

# WANDERBACK



## The Science of Barrel Aging Whiskey

**WANDERBACK**  
A STIRRED AMERICAN SINGLE MALT  
**WHISKEY**  
HOOD RIVER  
OREGON  
*Age for a minimum of 5 years. Distilled from 100% malted barley.*  
45% ALC. BY VOL. (90 PROOF) - 750ML.  
CONTAINS GRAIN. (1) ACCORDING TO THE SWEDISH GENERAL, WINE & SPIRITS ACT, WINE SHOULD NOT BE DRUNK ALCOHOLIC BEVERAGES BECAUSE OF THE RISK OF ALCOHOLIC DRINKING. WINE SHOULD NOT BE DRUNK ALCOHOLIC BEVERAGES BECAUSE OF THE RISK OF ALCOHOLIC DRINKING. WINE SHOULD NOT BE DRUNK ALCOHOLIC BEVERAGES BECAUSE OF THE RISK OF ALCOHOLIC DRINKING.

### BATCH NO. 3

A smooth single malt, finished in Port casks, with notes of pecan, dried dark fruit, and cocoa sub-

BOTTLED BY  
WANDERBACK DISTILLERY  
HOOD RIVER, OREGON





# Introduction

- Aging whiskey in a wooden cask is a tremendously complex multi-variate process
- The barrel affect is a large part of what makes whiskey great: It creates opportunities to change and create tastes
- We at Wanderback Whiskey have a huge amount of respect for the impact the barrel has on our whiskey
  - Our barrel aging philosophy is traditional - no shortcuts

# Who is Wanderback Whiskey Co?

- WHERE?
  - Hood River, Oregon
- MISSION?
  - To explore endless possibilities of bold American whiskeys
- MODEL?
  - LIMITED EDITION ONLY, NO FLAGSHIP....WHEN IT'S GONE IT'S GONE!
  - COLLABORATE WITH WORLD CLASS DISTILLERIES
  - AGE AND FINISH AT THE FAMILY FARM

# Wood Science – The Components of Oak for Ageing

**HEMICELLULOSE:** multiple sugars which convert once heat is applied, e.g. when charring a cask. These impart color to a spirit, as well as caramel, toffee and nutty flavors.

**LIGNIN:** concentrated in the tree's cell walls and is responsible for vanilla type flavors, as well smoky and spicy aromas.

**TANNINS:** phenols which occur naturally in wood as well as other plants, seeds, tea leaves and fruit skins. It lends bitter, astringent flavors and give a spirit texture.

**LACTONES:** occurs in higher concentrations in American oak than in European species. It imparts coconut aromas and a woody character, such as cloves.

# Wood Science: How Do Barrels Impart Flavor?

## EXTRACTION

- Flavor molecules in the wood dissolve in the spirit as the liquid moves in and out of the wood pores
  - Surface level: Created by heating the wood staves -caramels etc
  - Deep wood layers: Non-heated portion of the staves
- Temperature fluctuations causes a cycling effect
  - Pressure changes in barrel forcing liquid in and out of wood
  - More cycles = better!

# Wood Science: How Do Barrels Impart Flavor?

## OXIDATION

- New flavors are created in the spirit while resting in the barrel
  - Oxygen can pass through the walls of the barrel (but not whiskey!)
  - Oxidation increases complexity and intensity of flavors, and is in large parts responsible for fruity, spicy and minty notes.
    - Flavor compounds react with oxygen creating a new flavor elements
    - The more complex a spirit is before maturation, the more characteristics there are for oxidation to influence.

# Wood Science: How Do Barrels Impart Flavor?

## SUBTRACTION

- Flavors are removed from the spirit
  - A charred barrel's interior surface acts as a charcoal filter
  - Naturally filters sulphides (unpleasant metallic or gunpowdery-y taste)
  - Certain unwanted flavors evaporate
  - Other molecules combine to make different flavors

## PLUS SOME MAGIC AND MYSTERY





# Flavor Factors + Wanderback Approach

- Temperature and Climate
  - Barrel drying time and technique
  - Charring vs toasting
  - Initial spirit ABV at Barreling
  - Barrel wood and size
- Hood River ideal climate and temperature cycles
  - Farm has micro climate even more cycles!
  - Non climate controlled rack house: Barrels feel all the elements



# Flavor Factors + Wanderback Approach

- Temperature and Climate
  - Barrel drying time and technique
  - Charring vs toasting
  - Initial spirit ABV at Barreling
  - Barrel wood and size
- All our cask wood is air dried naturally
  - 3 years outside
  - Fits the taste profile we want

# Flavor Factors + Wanderback Approach

- Temperature and Climate
- Barrel drying time and technique
- Charring vs toasting
- Initial spirit ABV at Barreling
- Barrel wood and size

- Our wood is heavily toasted and lightly charred
- Want a balance with our other tastes
- Complex specialty grain bill

# Flavor Factors + Wanderback Approach

- Temperature and Climate
  - Barrel drying time and technique
  - Charring vs toasting
  - Initial spirit ABV at Barreling
  - Barrel wood and size
- Lower ABV will promote dissolving of more water soluble flavors
  - We barrel at a mid ABV of 60% as a balance between the water soluble and non-soluble barrel components

# Flavor Factors + Wanderback Approach

- Temperature and Climate
  - Barrel drying time and technique
  - Charring vs toasting
  - Initial spirit ABV at Barreling
  - Barrel wood and size
- New American oak
  - 53 gallon
  - Faster aging than scottish whiskies



# SAME WHISKEY, DIFFERENT WOOD

## Independent Stave Company

- American white oak
- High toast, low char
- Loose grain

## Canton Barrels

- American white oak
- Light toast, no char
- Tight grain





**WANDERBACK**

A SPIRITED AMERICAN SINGLE MALT  
**WHISKEY**

*Aged for a minimum of 2 years. Distilled from  
45% ALC BY VOL (90 PROOF)*

**GOVERNMENT WARNING:** (1) ACCORDING TO THE SURGEON GENERAL, WHOEVER DRINKS ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS. (2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY AND MAY CAUSE HEALTH PROBLEMS.



@wanderback

**BATCH NO. 1**

A balanced single malt whiskey with notes of wheat &

[info@wanderback.com](mailto:info@wanderback.com)

[www.wanderback.com](http://www.wanderback.com)



**WANDERBACK**

A SPIRITED AMERICAN SINGLE MALT  
**WHISKEY**

*Aged for a minimum of 3 years. Distilled from  
50% ALC BY VOL (100 PROOF)*

**GOVERNMENT WARNING:** (1) ACCORDING TO THE SURGEON GENERAL, WHOEVER DRINKS ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS. (2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY AND MAY CAUSE HEALTH PROBLEMS.



@wanderbackwhiskeyco

**BATCH NO. 2**



**WANDERBACK**

A SPIRITED AMERICAN SINGLE MALT  
**WHISKEY**

*Aged for a minimum of 3 years. Distilled from  
45% ALC BY VOL (90 PROOF)*

**GOVERNMENT WARNING:** (1) ACCORDING TO THE SURGEON GENERAL, WHOEVER DRINKS ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS. (2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY AND MAY CAUSE HEALTH PROBLEMS.

**BATCH NO. 3**

A smooth single malt, finished in