

STAY BRIGHT – KEEP BRIGHT

The Impact of Stainless Steel on Everyday Life

Table Knives

Sharp and Blunt Knives

When the first stainless steel knives were introduced they were indeed labour-saving when washing up. However, after a time, all stainless steel knives ‘lost their edge’ – they became blunt and a fresh loaf of bread could not be sliced!

So that a knife would slice bread more easily, the Sheffield cutler ground a serrated or saw-like edge to the blade. This solved the problem of cutting slices of bread. Over time, many variations of the saw-tooth edge were developed, and all were designed to make a blunt knife cut! No other tool is expected to cut with so little maintenance, used by all to cut anything that is required.

The Beginnings of Stainless Steel for Table Knives

The discovery and development of stainless steel for table knives coincided with a very interesting period of this country’s history, covering the period from 1913 to about 1933.

Before the First World War even modest households had a ‘skivvy’ – a mother’s help who also cleaned the fire grate, brought in the coal, and washed the pots. She also looked after and cleaned the cutlery, especially the table knives. After each meal these would need cleaning because knife steel, at that time, went rusty when it had been cutting vegetables and meat for the meal. The food acids also turned the knife blades black which, if not cleaned off before using again, affected the taste of the food.

This all changed after the war. Not only had many young women gone into war-related work rather than domestic service, but after the war society had changed dramatically: stable households had been disrupted through the great loss of life in the war and the outbreak of influenza after it, and young women had other opportunities for work.

Stainless steel table knives arrived at just the right time, doing away with a regular and menial task. Stainless steel table knives were promoted as labour-saving, modern and stylish so that even the lady of the house could look after them! More importantly, it helped the Sheffield cutlery industry get back on its feet after the difficulties of war-time production. Harry Brearley’s discovery of stainless steel in

1913 was one of several major developments from Sheffield that helped to shape the modern world.

The 'Blunt' Knife

In the 1930s Harry Brearley was chided by fellow Sheffielders as 'the man who made blunt knives'. Until stainless steel table knives were developed, all knives had been made from carbon steel (about 99% iron and 1% carbon) which was first produced in Sheffield in the late 1600s. They were cleaned by rubbing on an emery board, and this rubbing action unknowingly sharpened the edge of the blade – so table knives always cut without effort.

But a stainless steel knife only needed a wipe with a cloth, so the edge was never sharpened and became blunt. The art of keeping table knives in good order has almost been lost.

Keeping the Edge

One of the oldest devices used for sharpening knife blades is the sharpening steel. It is still used by butchers to keep the cutting edge of their knives in the best condition. Many other gadgets have been made over the years, and many were useless.

In Sheffield we have the world's only research facility for knife cutting edges. This is CATRA (the Cutlery and Allied Trades Research Association), established over 60 years ago. They have recently developed a knife-sharpening machine (the Catrasharp) that will sharpen domestic and trade knives to a correctly-profiled cutting edge: blunt knives are a thing of the past.

Cutlery Quality

Stainless steel can rust or corrode unless these three conditions apply:

1. The steel has to have the correct analysis. Cutlery grade steel has 12% chromium and 0.3% carbon, with no nickel.
2. The steel has to have the correct hardness as it will fail if it is too hard or too soft. The 0.3% carbon gives it the hardness.
3. The steel has to have the correct surface finish or smoothness.

Cutlery quality stainless steel is used only to make knives. The stainless steel used to make spoons and forks (known in the cutlery trade as flatware) is different and was developed in 1923 by Dr Hatfield of Firth Brown. For flatware 0.1% carbon is used which gives a toughness but with a reduction in hardness. This steel was

known as *Staybrite* and is classified as 18/8 (18% chromium; 8% nickel; 0.1% carbon). It will not take a cutting edge but can be easily formed to make spoon bowls and fork prongs, which could not be done with cutlery stainless.

Because of these continual improvements Sheffield-made stainless steel is better than ever.

Stainless Steel Table Knife Blades – Surface Finish

Table knives that were made from ordinary carbon steel (the steel used before stainless) were ground by hand to a smooth fine finish. The finish could be made even finer by an abrasive process known as glazing, which gave an exceptional finish to the blade. In about 1930 mirror polishing was developed, which was initially charged as an extra. The polishing compound was a hard soap-like substance which contained nickel and this was transferred to the surface of the blade. Eventually all blades were mirror-finished as standard.

When stainless steel appeared, the grinders had to overcome many problems due to the mix of the new steel. The high chromium content clogged the grinding wheel so that it was unable to grind properly. To overcome the problem the grinder 'raced' his wheel by removing the outer layer of the grinding wheel to clean up the wheel's surface. The wheel then didn't last as long, so stainless steel blades were 50% more expensive to grind.

After the Second World War, as fewer people were prepared to do the dirty, hard work attached to buffing, machines were introduced to take over what had been done by hand. Fewer customers were prepared to pay for hand-made articles. But today there are still a few Sheffield cutlers at work, producing machine-ground and glazed blades that are finally hand-buffed to give a superior finish.

Cutlery Handles

The first stainless steel knife handles were the same as those on the 'old' knives. Mostly an early plastic material called Xylonite was used, which could catch fire if caught on the naked flame of a gas cooker. A few knives of extraordinary quality of design and finish were made by R. F. Mosley with ivory handles. These were destined for the wealthiest tables.

Soon solid stainless steel handled blades were produced, with the blade and handle forged from the same piece of steel. These became popular during the Second World War as they were easier to make and more hygienic. They were heavier to use though. Another form of handle was the hollow one, with two halves being

stamped and welded together before being soldered onto the blade. The handles usually had a patterned design stamped onto them, and they were generally used for the restaurant, hotel and cruise ship trade.