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Julia

# Transmission on Tour

London City Tour needs reliable radio communications to ensure the safety of its drivers and passengers. Sam Fenwick visited its Heathrow depot to find out more

**Y**ou can't go far in central London without seeing one of the ubiquitous red London City Tour buses. These open-top vehicles circuit around London's major landmarks, informing tourists and residents alike of the capital's famous sights.

But what many people don't appreciate is the amount of technology packed onto these big red stalwarts of British life. The London City Tour buses offer free Wi-Fi, georeferenced multilingual audio tourguides, a mobile app, and USB charging, alongside many other technical features.

I headed to London City Tour's Heathrow depot to find out how these technologies benefit both the business and passengers. John Wood, transport manager for London City Tour, and Graham Stokes, Direct Communications Radio Services (DCRS)'s business development manager, were there to walk me through the radio system that supports London City Tour's buses.

"I'm an old guy in a young world. Everybody is doing things in a different way to the way they did when I was a young man," says Wood. "I was trained by Rolls Royce: do it once, do it right, sign your name, walk away with pride. That's exactly what we've done with this system: we had the right supplier with the right product, the right usage and the right support."

Radio communications are extremely important to the business, should a bus be involved in an accident. "In the case of an injury the radio becomes the most vital piece of equipment; to get the information required quickly and concisely and then to let the people who are involved know that help is on the way. We couldn't live without a radio at that point," says Wood.

"In the event of a personal injury I'll ask 'bus number, location, nature of injury'. I'll get the information back, get on the phone, and get the emergency services. I'm more direct than a [999 call]." Once Wood notifies the emergency services he then goes back to the driver, tells him or her they're on their way, and asks if the bus is causing an obstruction and whether it's drivable.

"I need to know both those things very quickly. If the bus isn't causing an obstruction I'll allow it to remain where it is for ➔

London City Tour relies on radio comms for both day-to-day operations and emergencies

the emergency services. If it is then I'm going to need to get a tow-truck on standby.' If it is blocking the road Wood then notifies TfL, before contacting the driver once more. This is where the radio again becomes vital, to inform the driver that help is on the way. 'I can direct a London supervisor to the scene if I feel the need. The importance [of radio] just can't be stressed enough. It has to work, it can't not work.'

Given the clear need for reliable radio comms, a back-up power system in case of power cuts is surely a must. Stokes says the main repeater in London's city centre, the DR3000, has an uninterruptable power supply that can last for four hours.

Wood explains that London City Tour is part of Grupo Julià, the third largest family-operated tour company in the world. In 2015 it carried more than 3.7 million passengers in 16 cities. Between its buses and trains the group has a fleet of more than 150 vehicles on three continents and over 750 employees.

London City Tour's buses take tourists along two main routes: the Tower Loop, which (as its name suggests) includes the Tower of London, St Paul's Cathedral and the Houses of Parliament; and the West End Loop, which allows passengers to soak in the sights of Westminster Abbey, Buckingham Palace, Hyde Park, Trafalgar Square and the Horse Guards Parade.

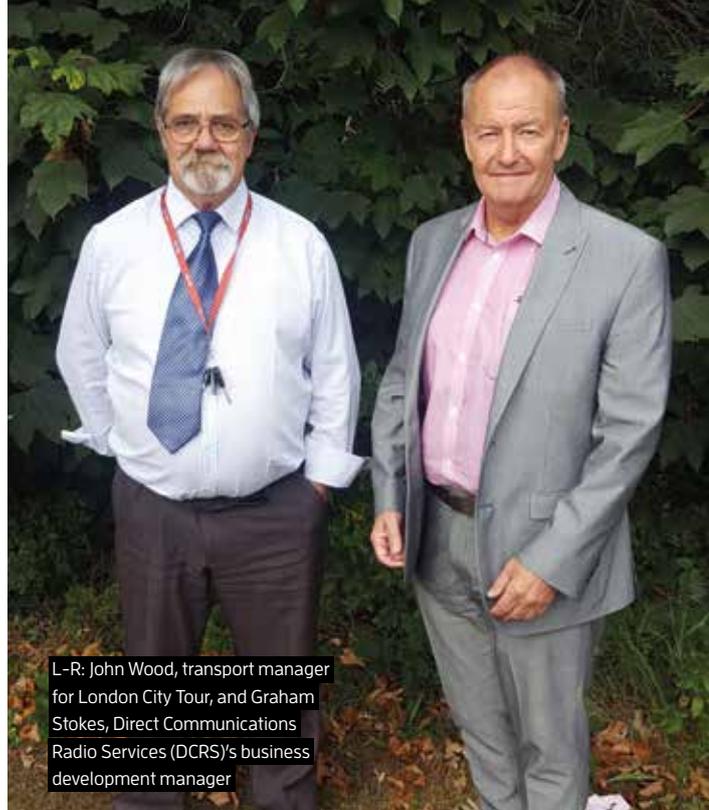
Because London City Tour is a fairly new entrant to the travel tourism market, the radio system it uses today is its first, and went live in March 2015.

'We researched the marketplace and came across Direct Communications Radio Services [DCRS]. There was an internal discussion on what type of system we should go for and what the system needed to do, and DCRS fitted the bill for both so we went ahead with it,' Wood says.

'We wanted a basic system that would give us communication. But that isn't as easy as it sounds. It had to be robust, and it had to withstand water ingress because our buses don't have rooves on them. It needed to provide clear communication between the tall buildings in London in all atmospheric conditions. It also had to be contactable from our operations base in Heathrow,' he explains. 'So there were quite a few issues to overcome. We weren't necessarily buying off-the-shelf.'

'When the first enquiry came from [Julià's] head office in Barcelona it was looking for a radio company to assist it with these requirements,' says Stokes. 'We performed software propagation tests from an existing DR3000 repeater. The results proved that we should get coverage. We then went on the proposed tour routes to ensure that we would get coverage. We gave that report to London City Tour in a meeting, showing it both sets of results.'

'We were looking for a solution that could provide more than one channel for the operation. The obvious route was to choose a manufacturer that could give you two channels for the price of one via the repeater,' says Wood. 'This meant that Motorola Solutions' MOTOTRBO range was the most appropriate. The DR3000 repeater uses TDMA [time division multiple access] architecture, which gives you these two channels; so we could have one for everyday use and a backup channel for emergencies.'



### Fixing the niggles

As with any complex installation, there were a few issues to be resolved before it was working smoothly.

'When we put the system in place we found that it needed tweaking here and there,' Wood reveals. 'We had a problem with transmission from our Heathrow base caused by its location and surrounding buildings. But DCRS overcame that. And we had problems in London with difficult communication between tall buildings, which DCRS also overcame by tweaking or changing the repeaters. We now have a system that is probably as good as it's going to be and is perfectly acceptable in its use.'

'London City Tour has moved its depot from one site in Heathrow to this one,' says Stokes. 'With the other site we had a building in the way so were getting intermittent coverage at the depot. We installed a new antenna and pointed it in the direction of the main antenna in the city to achieve the required coverage.'

'We were under a set of pretty strict requirements from our landlord that came up at the very last minute, we didn't know about them,' adds Wood. 'We couldn't bolt anything to the side of the building or screw anything to the roof because it was flat. So DCRS arranged for the antenna to be on a ground plain.'

'When we first put this system in our buses we found that the normal antenna you'd install on a bus just didn't work for some reason. DCRS went away and created an antenna just for us – that's what I'd call absolutely perfect service,' he continues. 'It took the form of a really unobtrusive unit that just stuck on the windscreen inside the bus with double-sided tape.'

'That has so many advantages because it means if I've got a problem with the radio and I do the basic checks – is it the radio, the handset or the antenna? – I can get at the antenna instantly without clambering behind a bunch of wires inside the bus – that's made a tremendous difference.' ➔

## London City Tour's radio system

London City Tour has a repeater and antenna at Heathrow that points to a central repeater and antenna in London. Its system also includes:

- 2 DM fixed mobiles that are land-based at central points, one is used as a control mobile and the other for resilience purposes
- 24 MOTOTRBO DM4400 mobiles with glass mounted antennas, fixed into buses
- 24 MOTOTRBO DP4400 UHF non-keypad radios, for sales staff, which are allocated at the bus stops around central London
- 6 MOTOTRBO DP4800 full keypad radios for management
- Management radios (DP4800) can talk to all radios and mobiles individually and as a group

**Radio licence: UHF Ofcom hire licence. DCRS is the licence**



What advice does Wood have for those in the market for similar solutions? "Be clear on what you want the system to do. If you need a basic system, order a basic system. If you need to do other things with it discuss with the supplier what you need it to do. Sit down and do your research – your thought pattern should be clear and concise – and don't build in too much."

### The future

Things have been running so smoothly Wood has no plans to expand or change the system. "I see no reason at all for me to change this equipment or the supplier in the foreseeable future," he says. He explains that the only reason he'd change it is if DCRS told him some of the equipment is obsolete and needs to be replaced. "That's the only reason, I'm perfectly happy with the system."

He adds that London City Tour is increasing its fleet of buses "quite significantly [and] at a steady and controlled pace", and will be using the same radio equipment from DCRS that's installed in the buses currently in service.

"What impresses me about DCRS is the speed at which it can get a delivery to me," explains Wood. "It's hugely important because for me to put a new bus on the road and have it fitted out probably 300 miles away, I need to know that I can get the equipment I need to install on the bus on time so I can pass it on and have it fitted within a schedule of works and not hold other trades up. DCRS has excelled in that."

That said, Wood makes it clear that London City Tour is happy to embrace any new technology that could improve its operations. "Our MD Terry Gabriel is very aware of technological advances. He's very up to speed with what's happening in many markets. If he sees a technology of benefit to the company he'll investigate it thoroughly and implement it. It's very rewarding to work with a man like that; to know that while I'm using traditional skills I'm being supported by someone who is taking advantage of current technological advances."

London City Tour's strategy is a fascinating example of reliable radio communications in action, and clearly shows how dealerships can work to win their customers' loyalty. And while the thousands of people taking in the sights on one of the company's buses will certainly not realise it, they are safe thanks to the procedures ready to be enacted at a moment's notice, and the magic of two-way radio. 📶

### Radio use

Because radio communications are so key to daily operations and safety Wood has no time for drivers who don't use the system properly. "I established a radio protocol and the radio usage that I want and demand. I don't want any nonsense on the radio. I don't want any excessive radio chatter and I pretty rigidly stick to that."

He explains that drivers are introduced to this protocol as part of an overall induction process. "I would only need to spend 30 minutes with a new driver on the radio. [On top of that] when a new driver joins the company he will go on route learning for two to three days with an experienced driver. The radio itself is simple to use: turn it on, make sure number one is showing, key to talk, let go to listen. I could cover it in 15 seconds and that's why I like it so much," he says.

As an additional safety measure the driver shouldn't be using the radio on the move, much the same as using a mobile phone behind the wheel is prohibited in all vehicles. "If he has an accident he will use the radio to say 'I've been involved in a collision, go to channel two'. At that time the bus is stationary," clarifies Wood. "The radio is not a handheld device, it's installed in the vehicle. However, we monitor the use and ensure that drivers use the radios while they're stationary."

Thanks to DCRS's careful coverage testing Wood hasn't experienced many issues with interference. "[I don't get] bleed over, though I did occasionally at Heathrow. There's a proliferation of takeaways and one-man taxi companies in and around Heathrow. That becomes more amusing than troublesome."