

Unravelling the 'cellar

Exploring the dispense options now available to the licensed trade

The beer orders of 1990 led to the fragmentation of the large vertically integrated UK brewing companies. These changes have seen the emergence of new companies set up to serve the licensed trade. What was previously called 'cellar service' or 'brands dispense' has become increasingly complex.

By **Paul Buttrick**
Beer Dimensions

Before the beer orders, a Whitbread account in the tied or free trade would have installation and servicing supplied by the 'Cellar Service' department of that company – a seemingly simple relationship, with the service element included in the beer price and the equipment owned by the brewery. Nowadays, we have global brewing companies as brand owners, smaller independent companies that still have a vertically integrated structure, the pub companies and finally, other independent accounts (clubs, restaurants and many free trade pubs etc).

With freedom to buy beer from different suppliers, an account owner could have any number of different companies to contact for service. How complicated could it be if you sell Carling lager from Coors, Stella Artois from Inbev, John Smiths from S&N, then add in some cask beers from the local micro breweries? Even more confusing, the supply and servicing of one company's brands by another is growing, so even if you know the 'brand owner' of a particular beer, they may not be responsible for servicing and replacing the equipment.

A few simple phone numbers has grown to a veritable phone book with a decision tree to follow depending what sort of problem arises and with which brand.

The issues of equipment ownership, installation and repair responsibility and solving quality problems have become difficult to answer.

So what has changed?

Cellar Service Provider companies

There are about 150,000 licensed outlets in the



(Photo: Innserve)

A significant change to the way cellar service is delivered was the formation of Innserve from the combined Carlsberg UK and Scottish & Newcastle teams in 2003. There were two aspects, one was the formation of an organisation called Service Dispense Equipment (SDE) which acts as a holding company for cellar equipment, the second was the formation of Innserve as an independent service provider for the trade.

The company developed from being a straight-forward brewery cellar service business, to having a range of direct customers including brand owners, regional brewers and retail customers, providing a full range of services, including: installations, technical support via service call centres and technicians, training, ownership of equipment, innovation and development. Innserve call this a 'one-stop-shop' approach. Over eighty thousand accounts are serviced, with 630,000 lines, approximately half of the market, involving 70,000 installations a year. They employ about 300 in-house technicians, and have access to 34 service providers and 400 additional technicians. As part of this 'one stop shop' concept, Innserve provide the BOC national gas installation and maintenance service through the recent purchase of Inndispensable and also set up a national refrigeration service in August 2007.

UK, with approx 1.5 million beverage lines. Many brewing companies and brand owners still have their own departments. The large 'pub companies' look to the servicing companies for their support. Sizes range from individuals doing simple installations and breakdown call outs to organisations that offer a comprehensive service on a national scale.



(Photo: City Dispense Services)

Central stores at City Dispense in St Helens holding £1.5 million of stock.

service' knot



City Dispense Services Heineken-branded service van.

City Dispense Services (CDS) is another big player with national coverage since 2002. CDS employs all its own technicians directly (over 200), is not aligned to one particular brewing group and offers a varied service based on its customers' needs. CDS focuses attention on it being the expert in glycol cooling systems, having installed over 2000 units in 2007 and believes it has put in over 60% of all glycol installations in the UK. CDS provide three types of service to its various customers:

- A dedicated service, working exclusively with an individual brewer and their sales teams to carry out a full range of activities on their behalf. These teams work from branded brewery vans and wear branded uniforms; currently, there are partnerships with Heineken and Budweiser.
- A single service provision (SSP) is similar to the 'one-stop-shop' envisaged by Innserve. In this arrangement, a 'pub company' should be able to reduce

overall cost by having one company handle all its cellar service provision. The teams involved cover everything from installations to service and are able to look after both beer and soft drink installations.

- A generic service and installation team. This team deals with installations and general services for brewers and the free trade.

Both national companies run call centres with a comprehensive monitoring of service levels and issues that arise. Call centre advisors are trained in diagnostics to reduce the number of call-outs by solving problems over the phone, without the need to send a technician, or redirect calls to the relevant service provider. Innserve say that call-outs have been reduced by over 12% by taking this approach, a real win-win for all parties.

Both Total Cellar Systems Ltd (TCS), who directly employ 300 people from a head office in Preston Lancashire, and DJ's Refrigeration with a head office in Cwmbran South Wales, have national networks servicing the drinks industry. Both companies are fully independent and are active in complementary activities, TCS in manufacturing and refurbishing dispense equipment, and DJ's specialize in air-conditioning and refrigeration. Both companies are active in the provision of drinks dispense at major events such as horse racing meetings and festivals such as Glastonbury Music Festival where literally millions of pints are dispensed through equipment supplied by TCS over the three day festival.

An increasingly important task taken on by

service companies is planned maintenance and auditing of equipment so that customers can be sure they are adhering to relevant legislation and codes of practice.

'Unbundling'

'Unbundling' is an often-used 'buzz' word of the moment in trade dispense. It has been described to me as 'simply a means of identifying the cost of various support operations that traditionally were included in the beer price e.g. cellar service and logistics. Once these costs are known, options can be explored!'

The concept stemmed from the formation of independent retail chains. The questions of who owns what and how it would be serviced arose. On one hand people would say that the brewers who supply the beer should also supply the equipment and rectify any problems as well. A service element is included in the price paid for the beer.

An opposite view is that retailers would either want to have total control over equipment in their own outlets or at least have the benefits of all of their brands being serviced by a single service provider. In order to fund this, they expect to pay less for their beer. Pub group Mitchells and Butlers have been at the forefront of this in their business model. Retailers will have to work out if there is a business benefit in owning and controlling different parts of their operation. I have the feeling that although people are talking about 'unbundling', not many are actually doing it. It may be that the available service offers do not yet cover enough scope to make it more compelling; cooling systems, refrigeration and air conditioning for example are not often included, although some companies are beginning to offer these. What is clear, is there are significant costs to be saved if a single service visit can attend to a range of equipment, compared to a number of individuals from different companies servicing similar equipment as still often happens.

I am sure someone is developing a sophisticated spreadsheet which is able to calculate the financial aspects of unbundling and at what point it becomes beneficial.

BDA, BBPA and BFBi

When talking to service providers, brewers and equipment suppliers, the BDA (Brands Dispense Association), BBPA (British Beer and Pubs Association) and BFBi (Brewing Food & Beverage Industry Suppliers Association) were frequently mentioned. Their combined expertise is helping the industry become more organised, technically competent and professional. What are their roles, and what do they do?

The BBPA works formally on behalf of the industry and acts as its voice in response to legislation and government initiatives. Topics involving dispense go through the BBPA



Innserve's customer service centre at Tadcaster.

Industry Dispense Forum, which works closely with the BDA and BFBi. Items are assessed on how they can be best technically and practically approached. The BDA was set up in 1993 with what was known as the 'Five Brewers Initiative'; this was an agreement between the major brewing companies to use each other's equipment when an account or company changed beer suppliers. It meant that the wasteful practice of ripping out other brewer's equipment and replacing with what could be similar kit was avoided. It was in effect an attempt to standardise equipment 'below the bar' and in the cellar.

The BDA has a steering group currently chaired by Alan Woodward (Inbev), a technical committee chaired by Iain Ramage (also Inbev) and an Administration Committee chaired by Paul Noonan (of Constellation Europe). The BFBi, which represents the manufacturers and service providers was founded in 1907, also has a dispense committee chaired by Brian Bunting, also a member of the BDA technical committee, and draws on the technical experience and expertise of BFBi dispense company members. The BFBi also holds the installation manual, brand matrix (cellar specifications) and test procedures for the industry on behalf of the BDA. A good example of how the organisations work together on behalf of the industry, was the Code of Practice for cellar gas systems. The BBPA played a key role in that after discussions with the BDA and BFBi to produce an appropriate and workable method of applying the Code of Practice, final approval was agreed with the Health and Safety Executive by the BBPA on behalf of the industry.

Also being looked at by the BDA technical committee are the aspects of achieving lower-temperature dispense including python and cooler design – and coolant liquids that enable the continued use of the thousands of ice bank coolers that are already in use around the country.

A very positive initiative taken by the BFBi within the industry involves training and accreditation of cellar service technicians. There is no formal career path identified for people working in the dispense industry, so the BFBi is in the process of setting up an apprenticeship scheme based on VRQ level 2 accredited qualifications (by the BIIAB) which will eventually lead on to NVQ qualifications. This initiative aims to provide recognisably competent people working in the industry to best known operational and safety practices.

In 2006 I visited AVS Television (*The Brewer & Distiller* November 2006) and saw established multimedia training ideas for the licensed trade based on what was called 'the virtual pub'. Even though the idea has yet to catch on, I still think it is a progressive way of getting training and information to a large and



Photo by AVS Television

Using multimedia techniques for training, a 3D graphic from AVS Television's 'virtual pub'.

disparate group of people who are in need of basic information, training and recognised qualifications.

The trend towards colder beer

The trend towards colder beer is well established, and the number of fonts popping up as standard and chill versions of the same brand is proliferating. The chilled variant on lagers poured at 3°C instead of 6°C is gaining ascendancy and the same is happening with ales – once served at 11–14°C, then 9°C and now with chilled versions below 6°C. Lager temperatures in the UK are only following what are considered standard in the rest of the world and the ale temperatures are being lowered to attract repertoire drinkers (a marketing term for consumers who drink different beer styles on different occasions) on to ales. The culmination of this is that the current lager standard will disappear, to be replaced by what is now termed extra cold at 3°C. I am not sure what temperature the ale 'norm' will be, but the temperature choice will probably disappear. The effect of temperature on taste and appreciation of a beer will determine the final pouring temperature, as I believe there is an ideal temperature for any

drink where most satisfaction is attained. There are not many brands served at or below 0°C, maybe this is too cold for the average stomach to handle, or maybe that the technology is not yet widely available.

Options for delivering extra-cold beer

This is a good opportunity to explain the options available for serving extra-cold beer. The standard ice bank or in-line cooler was originally designed to take beer from a normal 12°C cellar temperature to 6–8°C at the tap. Under-bar coolers and cooling 'pods' have evolved, in which beer can be cooled to give a consistent pour at 2°C.

A cooling 'pod' is a small under-bar heat exchanger which cools beer from a standard cooled cellar to produce extra-cold beer by trimming the temperature by about 3°C. This was a simple cost-effective solution when extra-cold beer was first introduced, but as more brands and taps are added, the 'pod' heat exchangers take up valuable under-bar space, and put more load on existing cooling capacity. A more effective option than the standard flash cooler is to look at the new design of under-bar coolers such as the 'Eric' from Brewfitt. The Eric is a compact cooler (it takes up only half the bar space of a conventional cooler) which is able to produce extra-cold beer more consistently than a 'pod'. It has no ice bank, agitators or fans, and uses a suppressed cooling medium to give superior heat transfer. Each unit is capable of supplying two taps and has the advantage of not pumping heat and noise into the room.

Cellar based coolers

Glycol cooling

The proliferation of brands and taps has led to cellar-based solutions being preferred to under-bar units in many accounts. Glycol cooling has become widely used and was the first option to deliver extra-cold beer



(Photo: Brewfitt)

Brewfitt's 'Eric' – a new generation of under-bar cooling for extra cold beer (right). Notice its size compared to the conventional under-bar unit.

remotely, thereby doing away with the secondary under-bar cooling. Glycol coolers provide a consistent reliable supply of extra-cold beer, but do cost more to buy and have the disadvantages of needing large compressor capacity to support peak demand because there is no reservoir of frozen cooling medium. Glycol units, however, need only to run when beer is being served and their recovery time is much shorter because they do not need to re-build a 25 kg ice bank. However, energy control systems for other cellar-based cooling methods are also being developed and applied. Glycol cooling has been the choice for all recent major event and sports venues, because they can provide large volumes of extra-cold beer at high take-off rates. The high capital cost and specialist support needed for glycol coolers has driven the development of 'coil and foil' and coolant suppressant systems which use existing equipment.

'Coil and Foil' – a new python configuration
This is a BDA 'approved' and hence tradable set up using a standard ice bank cooler. Longer coils are used in the ice bank cooler and there are restrictions on the number of beer lines in the python. This enables lower dispense temperatures of 2–4°C to be achieved. Thicker insulation and a foil on the

python lagging is also necessary to achieve the lower dispense temperatures. This type of installation can only be done on new installations or major refurbishments but avoids the need for new glycol coolers in the cellar or flash/pod coolers under the bar.

Ice bank cooler with coolant suppressant
Whilst 'coil and foil' delivers extra cold beer remotely, the fact that the cooling medium (water/ice) is only at 0°C rather than the colder -2°C temperatures of glycol coolers means that longer coils are required and



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therefore less lines can be cooled per remote cooler. To overcome this, a further development includes an original ice bank cooler with a few minor modifications, and the addition of a liquid cooling suppressant (similar to adding anti-freeze to a car radiator) Extra-cold beer dispense is made possible by reducing the ice bank bath temperature from 0°C to -2°C. The cooling suppressant comes in the form of a concentrated liquid (Inncool – supplied by Innserve) or a pre-mixed liquid (2Flow – supplied by Brewfitt) which is added to the ice bank cooler. The liquids which are formulated to be stable, non corrosive and easily/safely handled, are currently undergoing extensive testing by the BDA.

Both liquids can be formulated to have different freezing points, for example, Brewfitt, the suppliers of 2Flow also have solutions that are capable of reducing ice bank temperatures to lower temperatures (eg 5Flow is used at temperatures of -5°C) The advantages of the coolant suppressant options are that a reservoir of cooling medium is able to provide consistently extra cold beer for extended serving periods, and that the thousands of ice bank coolers already out in the trade can be economically modified to give extra cold beer,

New fonts and taps

A number of tap developments were made a few years ago designed to improve consistency of pour and improved head and lacing. The HIT tap introduced by S&N and a vortex tap by Carlsberg are well known. Latest developments focus on consumer visual appeal in the form of condensing and ice covered fonts and the ability to actually get a beer during half-time at a concert or sporting event by super-fast dispense.

Condensing and ice fonts

In the UK, condensing fonts project an image of extra-cold beer, whilst ice fonts are rare because of high energy demand and a less appealing look as the ice gets older.



The internals of a Monroe condensing T bar. Notice the lagging and LED back-light system in this new development by DDg.

Condensing fonts and T bars have been developed by a number of suppliers, which have good visual appeal, and include LEDs to light up the branding – gone are the days of changing the bulb!

Superfast pouring for major events

The last couple of years has seen the building of state-of-the-art stadia and concert venues. Serving thousands of people in a 15-minute interval has been a real challenge. Taking football as an example, the key to success is the ability to pour beer as quickly as possible at the correct temperature in the right quantity, and produces quite mind-boggling statistics when compared to the local pub. The new Wembley Stadium installation,

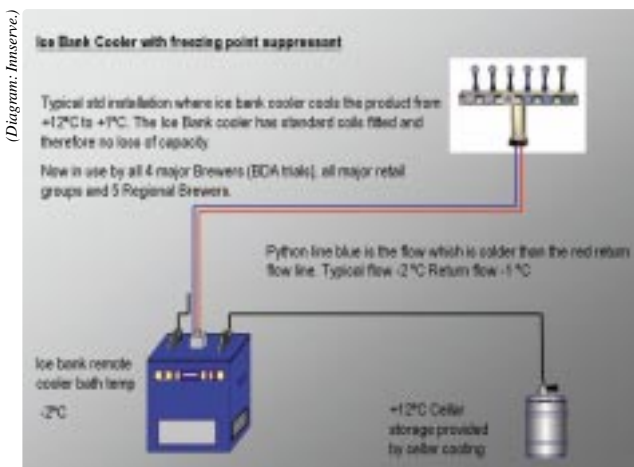
completed by City Dispense Services in 2007 was designed to pour 37,000 pints in 14 minutes. To do this, there are 28 cellars, serving 55 bars, which have 132 multi-pour dispensers and 52 four-head T bars. Lancer glycol extra-cold units feed approximately six miles of beer python to reach the dispense heads!

At Arsenal's Emirates stadium –beer is delivered to eight 2°C cold cellar keg rooms three days before a match, when an estimated 32,000 pints can be dispensed in a 15-minute

half-time interval. This is equivalent to serving one pint to 50% of a capacity crowd compared to most stadiums which serve a maximum of 15%. IMI-Cornelius supplied eight sub-zero glycol cooling pumping stations and fifty 'CryoCool' secondary coolers feeding approx 3km of sub-zero pythons. The Cornelius UltraFlow dispense head uses turbine technology and push-button control to serve precise fixed measures of beer at 5–6 seconds per pint, compared to 12–15 seconds for a standard tap. A four-head unit has a glass fill time of six seconds and can be configured to serve four different beers. At the Emirates, there are 65 Ultraflow four-head dispense stations, and 128 single dispense stations.

At Chelsea's Stamford Bridge (Heineken) and Sheffield United's Bramall Lane grounds (Fosters), lager is poured using an ExacTap developed by Niagara Technologies in the USA and supplied by Drinks Dispense Group (DDg). This tap also uses push-button control for fixed measures and delivers a pint at 2°C in approx three seconds. The principal for this fast rate of pour was described as being similar to a long tube bottle filler. Incidentally, the technical servicing at Chelsea FC is carried out by City Dispense Services by a dedicated Heineken branded team.

Research and Development work
R&D is mostly carried out by equipment manufacturers and service providers in conjunction with the brewers, who still provide ideas and concepts, but no longer



Schematic for remote ice bank cooler using a coolant suppressant.



The Exac Tap pours a pint of Fosters in 2.5seconds at Sheffield United's football ground.

have the dedicated technical centres they once had. For example, City Dispense Services have installed a complete glycol-based system in a 'Pub of the Future' which will provide the cellar, beer dispense and back-bar cooling whilst reducing the carbon footprint, energy usage and overall service calls at the same time. Innserve have an engineering and testing facility where energy measuring and saving devices are being developed. The effectiveness of different fonts and cellar cooling systems are also being tested. Work is not only for Innserve, but for direct customers who wish to gain independent results to support their technical decision making. Other companies, like IMI-Cornelius also have their own development facilities.



The large glycol cooler and compressor which is central to City Dispense Services' 'Pub of the Future'.

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(Photo: BRI.)



The test cellar at BRI – it must be a quiet pub as it is so clean and tidy!

BRI

BRI is not a name that is normally associated with dispense topics, but it has been developing a growing reputation within this area over the last five years. BRI currently operates a unique service based on an ability to artificially age and microbiologically contaminate dispense equipment which can then be installed within a full-size cellar and bar, affectionately referred to as 'the BRI pub'. Work is led by Head of Microbiology, Stephen Livens and Senior Microbiologist Karin Pawlowsky, to assess new and existing

concepts in order to improve dispense hygiene standards in the on-trade.

BRI has carried out a number of evaluations for individual customers, looking at line cleaning and the development and removal of biofilms using both established and novel technologies. One such development in line cleaning was introduced by Stephen Livens at the recent Cellar to Seller conference in Manchester (October 2007). His presentation, in conjunction with Activated Water Technologies Ltd, described the use of an activated water-based detergent from softened

water and brine (salt) which, when ionized, produces good sterilant and detergent properties. This innovative cleaning agent exhibited excellent biofilm removal qualities, removes the need to handle caustic based cleaning fluids, and is taint free for the beer.

Cask Beer and gas-driven pumps

No article on dispense in a British-based journal would be complete without a reference to cask beer! Cask beer sales are still declining, the reasons are not for discussion here. What is not in dispute is that inconsistent quality is partly to blame. Variable temperatures, e.g. warm 'first offs', and losses during line cleaning can be overcome by replacing traditional half-pint beer engines pulling on half-inch beer hose by three eighth-inch lines with quarter-pint or 'cylinderless' beer engines fed by a gas-driven beer pump. With python-cooled lines right up to the tap, the problem of warm 'first offs' is overcome and line losses are reduced by approx 45% due to the smaller-bore pipe. The most widely used gas pump is probably the Stanwell Flowjet. A recent beer engine development has been for Greene King by Drinks Dispense Group (DDg) using the quarter-pint Musketeer cylinder and innovative spout tap designed to give a 'southern' flat, or creamy 'northern' presentation on St Edmunds cask beer.

Gas pumps are also used for keg beer and allow smaller-bore beer pipe and lower top pressures to be used. This results in less gas adsorption and fobbing on dispense particularly on emptying kegs and those on tap for long periods. Stanwell Technic Ltd, based in Yorkshire, who supply the Flojet, are also developing a gas recovery systems to extract excess CO₂ from empty beer kegs.

So to the future

Looking to the future, the trends as I see them are:

- In terms of servicing of accounts, the 'one-stop-shop' approach will continue to grow, with more equipment covered by a single service company. Air conditioning and refrigeration and other equipment will be included. More companies may enter the arena, but with the number of accounts reducing, it is more likely that 'alliances' of current suppliers will be made to provide what is required.
- Unbundling will become more common as the 'one stop shop' covers a wider scope. As to who owns the equipment? This will be driven by financial considerations with either the brand owners or service providers owning the equipment.
- If given 'approval' by the BDA, coolant suppressants will become widely used on cellar-based equipment. Under-bar cooling will become less common, but will still be appropriate in many, probably smaller accounts.



New quarter-pint Musketeer beer engines for Greene King's new St Edmunds cask ale in final testing at DDg.

- The downward trend in cask beer sales will only be reversed if quality and yields improve, this means that the use of gas pumps and cooled smaller-bore tube will increase. The ownership of beer dispense equipment for cask brewers and microbrewers has already been raised, it could be said the dispense costs on many cask beers (e.g. from micro-brewers) are already 'unbundled'.
- Energy and efficiency on all aspects of serving the industry will become ever more high focus.
- Beer serving temperatures will become more standardised – probably at 3°C for lagers.
- There will be continued innovation on the visual aspects of beer dispense which will include condensing taps and improved consistency on head and lacing. ■

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- Ruth Evans – *BFBi*

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