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# Ein real ale, bitte

Brewing German beer in the UK

BY STUART HOWE

**Historically the brewers of Great Britain and Germany have existed largely independently of each other. The language barrier and some disagreements early in the 20th century led to separate paths being followed. Today, thanks to an increased number of breweries – and most Germans speaking better English than the average Brit – there is an increasing number of German-trained brewers taking up the reins in the UK.**

British brewers would study at Nottingham, Heriot Watt or with the IBD and pursue a career in the UK and English-speaking countries in the southern hemisphere. German brewers would study at Munich or Berlin and go on to work in Germany, occasionally in Europe but very rarely in the UK. In this article we will meet two who have recently made the jump, find out about

them, their breweries and get their perspective on the strange things we do in Great Britain.

## Matthias Seidl at the Mad Squirrel Brewery

The Mad Squirrel Brewery didn't start off mad, it was originally Red. The Red Squirrel Brewery started up in 2004 with the squirrel officially sectioned under the

Mental Health Act in 2017. As well as its descent into insanity the 13 years saw a gradual shift of identity from a 'real ale' to craft beer producer.

Now, as well as free-trade sales, the brewery has eight brewery taps and bottle shops located in well-to-do market towns in the Chiltern hills just outside London. This route to market accounts for 20% of sales. Who said the days of the vertically-integrated brewing business were gone? Production this year is expected to top 10khL with strong growth on all fronts.

Matthias Seidl, Brewing Director at Mad Squirrel is originally from Germany and has an MSc in Brewery Engineering from the Technical University of Munich Weihenstephan. Matthias joined the brewery in 2016. Originally he didn't want to be a brewer – he wanted to set the world of music alight with his jazz guitar. After failing to rotate the celebrity armchairs at two auditions for music



**The Mad Squirrel: lurking menacingly in the undergrowth**

school in Munich he decided not to risk seeing if third time really was lucky and considered an alternative career.

As someone keen on food and drink who dabbled in homebrew, the brewing engineer course at Weihenstephan was of interest, the only downside being the physics and engineering theme of the course. Or as Matthias puts it “Everything I didn’t like at school”. The first year of the Weihenstephan course was almost exclusively mechanical and chemical engineering. Rather like chemical and process engineering at Heriott-Watt and Module 3 of the IBD Diploma in Brewing, this sorted the wheat from the chaff and saw half of Matthias’ classmates decide their future would involve drinking rather than making beer.

The engineering emphasis on the Weihenstephan course means that as many graduates tend to end up working for equipment suppliers as progress into brewing operations. Of those who graduated with Matthias, more are now designing breweries and packaging lines than are designing beers. During his studies Matthias also worked at Brauerei Aldersbach in Bavaria.

Matthias’ decision to pursue a brewing career in England was made for him by his wife who is from Leeds. They met at university in Munich but she was seemingly homesick for a decent cuppa and the opinions of Geoffrey Boycott, so they moved back to England.

The current Mad Squirrel brewery was installed in 2017 and was made by American Beer Equipment. It is a semi-automated 30hL brewhouse comprising an MCV, lauter tun, kettle and whirlpool. Water comes from a borehole deep in the chalk deposits of

the Chiltern Hills and hence is very high in bicarbonates, so alkalinity is adjusted by acid addition.

All malt is supplied by Crisp and is mashed isothermally for ales and with a three-step (62°C - 72°C - 78°C) temperature programmed mash for lagers. All yeast is supplied dried with W34/70 used for lagers and the East Coast IPA strain used for ales. The yeast is cropped and repitched up to five generations for lagers and ten for ales.

Typically for modern craft breweries, liquids and SKUs are numerous – ranging from Pilsner to milk stout in cask, can, bottle and keg. Mad Squirrel’s biggest-selling brand is \$umo an American pale ale at 4.7% ABV and 34 IBU. Close on its heels is its new (and I think superb) Native Helles which is 5% ABV and 18 IBU.

The table sets out a full list of regular brands. And because there are only 10 regular beers, there are of course always several seasonal offerings available!

All lagers have a 42-day cold maturation, with tanks spunded\* to preserve as much of the natural carbonation and protection against staling in the form of SO<sub>2</sub>.

All beers are supplied unfiltered and some of the cask beers are fined. Beer is canned on an ABE linear four-head canning line and keging and cask racking undertaken manually and direct from tank.

The plan for the business is to continue with the current strategy pushing for growth.

*\*Spunding is a process often used by lager brewers to naturally carbonate a beer. A device called a spunding valve is used to adjust and release pressure on a pressure-capable fermenter such as a Unitank.*



**Matthias Seidl in the brewhouse**



**The Mad Squirrel cellar**

Beer Name	Bitterness Units (BU)	ABV (%)
Zealous Pilsner	34	4.4
\$umo American Pale Ale	34	4.7
Hopfest Pale Ale	27	3.8
London Porter	27	5
Dela Crème Mild Stout	25	4.5
Roadkill New England IPA	36	6.5
Illuminate Red Ale	26	4.5
Big Sea East Coast IPA	33	5.5
Mr. Squirrel Premium Bitter	32	4
Native Munich Helles	18	5

**Mad Squirrel brands**

**Utopian Brewing and Jeremy Swainson**

Utopian is a new brewery. And I mean new. At only six months old, some breweries have stock older than their equipment! Utopian is different to a lot of start-ups in that it has a brand-new 35hL semi-automated brewhouse, 7kL annual fermentation and maturation capacity –



Mad Squirrel's biggest-selling brand is \$umo – an American pale ale at 4.7% ABV and 34 IBU

and flooring so posh it costs more than most brewhouses under 50hL. It has also set out to brew only lagers.

Another element which sets Utopian apart from your average new brewery is the head brewer being a Doemens Academy-qualified brewmaster.

As his name suggests Jeremy Swainson is not a 5<sup>th</sup> generation Bavarian but is originally from Canada. He developed a love for German beer while on a one-year exchange programme in Germany, so after school he enrolled on the German brewing and malting apprenticeship working at Boltzen Brauerei in Korschenbroich.

German brewing apprenticeships are three years in length, are based at one or more breweries and involve full-time employment at the brewer(y)ies with three months of classroom brewing study per year. In Jeremy's case at Fritz Henßler college in Dortmund.

Over the course of the German brewing apprenticeship, the student experiences each area of brewing operations – from brewhouse to packaging as well as maltings and laboratory exposure – with practical and written exams covering each element of training. At the end of the apprenticeship he/she is given the title 'Brewer' and

can find employment as an operator-level brewer or maltster.

After completing his apprenticeship, Jeremy completed the Master of Brewing and Malting course at Doemens Academy in Munich. He then left Germany for the delights of Enfield and AB InBev's Camden Town Brewery where he was Brewing Manager and worked on the team that commissioned and implemented the new Krones Steineker brewery.

He chose England for a career because although he would have been assured a sound career path in Germany,



The Utopian kettle



The Utopian set-up

the pace of growth in number of breweries is far slower and it would be decades before he could be in control of a brewery or its beer.

The UK offered an opportunity to have greater influence sooner – and you don't get any more influence than starting up a brand-new brewery and designing each beer from scratch.

The Utopian Brewery is on a farm specialising in Ruby Red Devon cows near the hamlet of Bow which is about six miles outside Exeter. In recognition of the beautiful location of the brewery Utopian has set out to brew according to sustainable but commercially sensible principles.

A key part of that sustainability is limiting the food miles of its beers. This means that Jeremy was set the challenge of making excellent lager without access to continental malt and noble European hops. One slight compromise is the Froberg-type lager yeast from NCYC which is pitched vessel-to-vessel for up to eight generations. That said, I'm not sure it's possible to give micro-organisms nationalities (unless you can clearly identify their lederhosen under the microscope).

Malt is supplied by Bairds and Jeremy uses dextrin malt, which is produced to be under-modified, along with the company's standard lager malt. This is designed to mimic the less-well modified malt typical in Germany.

Although the brewery has access to water from a borehole it has opted to use municipal supply. The borehole water is too hard for brewing and would require RO treatment to be suitable. The energy consumed and wastewater produced would not fit well within the sustainable model – and the municipal water is as soft as kitten fur.

Jeremy uses two mashing regimes. For his British Lager which is based on the German Helles style, he uses a two-step temperature programmed mash with stands at 63°C and 72°C. For his Pilsner which is more in the Czech style he uses an exotic programme/ decoction mash, or perhaps *procoction* (someone should trademark that term now, before it really takes off).

The mash starts in the same way as the Helles with a temperature-programmed mash heated in the MCV from 63°C to 72°C, but for the final temperature raise a third of the mash is pumped to the kettle and boiled for 10 minutes before being returned to the MCV.

Using English hops to produce beer which evolved around the use of classic European varieties like Mittelfruh and Saaz would probably be top of the list of concerns most brewers would have about Utopian's *lager meets sustainability* approach.

Jeremy argues that when used correctly, hops like Goldings and

Fuggles can be used to make comparable beers to those found in the beer halls of Bavaria, while retaining a unique English character. Especially for a lightly-hopped style like Helles, where hops take a back seat to the clean malt profile and bitterness is restrained. For the Lager he uses Whitbread Golding Variety and East Kent Goldings and for the Pilsner, generous amounts of the modern variety Jester.

Fermentation is undertaken at 8-9°C and as at Mad Squirrel 1 bar top pressure is maintained at the end to retain natural carbonation. At the end of fermentation, beers are transferred to dish-bottomed cylindrical conditioning tanks and after a VDK rest at 5°C, chilled to -5°C for the 21-day lagering. 20% of production is sold unfiltered and for the remainder filtration is via two lenticular filters. Beers are currently kegged in-house on a Malek Twin II 1- RF kegger.

So far, it's so good for Utopian. The brewery is so busy Jeremy has already recruited another German-trained brewer to work alongside him. The Great British drinking public seemed to have wholeheartedly embraced the concept of a British lager.

### The German-trained brewer's view

Both Jeremy and Matthias have been brewing in the UK for nearly four years. Their experience in the UK is very much

At the end of fermentation Utopia's beers are transferred to dish bottomed cylindrical conditioning tanks and after a VDK rest at 5°C, chilled to -5°C for the 21-day lagering.



Jeremy posing for the obligatory “Can you pretend to be stirring it?” brewery action photo

the new/modern/craft end of our richly diverse brewing industry – but having experience on both sides of the channel gives them an insight into the differences that exist. The following areas are those they felt were most significant.

**Brewer development**

The German brewer education system places a heavier emphasis on the application of brewing knowledge and science. Even the more academically-weighted Weihenstephan course features a nine-month internship at a brewery.

Both brewers more than raised their eyebrows when they learned of the level of practical knowledge held by graduates of Heriott-Watt entering the job market. In Germany, technical decision-makers in breweries tend to measure experience in decades rather than years.

Perhaps the German system is more akin to graduates already employed in the brewing industry studying for the IBD Diploma. What is extremely rare in Germany is the ‘Head Brewer’ who was a barista or IT professional last week. Career progression in Germany is also slower with the ‘fast-track’ to the top being about 20 years!

**What a brewery is**

It may be that because both Jeremy and Matthias are at the smaller end of the UK brewing industry they note that there is a significant difference in what consti-

tutes an average brewery. Matthias said in Germany there are very few brewing operations working on 10hL manual breweries in a business unit – whereas in the UK they are prevalent.

It would be fair to say that if he had come to the UK in 2002 he may have found no difference. In Germany an average brewery tends to produce 100-200khl per year and have a fully automated brewhouse, cellar and high-spec packaging lines. Jeremy commented that even small pub or village breweries with 20hL brewhouses have well-designed equipment from suppliers like Kasper Schultz and a brewer who has passed an apprenticeship at the helm.

In the average brewery all staff operating on the brewing side would have at least passed the brewing apprenticeship with several of the team having brewing degrees. Perhaps when the transatlantic tsunami of craft finally breaks over Germany this disparity will be removed

**The use of additives**

Having been trained in the land of the Reinheitsgebot it is small wonder that both brewers have found the Brits a great deal more liberal with process aids. The use of de-glutenising enzymes seemed to be a particular cause of consternation. Even with the shackles of the Reinheitsgebot removed Matthias and Jeremy seem to view all process aids with caution.

The question in their minds seems to be one of: “Why do I need to add this? Is there really a benefit?” This is seldom the case with British brewers. This conservative approach to process changes and additions seems to be another significant difference. In Germany, because everyone is trained in the same way, most brewers tend to accept there is a correct way to do things.

In the UK most brewers accept there is a correct way, it’s just that everyone tends to disagree about what that way actually is. And in the craft brewing movement, the correct way is often researched from blog posts or books on beers styles written by US home brewers.

Neither brewer saw the less conservative attitude of British brewers as a negative. And in fact, the ability to innovate was one of the main factors behind Jeremy’s decision to move to the UK.

**The control of oxygen**

The final observation from Matthias was about the British brewer’s relaxed attitude to oxygen throughout the process, particularly in the brewhouse. He jokes that the English translation of the German word for oxidisation is flavour. In Germany, processes are engineered and managed to ensure oxygen is excluded from all stages apart from wort oxygenation.

Matthias has modified his brewhouse so that he can purge oxygen out of the system to minimise hot side pickup and measures and manages-down oxygen at all other stages. He was concerned especially when making cask beer that his zero-tolerance approach may remove some of the oxygen-derived flavour valued by drinkers in the pub. Mad Squirrel sales data tend to suggest otherwise.



**Utopian British Lager (please note consumption does not turn you blue)**