

# Carlsberg™ and Kegspertise Keg Case Study



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Andy Dorr  
Managing Director and Founder  
Kegspertise

## United Kingdom

### Carlsberg™ UK and Kegspertise Optimise Keg & Cask Lifecycle with RFID. UHF Technology from HID Global Keeps Keg Fleet Flowing for Carlsberg.

A wholly owned subsidiary of the world’s fourth largest brewer, Carlsberg UK brews over 1 billion pints of beer annually. Driven by “Thirst for Great” – a shared passion to continuously raise the bar and do better – Carlsberg believes that, in addition to quality products, a winning route to market is about understanding profit drivers by channel and geography, and integrating this insight into business planning.

This is why Carlsberg is the only national brewer in the UK with its own distribution network, transporting kegged and bottled beverages from two main breweries in Northampton and Leeds to 16 distribution sites serving 15,000 pub, restaurant and retail customers across England, Scotland and Wales.

Kegspertise Keg & Cask Optimisation assists Carlsberg UK in paving their winning route to market. Kegspertise tracking and reporting solutions aim to optimize beverage container and fleet management for the brewing industry, enhancing the bottom line for brewers and those in the brewing supply chain.

HID Global is a worldwide leader in UHF RFID technology, which is emerging as the most efficient and effective solution for tagging and tracking kegs and casks. By tapping HID products, solutions and expertise, Kegspertise is helping redefine the potential of container management for Carlsberg.

### Challenges

Kege and casks have been essential to the brewing industry for as long as long as ale has been produced. Carlsberg UK owns and maintains a fleet of hundreds of thousands of kegs, used for storing and distributing over 100 brands of lager, ale and cider. With new kegs costing \$100 to \$125 each (£60 to £75), this represents a significant investment.

The average keg is built to deliver 20 to 40 years of service, notwithstanding harsh treatment – from filling, to distribution, to stacking in inventory, to dispensing at the local pub, collection and return to the brewery, through rigorous cleansing and sterilization, then back to the fill line to start again. Rough handling and temperature extremes during each fill-to-fill cycle can result in keg damage, and damaged kegs deliver inferior product. In addition, keg populations are subject to theft – and stolen kegs can deliver no product at all.

Neil Harrison, head of primary logistics at Carlsberg UK, is responsible for getting finished product to market, which includes ensuring a steady stream of returnable containers are available to meet production, while ample product is in the field to fulfill demand. “Management of the container population has a profound impact on all brewery activities and requires input from the key areas of finance, quality, planning as well as packaging,” said Harrison. “However, critical decisions must be made on a daily basis by making assumptions derived from limited samples, and extrapolated over the larger population.”



### Challenges (continued)

Despite increasing investment in container fleets, most breweries still manage their fleet population using traditional manual processes. Individuals are dispatched into warehouses and yards with pencils and paper to manually audit keg fleets and assess conditions. This hand-count method enables the sampling of a mere 0.5 percent of the container population, and is prone to errors in recording and transcription.

More recently, Carlsberg UK and Kegspertise tested the use of barcodes to identify each keg, readable in line-of-sight with handheld scanners. Faster and more accurate than manual counts, barcoding enabled them to increase sampling to approximately 5 percent of their keg population. However, even with larger sample sizes, there were often significant discrepancies between reported inventories and what was actually in the field. What's more, the barcode system still proved labor-intensive, requiring the dispatch of numerous personnel armed with visual scanners into warehouse yards, exposed widely fluctuating year-round weather conditions. Further, barcode labels were rendered unreadable after just a few passes through the cleaning, sterilization and other rigors of the fill-to-fill cycle.

"We don't treat kegs with much respect in the UK," said Andy Dorr, managing director and founder of Kegspertise, and Chairman of Keg & Cask committee of the Brewing, Food & Beverage Industry Suppliers Association the UK. "Each keg is filled and emptied hundreds of times, while in between it is bounced from brewery, to trolley, to truck, to warehouse; stacked and restacked; exposed to every imaginable weather condition, not to mention a cleaning and sterilization process that approaches 200° F (90 C°). Still, each keg is expected to last 20 to 40 years."

### Solutions

Carlsberg UK's introduction of Somersby Cold Filtered Cider coincided with Kegspertise's recommendation to consider UHF tags and readers, and provided the perfect opportunity to test system capabilities. In addition to durability, UHF transponders were required that can deliver reliable readability when surrounded by metal industrial fixtures and equipment, not to mention the metal kegs themselves.

Kegspertise recruited the industrial logistics expertise of HID Global. HID proposed UHF tagging solutions that would prove as tough as the kegs themselves, and that promised to significantly improve data collection speed and accuracy for Carlsberg UK.

"We tried and tested many tags from many companies," remarked Dorr. "The appropriately-named HID Global Keg Tag proved stout where other tags fizzled out."

HID Global Keg Tag transponders demonstrated near 100 percent readability, no matter what was thrown at them. A unique HID Keg Tag transponder was securely welded onto each of the 45,000 new kegs in the Somersby fleet.

## Results

UHF technology from HID mixed with Kegspertise data management capabilities serves Carlsberg UK with comprehensive, real time reporting. “We have the status and location of virtually every keg in the Somersby Cider fleet at our fingertips,” said Harrison. “Data reporting depth, quality and immediacy are yielding unprecedented insight into potential areas for cost-savings and operational improvements.”

Marie Glotz, vice president of sales for HID Global Industry & Logistics, advised, “To track containers within the walls of the production facility, a number of high frequency or low frequency RFID alternatives from our portfolio could have proven effective. However, considering the vast majority of the keg population is away from the brewery – in transport, in storage, and on customer sites – UHF is the only solution that could reliably and accurately track the entire fleet and their contents.”

Even with up to 80 percent of the Somersby fleet away from the brewery at any given time, Carlsberg UK tracks each cider keg through the supply chain at every stage of the fill-to-fill cycle. The production team can ensure available containers meet fill requirements, and inventories can supply demand. Finance can better manage fleet ROI, using precise population totals and loss counts to substantiate keg maintenance and replacement investment. Marketing can more effectively monitor product flow and identify trends.

The UHF-based system streamlines compliance with customs and excise rules that require separate populations of kegs for cider and for beer. More accurate measurement of residual cider in returned containers optimizes tax reclaims, amounting to millions of dollars in annual recoupment.

Carlsberg UK deployed these enhanced capabilities with negligible disruption to established keg handling and distribution processes. Brewery employees execute their duties as they did prior to system deployment, while strategically placed UHF readers track and report on every container.

For example, trucks loaded with Somersby Cider kegs roll through security checkpoints when leaving the brewing facility and when arriving at key points of distribution. However, today each truck passes through reader portals where anti-collision technology in HID Keg Tag transponders allows simultaneous identification of the up to 672 kegs on a single truckload. To the dockworkers, truck drivers and checkpoint guards, it's business as usual, while management has an accurate accounting of each keg in the fleet.

“The biggest hurdle to adopting the UHF tracking system was upfront costs, which can be significantly higher than traditional methods,” admitted Harrison. “But we have realized huge savings in fleet management costs. Plus the data reporting from fill-to-fill is real time and exceptional.”

“With the quality of the results to our cider operation, it didn't take us long to begin tagging each new keg as they come in. We've already tagged an additional 35,000 beer kegs, and are investigating extending the program across other container types.”