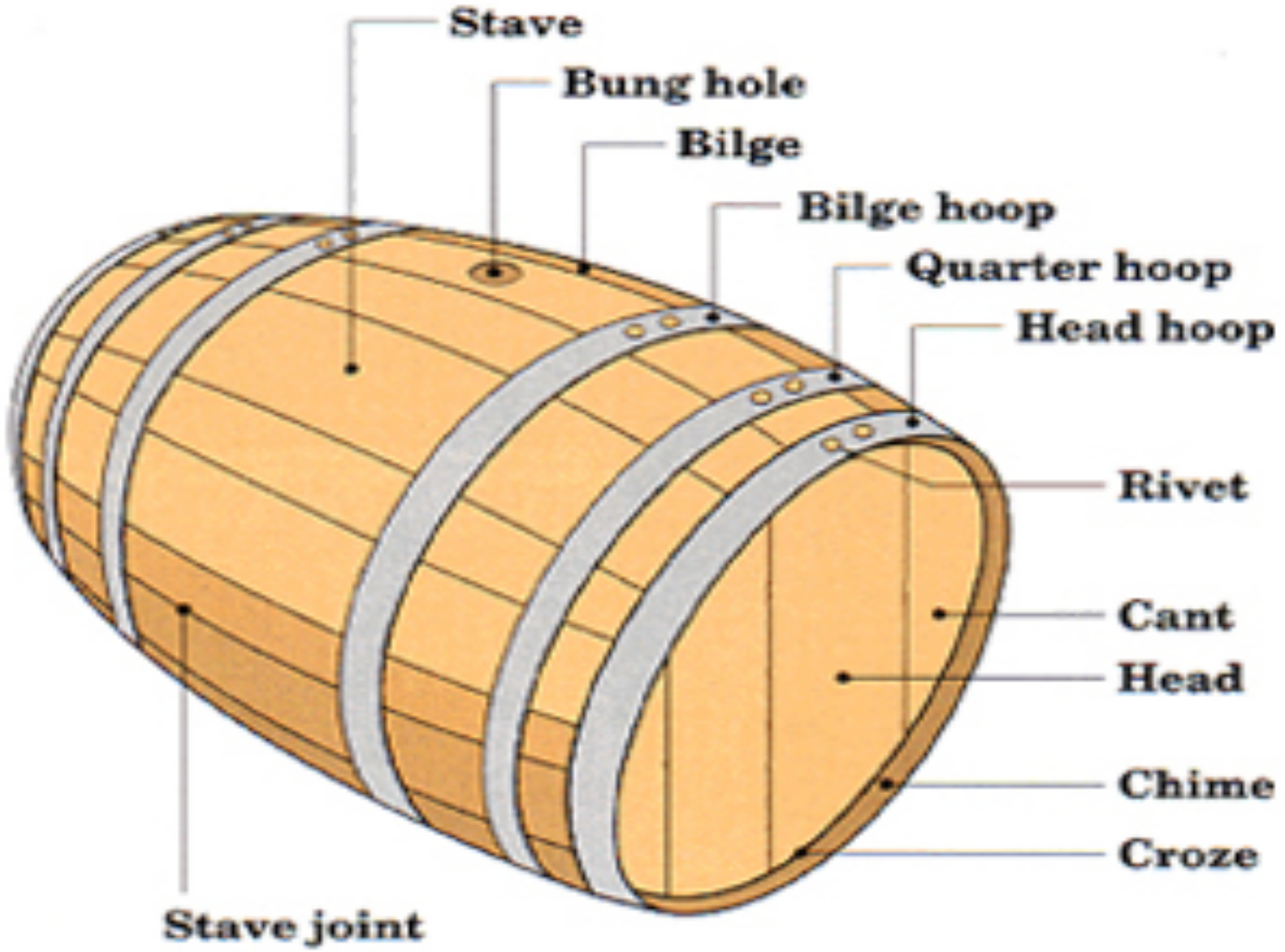
- Focused on 52/55gal whiskey bourbon barrels
- Get barrel before or after beer is ready/brewed? Generally after is better, more time for beers to develop off flavors or infections to present themselves
- How many brewers do you want involved?
- How many gallons should each brewer contribute?
- Finding a storage space for barrel, getting a stand
- Tracking costs of project and payments
- Communication and responsiveness from participants
- Planning a fill/empty day or drop off days

# Common Styles

- This varies quite a bit but generally you want styles that can hold up to long ageing, oxidation, are higher in alcohol (+8%), and can handle strong barrel flavors.
- Scotch Ale, Imperial/Baltic Porter, Russian Imperial Stout, Belgian Dark Strong, Old Ale, USA/UK Barleywine, are some examples
- Other styles (session beers, IPAs, Saisons) can be barreled as well but require different ageing times or could be secondary beers

# Barrel Care

- Once you have the barrel it is important to inspect it for stave separation and leaks
- Finding a leak can be done by pressurizing it and running hot water over it
- The more freshly dumped the barrel the better
- Empty alcohol barrels will usually retain their shape, seal, and aroma (keeping the sanitized), for a few months (4 to 6ish) if properly stored at cellar temps
- If empty it's a good idea to spray it down every week or two with water to keep the wood hydrated. Hot water will swell the wood faster


Stave
Bung hole
Bilge
Bilge hoop
Quarter hoop
Head hoop
Rivet
Cant
Head
Chime
Croze
Stave joint

- You want to fill the barrel with beer as soon as possible after getting it
- Keeping the barrel at cellaring temps without huge swings is best for the barrel wood and the beer ageing in it.
- Barrels usually come with a wood bung which you should replace asap. Easiest method is to use a screw and pry it out with a hammer.
- Replace the bung with a silicone one. If the alcohol aroma in the barrel is lacking then adding more is a good idea. Swirl it around to coat the inner surfaces

# Brewing the Beer, Fill Day, Maintenance/Ageing, Empty Day

- Brewing the Beer
- Once you have your barrel (or are planning on getting one) you need to decide on a recipe and send it out to the group.
- It is helpful to send out guidance to people on brewing higher gravity beers (oxygen, proper pitching, keeping fermentation temps down).
- Also a good requirement is to use all new plastic and rubber post boil to keep chances of infection down. (Don't want to ruin 55gal of beer after all…)
- Fill Day
- Kegs are the easiest for filling barrels.
- Blind taste test on fill day will determine which beers go in and which don't

Get all your laughs in now…


Don’t for get to keep your bung hole tightly sealed though…

- Having a 15 to 20 gallon excess of beer is generally a good idea in case of infection or beers deemed not good enough for barrel. Also for top off as wood is permeable and the beer will evaporate.
- Purging with C02 before filling is a good practice and anytime after opening the bunghole
- Using hard alcohol to sanitize the bung hole or starsan is a best practice (some say starsan will cause harm to wood) and covering it with aluminum foil is also a good idea (also whenever the bunghole is open)
- Once filled have a blow-off tube for first few days as there is usually a good amount of off gassing.

# • Maintenance

- Once filled the barrel should be topped off within a few days due to absorption from the wood and can be fixed then with a one-way breathable bung

# Use a Blow-off tube, you don't want a foamy bunghole

- Barrel needs to be topped off every 1-3 months to limit the head space that will develop due to evaporation (balance between headspace and opening exposure). The limited head space will keep the possibility of acetobacterium (vinegar) from developing.
- Ageing
- Depending on the style and the flavor profile the beer should age for about 6 to 18 months
- Hard alcohol flavors are apparent immediately in the beer and the wood flavors can take months to fully develop.
- Oxidation flavors become apparent as time goes on as wood isn't air tight and allowed some oxygen permeation.
- Temp swings are not good for the beer
- When topping off tasting the beer to determine progression
- Smaller barrels have different surface areas and will age faster than larger 52/55gal. 5gal has 4 times more surface area exposure to the beer vs 52's.

- Empty Day
- Once ageing is completed you have to get the beer out of the barrel.
- Easiest way is to use a gas transfer tool but those are expensive.
- Cheaper was is to use a bung with two holes, racking cane, and a C02 line-in (pushing at a few PSI). Securing the bung with a strap is helpful. Barrels can withstand a bit of pressure so explosion risk minimal
- Have a scale to weigh out beer shares. 5 gal corny kegs weigh about 8 to 12lb and beer weighs about 8lbs per gal.

# Empty day economy rig

# Barrel Re-Use

- Often times barrels can be re-used for another beer. Usually it's best to choose a style that can handle flavors of the previous beer. Might need longer ageing time due to flavor extraction from first beer
- Cleaning for Re-Use
- Immediately after emptying, rinse barrel out with water.
- Then soak/rinse with sodium per-carbonate to clean.
- Soak/rinse with citric acid after this to neutralize any per-carb
- To sanitize, rinse with potassium metabisulfite
- Barrel is then ready to be refilled

- If it’s going to be refilled immediately some would skip the cleaning step and rack beer in immediately, or just rinse and sanitize with potassium metabisulfite but previous process is a best practice
- For long term storage without beer, fill the barrel full with a mixture of metabisulfite and citric acid and then bung. This should be changed periodically (directions online).
- Another method is, after cleaning to burn a sulfur stick in the barrel and then bung it which should be repeated about every 6 weeks. Make sure to have all alcohol fumes out of the barrel or they may catch fire and explode the barrel! (with the method barrel dries out more)
- These methods are to prevent molding of the barrel as well as infection causing bugs from taking hold. Once a barrel has been inoculated it’s basically impossible to get rid of that infection

- Other Barrel Re-Uses
- Sour beers
- Planters
- Furniture
- Firewood

# Barrel Ageing Problems

- Barrel Leaks through bunghole or staves when being filled
- Not enough beer on fill day
- Infection – brettanomyces, lactobacillus, pediococcus, acetobacterium, wild yeasts
- Too much barrel flavor or over-aged


# Questions?

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