



CASK TRADE

MASTERS OF WHISKY APPRECIATION

THE CASK TRADE GUIDE TO SCOTCH WHISKY

HISTORY, DISTILLATION, MATURATION AND APPRECIATION



The Scotch Whisky Industry contributes close to five billion pounds to the UK economy, earning £140 in exports *every second*, and is continuing to grow.

In February 2019, rare whisky topped the Frank Knight luxury investment index beating coins, classic cars and fine wine.

Find out all you need to know about Scotch Whisky and Casks in this guide!



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A Short History of Whisky

The origins of the whisky phenomenon are not clear. Nobody knows who invented Whisky, or for that matter when it was invented. What we do know is that distillation arrived in Ireland and subsequently Scotland during the late middle ages, and was most likely brought by monks travelling back from the continent. Italian records from the 13th century tell us that aqua vitae was produced by monasteries for medicinal purposes, rather than for social consumption.



The 'Water of Life'

The earliest mention of whisky in Ireland is a little worrying: in 1405 the death of a local chieftain was attributed to his consumption of 'a surfeit of aqua vitae' at the Christmas festivities. In Scotland, James IV of Scotland was said to enjoy aqua vitae, or uisga beatha, meaning water of life. In 1494 he ordered 500 bottles from a friar called John Cor, and distilled at Lindores Abbey.

From Uisge, to Whisky!

Following the reformation and the resulting dissolution of the monasteries, the monks took their stills and their knowledge of distillation and blended it into everyday life. Despite being non-aged and potentially deadly, uisga (or 'whisky' as it became known) became an integral, everyday part of life. Even when the English Malt Tax of 1725 shut down a huge number of distilleries, many continued illicitly and distilled by night, with the resulting spirit known as 'moonshine'. Due to illicit distillers and smugglers being forced to store their moonshine and hide from the government tax man, many began to put their whisky into oak casks. Often these were small 'quarter casks' that could be easily loaded onto the backs of donkeys for smuggling over the highland passes. The whisky was soon found to be much smoother, darker and more flavoursome as a result of its time in wood - or at least the whisky that wasn't hurriedly poured into herring or tar barrels!



THE WHISKEY STILL.

The Birth of the Whisky Industry

In the early 19th century many distilleries obtained official licences, with many of the famous names we know today such as Highland Park, Lagavulin and Glen Ord being established. Whisky production was soon begun in earnest on an industrial scale, with many distilleries utilising the latest steam technology. However, single malt whisky was still in its infancy, with most of the whisky being used in the ever-popular blends.



Whisky's First Boom

However, Scotch's big boom was yet to occur. In 1863, French winemakers in the southern Rhone noticed their vines inexplicably deteriorating. By 1889, phylloxera had decimated almost every vineyard in Europe. Due to this tragedy, French wines and brandies were in seriously short supply and Scotch whisky, due to its growing quality and ready availability, soon became the drink of choice. The quickly growing demand necessitated the building of even more distilleries. Glenfiddich first fired up its stills in 1886 but they couldn't produce enough spirit, so it was quickly followed by the construction of Balvenie (originally known as Glenfiddich No.2) next door in 1892. Many of these distilleries were either family owned or run by private enterprises. Some were forced to shut due to bankruptcy, others were gutted by fires. Many closed their doors during the barley shortages of the First World War, and not all of them re-opened.

Whisky and War!

By the outbreak of the Second World War, Scotch was truly a premium product, and was one of three main quality British products used to pay the United States for war equipment before the lend-lease agreement came into effect. However, this agreement negated the need for immediate repayment, and the menace of the U-Boats in the Atlantic resulted in an acute food shortage. Many distilleries ceased production again due to the acute lack of grain, with others being used to shelter troops or store wartime equipment.

An Atlantic convoy during WW2



The Rise of Single Malts

The second half of the 20th century heralded a new era for Scotch Whisky. Blends continued to be popular, but the Single Malt finally came onto the world stage in a big way during 1960's and 70's. Demand steadily grew, being reflected in the amount of distilleries that were either established, overhauled or expanded during this period. During the 80's and 90's, distillers began to push the boundaries, maturing their spirit in an ever-growing variety of cask types from sherry to chardonnay. However, a surplus of supply led to a few distilleries being mothballed or permanently dismantled.



Port Ellen Distillery, Islay

Today, there are 128 distilleries operating in Scotland, and the number is quickly growing through the establishment of new distilleries, the resurrection of closed distilleries and the expansion of existing distilleries.

There are over 20 million casks currently maturing at this very moment; that's over four barrels for every person living in Scotland. The number of bottles exported last year, laid end on end, would reach the moon.





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The Production Process

Malting, Mashing, Fermentation and Distillation



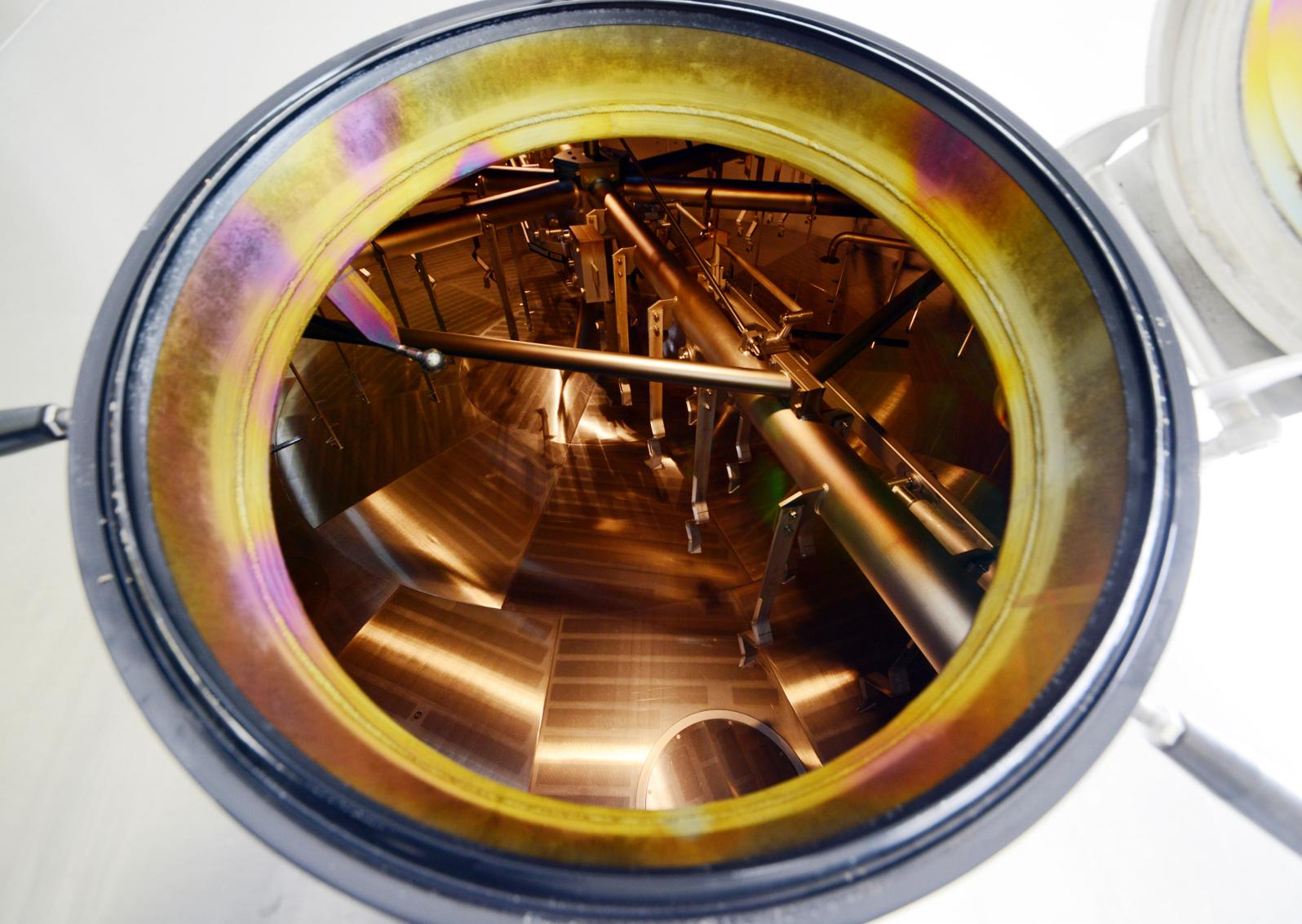
Step 1 *Malting*

The first step in whisky production, malting is the process in which grain is soaked in water to encourage germination, then dried with hot air to produce malt for the production of whisky. The malting process was traditionally performed on site, but today many distilleries buy in ready-malted barley.

The drum malting, also known as a rotary drum, this is a modern technique for malting barley, in which a large drum containing wet grain is slowly revolved to prevent the rootlets becoming matted. The largest malting drums in Scotland are located at Port Ellen Maltings on Islay.

Once the malted barley is dried, it is ground down into grist before the mashing process to increase the solubility of various sugars.





Step 2 Mashing

Mashing is the process in which fermentable sugars are extracted from the grain. The grist is soaked in hot water (between 62-70 degrees) for a period of time, which encourages starch to be broken down into sugars through the activation of an enzyme called amylase.

The resulting brown sugary liquid known as 'wort' is then extracted, with even hotter water (95 degrees) being used to extract any remaining sugars from the grain - this part of the mashing process is known as 'sparging'.

The Mash tun is a large cylindrical vessel in which the mashing process takes place. The mash tun keeps the mash at a steady temperature, and often an automated 'mash rake' is employed to stir the contents ensuring consistent temperatures - this can be clearly seen in the photo above.

Step 3 *Fermentation*

Fermentation, where the sugars in the wort are turned into alcohol using yeast, takes place in large washbacks. Essentially huge fermentation tanks, washbacks are large cylindrical vessels used for the fermentation of wort. They are traditionally made from Oregon pine, although many modern washbacks are made from steel.

Fermentation produces the 'wash', a rough strong beer. As a rite of passage, new workers at a distillery are often have to drink two pints to earn their stripes!

Some distilleries such as Caol Ila have not upgraded from their original wooden washbacks, claiming that it will affect the flavour of the whisky. Different lengths of fermentation give different characteristics to the wash, and consequently to the character of the distillery's spirit.

Fermenting wort in a wooden washback at Teeling Distillery, Dublin



Step 4 *Distillation*

Distillation is the process in which alcohol is extracted from the fermented wort, or wash, through selective boiling and condensation. It is a physical separation process rather than a chemical reaction. Alcohol vapours evaporate, rise up the still and over the Lyne Arm, where they condense and the resulting new-make spirit is collected. Most whiskies are distilled twice, but some lowland and Irish whiskies are distilled three times.

The copper pot still is the only type allowed in the production of single malt whisky. Pot stills are essentially large copper kettles with long necks that are used to extract alcohol from the wash via evaporation. Pot stills are made in a range of shapes and sizes depending on the quantity and style of spirit desired.

Reflux occurs in taller stills where some of the heavier compounds in the vapour condense before they can pass over the swan's neck. This leads to them being re-distilled, and often results in a lighter, more delicate style of whisky.





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Maturation

The production process gives the whisky roughly 20-30% of its style and flavour, with the rest all being extracted from the maturation process.

Oak is an extremely durable wood but is also slightly porous, allowing the cask to breath. In humid conditions such as those found in Scotland, this allows a small amount of alcohol every year to evaporate into the air (the Angel's Share), but also draws the spirit deep into the wood.

As temperatures fluctuate from month to month and year to year, the wood slowly expands and contracts. The spirit is drawn in and out of the oak, softening it and imparting flavour and colour.



Warehouses

Maturing casks are kept in secure bonded warehouses. The traditional ‘dunnage’ warehouses found on site at many distilleries have thick stone walls and earth floors that help to maintain consistent temperatures and humidity.

Every year, a small amount of alcohol evaporates from maturing casks. The rate of evaporation through the oak is affected chiefly by temperature and humidity. The resulting airborne alcohol encourages the growth of the ‘Angel’s Share Fungus’, which grows freely on most nearby exterior surfaces.

The dunnage warehouses at Glenfarclas are kept consistently cool by a wind that blows off the mountain of Benrinnes, resulting in a low angel's share and a stronger whisky.

At Glen Moray, the warehouses are below the water table; the high humidity results in a higher angel's share.

Casks maturing in a traditional dunnage warehouse at Balblair distillery

