

# AD

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AMERICAN DISTILLER: A SOURCE OF INFORMATION ON THE DISTILLING PROCESS



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## WHISKEY 101

by Gary Regan and Mardee Haidin Regan

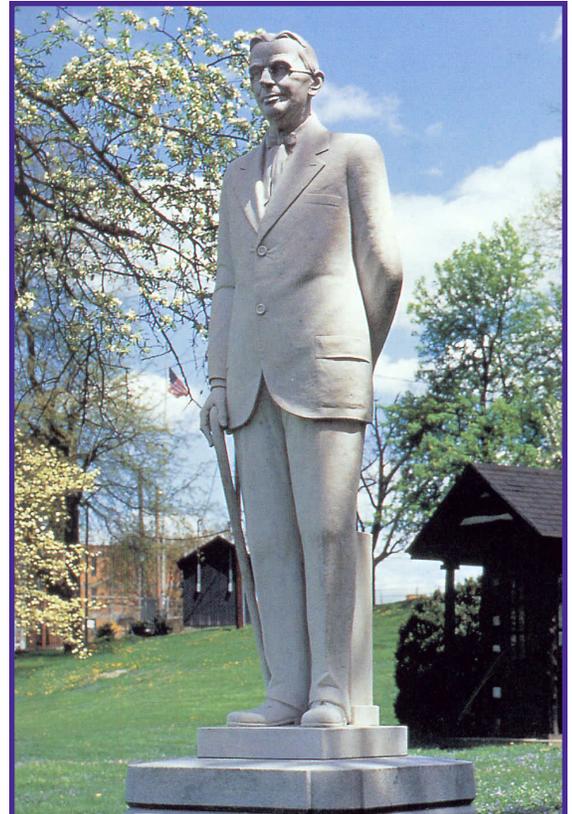
**Y**es, we know, we're impatient, too. But let's face facts: Without some frame of reference and/or some basic understanding of a subject, we just can't grasp it as we should. Therefore, like all those survey courses you sat through (and learned from), here's a bit of what will make American whiskeys more compelling.

Whiskey is a distilled spirit made from a fermented mash (read a stew) of grains, yeast, and water. Many different styles of whiskey exist — bourbon, Tennessee whiskey, rye, blended scotch, single malt scotch, Irish, Canadian, and Japanese whiskeys, among them, as well as some new ones that are springing up from places such as New Zealand and Wales. Each of these whiskeys has its own definitive characteristics, and in the United States, specific legal guidelines define the production of each type of whiskey. If distillers want to call their products straight whiskey, they must meet all the criteria. For those of you who like to be in the know, here's how it all works:

### American Straight Whiskies

Straight whiskeys made in the United States must be:

**n Distilled out at less than 160 proof** (80 percent abv — alcohol by volume). The fact is, most American straight whiskeys run off the still at much lower proofs than this, and by keeping the distillation proof low, the whiskey makers ensure that more flavor stays in the spirit. When whiskey ages, certain impurities, known as congeners, develop into the "flavor particles" in the spirit, and whiskeys that come off the still at lower proofs contain more congeners. In comparison, vodka, an all-but-flavorless spirit, usually comes off the still at almost 95 percent abv. Furthermore, straight whiskey must



*To the Honorable Order of Kentucky Colonels in the Commonwealth of Kentucky and to all the bourbon lovers on Earth.*

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be barreled for aging at no more than 125 proof (62.5% abv).  
n **Aged for a minimum** of two years in new charred oak casks. Most of the straight whiskeys in your liquor store have spent four years in the cask, and those that have not must include an age statement on the label. Avoid these younger bottlings; four years has proved its value.

n **No coloring or flavoring** can be added to straight whiskey. That's right. Although blended whiskeys are often colored by the addition of caramel, all of the color in straight whiskey is a result of the spirit's contact with the barrel. Straight whiskeys must be bottled at a minimum of 80 proof (40% abv); the only acceptable addition is water, which is used to reduce the proof.

Each type of straight whiskey listed below must be made according to these basic legal standards, but each style must also conform to some regulations within its category:

### **Straight Bourbon**

Due to a congressional proclamation issued in 1964, bourbon must be made in the United States. Although some folks think that it must be made in Kentucky, it just isn't so; bourbon can be made anywhere in the United States.

In addition, bourbon must be made with a minimum of 51 percent corn, although most distillers use upwards of 70 percent of this indigenous American grain. The other grains used to make bourbon (known as "small grains") though not stipulated by law, are malted barley and either malted rye or malted wheat.

### **Straight Rye Whiskey**

Straight rye must be made with a minimum of 51 percent rye grain. The other grains used to make rye are usually malted barley and corn.

### **The Other American Spirit: Tennessee Whiskey**

Although the U.S. government does not address the subject of Tennessee whiskey, distilleries in the state of Tennessee abide by their own set of rules in order to produce what they label Tennessee whiskey.

Just two distilleries remain in Tennessee today — **George Dickel's Cascade Distillery** in Tullahoma, and just down the road a piece is the **Jack Daniel's #1 Distillery** in Lynchburg (both offer incredibly great tours if you happen to be passing through), and both these plants make Tennessee whiskey — not bourbon. Most people think that the difference between bourbon and Tennessee whiskey is connected to the words "sour mash" that appear on Tennessee bottlings, but that's not accurate at all. In fact, all bourbons and Tennessee whiskeys presently available are made by the sour-mash process (see "Whiskey Terms and Phrases"). The procedure that distinguishes Tennessee whiskey from all others is a peculiar form of filtration known as the **Lincoln County Process**.

This method of filtering whiskey before it is put into the wood is said to have been invented in the early 1800s by a Tennessee distiller by the name of Alfred Eaton. His process involves setting fire to stacks of sugar-maple lumber (done on site at both Tennessee distilleries) and controlling the flames so that the wood burns to charcoal, not ashes. The charcoal is then chopped into small bits and used to fill huge vats that are about 10 feet deep. Fresh whiskey — straight off the still — is dripped onto the top of the charcoal, works its way through to the bottom, and finally is collected for barreling and aging.

We have tasted Tennessee whiskeys straight off the still and again later, after the mellowing process, and can vouch for the fact that the Lincoln County Process contributes the wonderful "sooty sweetness" that is not present in bourbons. (Many bottles of bourbon bear the words "charcoal filtered", but don't be confused — this refers to filtering the whiskey after aging with activated charcoal, a process that can actually remove flavors from the whiskey. Tennessee whiskey goes through the same quick filtration process after aging, but it's the slow drip over charcoal prior to aging that makes Tennessee whiskey so distinctive.)

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## **Whiskey 101: The Vocabulary**

### **Whiskey Terms and Phrases**

Look at any whiskey label and there's bound to be something you don't understand. Some have words or designations that make them sound very special. Are they? Is it all hype? What do those catchy terms and phrases actually mean? Well, some of it is hype, but most of them actually have meanings that can influence your purchases. Here are a few terms to look for:

#### **Bottled-in-Bond**

The Bottled-in-Bond Act of 1897 states that distillers can store their barrels of straight whiskey in governmentally supervised warehouses for a period of at least four years. After four years or longer the whiskey must be bottled at 50% abv, or 100 proof. Many people believe that the term is an endorsement of

quality, but the fact is that straight whiskey bottled at 100 proof that doesn't bear an age statement (denoting a minimum of four years in the wood) is of a similar caliber.

#### **Sour Mash**

Here's the scoop on sour mash — the term that causes more bar side arguments than how to make a Mint Julep. Sometime prior to the Civil War, a Scottish distiller in Kentucky, Dr. James Crow, perfected a method of making whiskey that involved draining off the liquid that remained from the primary distillation and then adding a portion of this liquid to the mash of cooked grains, yeast, and water that would be used for his next batch of whiskey. We think of sour mash as being akin to

*CONTINUED ON PAGE 4*

# Gin - Origins and History

by Alan S. Dikty

Gin is a juniper-berry-flavored grain spirit. The word is an English shortening of *genever*, the Dutch word for juniper. The origins of gin are a bit murky. In the late 1580s a juniper-flavored spirit of some sort was found in Holland by British troops who were fighting against the Spanish in the Dutch War of Independence. They gratefully drank it to give them what they soon came to call “Dutch courage” in battle. The Dutch themselves were encouraged by their government to favor such grain spirits over imported wine and brandy by lack of excise taxes on such local drinks.

A clearer beginning was a few decades later in the 1600s when a Dr. Franciscus de la Boë in the university town of Leiden created a juniper and spice-flavored medicinal spirit that he promoted as a diuretic. Genever soon found favor across the English Channel; first as a medicine (Samuel Pepys wrote in 1660 of curing a case of “colic” with a dose of “strong water made with juniper”) and then as a beverage.

When the Dutch Protestant William of Orange became king of England, he moved to discourage the importation of brandy from the Catholic wine-making countries by setting high tariffs. As a replacement he promoted the production of grain spirits (“corn brandy” as it was known at the time) by abolishing taxes and licensing fees for the manufacture of such local products as gin. History has shown that prohibition never works, but unfettered production of alcohol has its problems too. By the 1720s it was estimated that a quarter of the houses in London were used for the production or sale of gin. Mass drunkenness became a serious problem. The cartoonist Hogarth’s famous depiction of such behavior in “Gin Lane” shows a sign above a gin shop that states, “Drunk for a penny/Dead drunk for twopence/Clean straw for Nothing.” Panicky attempts by the government to prohibit gin production, such as the Gin Act of 1736, resulted in massive illicit distilling and the cynical marketing of “medicinal” spirits with such fanciful names as Cuckold’s Comfort and My Lady’s Eye Water.

A combination of reimposed government controls, the growth of high-quality commercial gin distillers, the increasing popularity of imported rum, and a general feeling of public exhaustion gradually brought this mass hysteria under control, although the problems caused by the combination of cheap gin and extreme poverty extended well into the 19th century. Fagin’s irritable comment to a child in the film *Oliver* --“Shut up and drink your gin!”--had a basis in historical fact.

Starting in the 18th century the British Empire began its worldwide growth, and wherever the Union Jack went English-style gins followed. In British colonies in North America, such celebrated Americans as Paul Revere and

George Washington were notably fond of gin, and the Quakers were well-known for their habit of drinking gin toddies after funerals.

The arrival of the Victorian era in England in the mid-19th century ushered in a low-key rehabilitation of gin’s reputation. The harsh, sweetened “Old Tom” styles of gin of the early 1700s slowly gave way to a new cleaner style called dry gin. This style of gin became identified with the city of London to the extent that the term “London dry” gin became a generic term for the style, regardless of where it was actually produced.

Genteel middle-class ladies sipped their sloe gin (gin flavored with sloe berries) while consulting *Mrs. Beeton’s Book of Household Management* (a wildly popular Victorian cross between the *Joy of Cooking* and *Martha Stewart Lifestyle* books) for gin-based mixed drink recipes. The British military, particularly the officer corps, became a hotbed of gin consumption. Hundreds of gin-based mixed drinks were invented and the mastery of their making was considered a part of a young officer’s training. The best known of these cocktails, the gin and tonic, was created as a way for Englishmen in tropical colonies to take their daily dose of quinine, a very bitter medicine to ward off malaria. Modern tonic water still contains quinine, though as a flavoring rather than a medicine.

In Holland the production of genever was quickly integrated into the vast Dutch trading system. The port of Rotterdam became the center of genever distilling as distilleries opened there to take advantage of the abundance of needed spices that were arriving from the Dutch colonies in the East Indies (present-day Indonesia). Many of today’s leading Dutch genever distillers can trace their origins back to the 16th and 17th centuries. Examples include such firms as **Bols** (founded 1575) and **de Kuypere** (1695).

Belgium developed its own juniper-flavored spirit, called *jenever* (with a “j”), in a manner similar to that in Holland (which controlled Belgium for a time in the early 19th century). The two German invasions of Belgium in World Wars I and II had a particularly hard effect on jenever producers as the occupying Germans stripped the distilleries of their copper stills and piping to use in the production of shell casings. The present-day remaining handful of Belgian jenever distillers produce primarily for the local domestic market.

Gin may have originated in Holland and developed into its most popular style in England, but its most enthusiastic modern-day consumers are to be found in Spain, which has the highest per capita consumption in the world. Production of London dry-style gin began in the 1930s, but serious consumption did not begin until the mix of gin and cola became inexplicably popular in the 1960s.

Gin production in the United States dates back to colonial times, but the great boost to gin production was the advent of National Prohibition in 1920. Moonshining quickly moved in to fill the gap left by the shutdown of commercial distilleries. But the furtive nature of illicit distilling worked against the production of the then-dominant whiskies, all of which required some aging in oak casks. Bootleggers were not in a position to store and age illegal whisky, and the caramel-colored, prune-juice-dosed grain alcohol substitutes were generally considered to be vile.

Gin, on the other hand, did not require any aging, and was relatively easy to make by mixing raw alcohol with juniper berry extract and other flavorings and spices in a large container such as a bathtub (thus the origin of the term “bathtub gin”). These gins were generally of poor quality and taste, a fact that gave rise to the popularity of cocktails in which the mixers served to disguise the taste of the base gin. Repeal of Prohibition at the end of 1933 ended the production of bootleg gin, but gin remained a part of the American beverage scene. It was the dominant white spirit in the United States until the rise of vodka in the 1960s. It still remains popular, helped along recently by the revived popularity of the martini.

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whiskey DNA—it brings the character of the former batch of whiskey into each new batch, just as sourdough starter is used to establish generations of sourdough bread. Chemically, this method of making whiskey actually alters the pH in the mash and creates a very friendly environment for the yeast.

### Small-Batch Whiskey

Most people seem to think that “small batch” denotes whiskey that has been distilled in small quantities — but that isn’t true. Small-batch whiskeys are the result of another side of the distiller’s craft altogether. The term was introduced in the late 1980s by the Jim Beam Brands Company, and according to them, the term applies to “rare and exceptional Bourbons married from a cross section of barrels in the rack house.” So how does that work?

Most of the warehouses where whiskey is aged are unheated and stand between seven and 12 stories tall. Since the ambient temperature differs on each level, growing progressively hotter toward the top, the whiskeys on each floor mature at different rates. Distillers of small-batch whiskeys select barrels from particularly “sweet” locations that have aged into particular styles and mingle them together to achieve consistency. Since not many barrels mature into a style consistent with the quality that these distillers seek, they are, indeed, “rare and exceptional.”

However, we should point out that there are many rare and exceptional bourbons out there that aren’t designated as

## Gin Cocktails

### Classic Martini

In a shaker combine:

- 2 oz. gin
- Dash white vermouth (1/8 oz.)
- Ice to fill

Shake and strain and into a Martini glass, or a short glass.

Garnish with an olive.

### Tom Collins

In a tall glass combine:

- 2 oz. gin
- 1 oz. lemon juice
- 1 tablespoon sugar

Stir, then fill glass with ice. Fill with club soda.

### Gin & Tonic

Fill a tall glass with ice. Add:

- 1-1/2 oz. gin
- Tonic water to fill

“small batch” bottlings, simply because some distillers understandably refuse to use a phrase that might confuse their products with those of another company’s. Our best advice when you are making a purchasing decision is: Look for an age statement. All of the best small-batch whiskeys are labeled with an age statement, and the best whiskeys that aren’t designated as small-batch but are 10 or more years old also fit this category.

### Single-Barrel Whiskey

Like small-batch whiskeys, single-barrel bottlings are also selected from prime areas of the warehouse. However, in the case of single-barrel whiskeys, the distiller doesn’t have the luxury of marrying one barrel with another to achieve a particular style — he has to rely on his taste buds to select the exact right barrel. Though bottles of a single-barrel whiskey might differ slightly from each other if they came from different barrels (check the label, the barrel number should be noted), each master distiller selects whiskeys that have matured into a specific “flavor profile,” and are, therefore, very similar to one another.

### Vintage Bourbons

At present, Evan William’s Vintage Bourbon is the only vintage-dated bottling on the market. It is also a single-barrel bourbon. The only real difference here is that the distiller has chosen to note the date of distillation on the label, signifying that this is a special selection that is worthy of note.

# Differences and Similarities Between Brewing and Scotch Whisky Production

by Graham Stewart

Both beer and Scotch whisky production have a maturation stage, but the objectives and the operation of the two processes are very different. Beer maturation includes all the transformations that occur between the end of primary fermentation and the final filtration of the beer. Classically, fermentation and maturation are considered separate steps in brewing, but in reality there is significant overlap. In traditional lager brewing, modifications of taste and aroma are associated with a cold and active secondary fermentation, which includes: (1) carbonation by fermentation of residual sugars; (2) absorption of various nonvolatile materials onto the surface of the yeast; (3) reduction of haze-forming potential by precipitation of protein/polyphenol complexes; and (4) progressive changes in flavor and aroma.

This process can take from a few days to six weeks. With the exception of a few isolated examples, the traditional German and Czech three-month aging period for lagers is a process of a bygone age.

The main difference between traditional maturation systems in ale and lager brewing is that ales are conditioned by warm storage, holding the beer at 12–20°C, while lagers are conditioned at much lower temperatures (0–4°C). Under warm maturation conditions, residual sugars are rapidly metabolized and removal of unwanted flavours (sometimes called “green flavors” because of their resemblance to green apples) are completed in one to two weeks (or less), depending on the type of beer, the yeast strain, the wort composition and the primary fermentation conditions. Physical (colloidal) stability can be enhanced by adsorbents such as PVPP (for polyphenols) and silica gel (for “sensitive” proteins).

As discussed in a previous article in this series, the Scotch Whisky Act stated that Scotch whisky must be “matured in an excise warehouse in Scotland in oak casks, the period of that maturation being not less than three years.” However, many whiskies are matured for considerably longer than the legally required period of time. Maturation in this context is the interaction of a charred oak cask (barrel) with a spirit distillate (malt or grain) to subtract, add or produce flavour constituents in a given period of time. This process has been given the acronym of SAP (subtract, add or produce).

During maturation, a number of changes occur to the spirit while it is in an oak cask: (1) production of colour; (2) increase in the complexity of the spirit; (3) production of fragrance and estery character; (4) removal of off-notes (for example, cereal-like, sulfury, rubbery); (5) production of astringency; (6)

development of mellowness (reduction of pungency).

Although the unique flavor notes of distilled malt-based spirits are fashioned during distilling (this is an area that will be discussed in the next article in this series), at least half of the quality of matured spirits is due to maturation in oak casks. Many species of wood have been employed for maturation, but only a few species of oak are the material of choice because of their physical and chemical properties. Maturation in these oak casks is accompanied by a loss of liquid (water and alcohol), which is called “the angel’s share.” The relative rates of loss of water and alcohol determine whether the aged whisky has a higher or lower alcoholic strength than at filling. In Scotland, where the casks of whisky are stored in cool, unheated but humid warehouses, the alcoholic strength decreases.

Traditionally, most scotch whisky has been stored in secondhand casks made from American oak that have been used for the maturation of bourbon. In addition, a small volume of

Scotch whisky is matured in Spanish oak casks that were previously used to mature sherry. Currently, bourbon distillers are required by law to use casks (called barrels in North America) only once,

and these casks are subsequently sold to the Scotch whisky industry and others. As the sale of bourbon is decreasing, a diminishing quantity of casks will be available while demand is increasing from Caribbean countries, Central and South America and the Far East.

In the medium to long term, there is a need to focus on the introduction of new wood (previously unused) into the filling system. The decharring/recharring process, however, assists in prolonging the active maturation life of a cask. This is based on scraping off the old surface layers, exposing the fresh surface and conducting a controlled heating of it to generate a new reservoir of thermal products.

Maturation of whisky in oak casks is an expensive process, and it is hardly surprising that consideration has been given to alternative methods. These methods include: pretreatment of both wash and distillate with activated carbon; chemical treatment of the whisky to convert aldehydes to esters; and the use of oxidation treatments. Such treatments are not used in the industry, which adheres to the traditional nature of the whisky-producing process.

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# Liquid Spice

## Cooking with Distilled Spirits

by Lucy Saunders • www.beercook.com

I adapted this recipe from Chef Tim Bucci of the Cooking and Hospitality Institute of Chicago, to highlight the flavors of fresh pear with aromatic Eau de Vie. It's a simple, fast appetizer, perfect for late spring pears.

### Gorgonzola and Pear Tartlets

Mini tart shells (2" diameter) or cracker cups (such as NevaBetta brand)  
8 oz. Gorgonzola cheese, crumbled  
1 clove garlic, peeled and minced  
1 shallot, peeled and minced  
2 T. basil, chopped  
Salt and pepper to taste  
1 large D'anjou pear, peeled, cored and finely diced

1/4 C. toasted walnuts, chopped  
1 T. olive oil  
2 T. Pear Eau de Vie (I used **Clear Creek Williams Pear**)

Combine crumbled cheese, garlic, shallot, basil and season with salt and pepper to taste. Mix all well, and place in tart shells (about 1 scant T. per shell). Blend the pear, walnuts, olive oil and pear eau de vie, mix well and place 1 t., or a small mound, on top of each cheese tartlet.

Yield: about 12 tartlets.

### E V E N T S

■ **Worldwide Distilled Spirits Conference.** Sept. 8-12, at Roxburghe Hotel in Edinburgh, Scotland. [www.distilling-conferences.com](http://www.distilling-conferences.com).

■ **Kentucky Bourbon Festival,** Sept. 18-22. 107 E. Stephen Foster Avenue, Bardstown, Kentucky. 800-638-4877, [www.kybourbonfestival.com](http://www.kybourbonfestival.com)

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