

'Emergency Services on Two Wheels – The UK and the Brazilian Experiences'

Paulo Câmara, London Borough of Merton, United Kingdom
paulo.camara@merton.gov.uk

Richard Lamb, Santa Catarina Federal University, UFSC, Brazil
richardhlamb@freenet.co.uk

Giselle Xavier, Universidade do Estado de Santa Catarina – UDESC, Brazil
gisellexavier@yahoo.com.br

ABSTRACT

In the UK and Brazil the police, paramedics and firemen have been adopting the bicycle for provision of emergency services and patrols.

In London the bicycle is being used very successfully – both the police and the ambulance services are turning to cycling as a quicker, more convenient way to get through congested streets and pedestrianised areas when chasing offenders or rushing to the aid of the injured. The police are patrolling the streets on the bike more comprehensively, getting to the nooks and crannies of the city no police vehicle has ever been before, and they are also reaching the communities in need more quickly. Their ability to get everywhere and fast makes them highly visible, giving reassurance to local communities and pre-empting crime and anti-social behaviour. The London Ambulance Service's (LAS) cycle response unit have found that by bike, they can get to the scene of an accident more quickly than ever before.

In the city of York in northern England, a six-month Police Community Cycle Unit Pilot project was successfully trialled. The four officers involved cycled over 7,000 miles on duty.

In Brazil, 'Bike Patrulha' is a national policing/patrol programme on two wheels that has also been proving very successful. 'Bike Patrulha' was first launched in the early 90's. The first police force to adopt the Bike-patrol was in the state of Minas Gerais, using a format based on the Canadian Police. Several cities in Brazil have now adopted Bike-patrol schemes. In Blumenau, in Santa Catarina State, the firemen are also on their bikes, acting as first aid emergency services.

This paper demonstrates the great potential of two-wheelers in providing emergency and patrolling services, by reporting on successful examples from the UK (London and York) and Brazil (Blumenau and Florianopolis).

LONDON '999' SERVICES

Setting the scene

'Transport for London is committed to increase cycling in the capital by 80% by 2010. The number of cyclists is soaring, helping improve the health of London and Londoners. The use of bicycles by emergency services also provides a good role model for the rest of London to get on their bikes'

Jeroen Weimar, Head of Enforcement at Transport for London

Transport for London (TfL) is also committed to making London a safe/safer and cycle-friendly city. Cycling in London has already risen by 23% between May 2003 and May 2004. It has been widely reported that use of the bicycle has increased significantly following the bombings in central London in July 2005.

TfL is increasing investment on cycling by 40% in 2005-06 to improve the safety and convenience of cycling in the capital. Such investment adds to the improvement and support programmes that are already underway, including:

- on-road cycle training by experienced instructors so that those new to cycling need not to be intimidated by the experience of cycling in the city
- 900 km of 'fast, safe, comfortable' cycle routes: the London Cycle Network (LCN +), to be completed by 2009
- 150 km of paths in parks and along side canals upgraded for year-round use by 2008
- provision of secure cycle parking facilities: 5,000 spaces on the streets and a further 5,000 at schools by the end of 2005-06
- construction of state-of-the-art cycle interchanges at railway stations, including Walthamstow and Finsbury Park in North London and Surbiton in South London

Cycling in London continues to thrive and not just among the general public. Transport for London (TfL) is also working in partnership with the City of London Police, the London Ambulance Service and the Metropolitan Police Service to make cycling an integral part of the emergency services in London.

Emergency services are turning to cycling as a quicker, more convenient way to get through congested roads and pedestrianised areas. The Metropolitan and City Police forces and the London Ambulance Service have a growing number of serving police officers, traffic wardens, community support officers, paramedics and emergency medical technicians on their bikes in the capital's streets.

The City of London Police

The City Patrol team was launched in August 2002, after a series of trials within Bishops Gate Division. In September 2003, the cycle team was expanded to the Snow Hill Division.

The cycle teams work alongside divisional officers to meet their priorities, which are to reduce the number of assaults, residential and commercial burglaries, the theft of and from motor vehicles, the threat of terrorism and anti-social behaviour.

From 2003 to 2004 City of London Police expanded their cycling team from 17 to 21 staff, and moved the concept of police on bikes through the ranks, bringing into operation the first Special Constable trained as a cycle officer. The team made over 200 arrests, 2,000 stop and searches and issued over £40,000 worth of fines for motor and cycling offences.



Cycles used by the City of London Police. The inset shows a close up view of the emergency warning equipment. There is also a rack-top black bag with police logos, as well as 'police' written on the specialist mountain bike frame. The rear has a small matrix of flashing lights, and the front has a similar arrangement but with a handy notepad on top. Source: <http://www.ukemergency.co.uk/>

The Metropolitan Police

The Metropolitan Police Service (MPS) has recognised cycle patrols as offering opportunities for increased accessibility, visibility and public reassurance, proactive targeting of street crime and anti-social behaviour.

The MPS increased the number of bicycles available from 380 to over 400, and successfully introduced bikes to the Transport Operational Command Unit (TOCU) and Royal Parks. They established the necessary organisational infrastructure to bring cycling into mainstream MPS operations, and finalised the MPS package of standards for officers on bikes relating to cycle training, clothing, bikes and maintenance. A mandatory bespoke MPS cycle training package has been developed and approved, which will train approximately 1,500 police officers, community support officers and traffic wardens.

London Ambulance Service

The London Ambulance Service (LAS) NHS Trust is the largest ambulance service in the world to provide healthcare that is free to patients at the point of delivery. LAS has two principal roles: they provide accident and emergency services in response to '999' calls and a patient transport service which performs an important role by taking non-emergency patients to and from their hospital appointments. In 2004/05 LAS handled 1.1 million emergency calls from across London: approximately one in five of the '999' calls to the ambulance services in England.

LAS employs 4,000 staff, runs 400 emergency ambulances, 195 patient transport service vehicles, 70 rapid-response cars, 14 cycle-response units, 10 motorcycle-response units, five special-care baby units and three baby emergency transfer vehicles. In addition, LAS provides Helicopter Emergency Medical Services (HEMS), (London Ambulance Services, 2005).

Tom Lynch initially raised the concept of using bikes in the London Ambulance Service in 1998. Following a successful pilot scheme in the summer of 2000, the LAS funded a team of Cycle

Responders and, since then, the team has proved to be very effective in providing their services in the aid of the injured.

This year, 2005, LAS doubled the size of their cycling team from 8 to 16 staff and successfully completed a pilot scheme at Heathrow Airport Terminal 4, securing a permanent team in the terminal. They finalised the National Cycling Response Unit policy, procedures and recruitment package, and also set up the necessary support systems to encourage other LAS staff to cycle, including corporate staff discounts, a 'buddy scheme', and advice on bike servicing, installing secure cycle parking, clothing dryers, as well as providing a set of pool bikes for staff.



LAS Cycle Response Unit
Source-<http://www.ukemergency.co.uk/>

The figure shows one of London Ambulance Service's cycle response units. The large yellow pannier pack opens to allow two bags of medical equipment to be removed and carried to the patient. A map pocket is integrated into the lid. The LAS cycle unit concentrates on attending category B and C calls in place of an ambulance. 'B' risk areas contain much the same types of buildings as 'A' risk (congested areas), but are less concentrated, as well as concentrations of older multi-storey residential properties. 'C' risk is mostly suburban terraced, detached and semi-detached houses and blocks of flats.

When compared to a regular ambulance service, both the air ambulance and the pedal cycle options have advantages and disadvantages. While the air ambulance can land almost anywhere and can get to a patient and take them to hospital at great speed and in comfort, the cycle can also beat a regular ambulance to a patient in a crowded street or inaccessible area. The major differences between these two services are their top speeds (140 mph x 30 mph) and the vehicle cost. While the helicopter costs £1,500,000 the bike costs only £2,500.

Another feature of the bike-ambulance is that with a third of emergencies not requiring hospitalisation, the LAS cycle unit is able to deliver fast, high quality medical treatment leaving ambulances free for higher priority calls and freeing more beds at hospitals for those in real need.

NORTH YORKSHIRE POLICE – COMMUNITY CYCLE UNIT

In July 2002, the North Yorkshire Police launched an innovative high-profile uniformed cycle patrol project at St William's College in York. The project was established to carry out patrols on the West Side and the city centre for a six-month period. The unit has four officers: one sergeant and 3 PCs were to spend the entire 6-month pilot period patrolling exclusively on cycles, rather than in vehicles or on foot.

The project was partially funded through sponsorship by various businesses within York and the Joseph Rowntree Foundation who provided the bicycles, clothing and equipment. The North Yorkshire Police funded the salaries. In addition to their sponsorship, Joseph Rowntree Foundation agreed to undertake an evaluation of the effects of the unit in terms of public reassurance and satisfaction in the residential areas patrolled, and the effects, if any, on the fear of crime in those areas (2004, North Yorkshire Police).



Members of the York Community Cycle Unit - Photograph courtesy of Richard Thompson - www.ukemergency.f9.co.uk

The objectives of the North Yorkshire Police Community Cycle Unit were to:

- Deliver high quality, high profile patrols on the West Side and the city centre
- Raise the profile of North Yorkshire Police amongst the communities in those areas
- Reduce crime and the fear of crime in the areas
- Increase feelings of safety within those communities

The officers were trained by the City of York Council's Cycle Training Department and each received certification as an Advanced Cycling Instructor by the end of their training. They wear cycle-specific uniforms that include high-visibility body armour adapted to carry all personal protective equipment and superior quality cycle helmets. The cycles are specially adapted Scott

MTB's with front suspension forks to improve handling, a front disc brake to ensure rapid and safe braking, and a powerful lighting system. The vehicles are also equipped with blue lights and sirens for use when responding to incidents in pedestrianised areas.

The cycle patrols are able to gain access to many areas inaccessible to motor vehicles, such as cycle paths as well as allowing off-road patrols in wooded areas and parks. This has led to many areas, like the riverside cycle paths, Rowntree's Park and West Bank Park, seeing a regular police presence for the first time. The mobility of the bike also allows officers to respond swiftly to incidents where traffic congestion or pedestrianisation would increase vehicle response times.

Operations

The Cycle Unit officers have been involved in a number of projects and operations. A few of these are described below:

Operation Valley – aimed at tackling an increase in burglaries in the Clifton and Groves areas. Cycle team officers carried out a high proportion of the stop-searches during this operation and arrested a number of offenders.

York Races – Cycle Unit officers are now a permanent part of the team used to police these busy meetings, moving with ease through the heavy vehicle and pedestrian traffic before and after, and carrying out preventative crime patrols around the large car parking areas.

York City Football Club – Cycle Unit officers are routinely tasked with 'spotting' and intelligence gathering before and after matches, and carry out crime patrols outside of the ground during matches.

School visits – Officers have carried out several nursery and school visits to talk about cycle safety and transportation issues, receiving several letters of appreciation as a result.

Cycling Health and Safety Training for Postal Workers – PC Steve Harvey is currently working in partnership with City of York Council and the Post Office (the largest users of cyclists in the city) to facilitate training for cycling postal workers in York. This training, aimed at improving the safety of cycling postal workers, is also believed to be the first of its kind in the country.

Cycle Lighting Campaign – PC Lee Fickling spearheaded this successful campaign in November 2002 – to date 246 cyclists have been stopped and dealt with. This scheme, mirrored in the nation-wide Vehicle Defect Rectification Scheme is run in partnership with York cycle dealers, and is believed to be the only scheme of this type in the country.

City of London Police – two officers from the Unit visited the City of London's City Patrol Team – the purpose of the visit was to share ideas and evaluate working practices between the two similar units.

Achievements

During the six-month pilot in York, the police community cycle unit has:

- Cycled over 7,000 miles
- Carried out around 3,465 hours of patrol
- Arrested 102 offenders
- Attended 542 reported incidents
- Carried out 66 stop-searches
- Arrested 12 people as a result of property recovered from those searches
- Detected 70 crimes
- Submitted 24 intelligence reports
- The four-man team has taken no time off work due to sickness or ill health
- Initiated a scheme in which 141 cyclists in York have fitted lights to their cycles and 105 are to be or have been prosecuted for cycle lighting offences
- Issued 20 fixed penalty notices, of which 18 were cycling offences
- Saved around £1,500 in fuel costs



Bobbies on bikes in Yorkshire
(Photograph courtesy of Richard Thompson www.ukemergency.f9.co.uk)

All these figures compare favourably against those of other colleagues. As well as the efficiency savings, cycle officers have arrested 45% more offenders than comparable Local Area Policing (LAP) officers and had a 164% higher stop-search rate. Their arrest rate from stop-searches is 71% higher.

The reported positive results of the cycle unit team are a direct result of the greater mobility, flexibility and increased speed of response enjoyed by the bicycle.

The cycles provide a huge advantage in terms of speed and manoeuvrability - something that has helped the unit's officers in making arrests and apprehending suspects. An officer on a bicycle is much quicker than an officer on foot and much more mobile than one in a car or van - even though these might be needed later when an incident or arrest takes place.

Since the six-month pilot, the North Yorkshire Police Cycle Unit team has expanded – they have now 10 officers providing 24-hour cycle patrol cover.

BIKE-PATROL IN BRAZIL

Bike-patrol started in the state of Santa Catarina, in the south of Brazil, during the 1970's as a sub-division of the motorcycle group in Joinville, a coastal town founded by German immigrants. The innovation soon lost its impetus due to inadequate bicycles and the standard uniforms and boots which made the patrols unreliable and inefficient. The officers received no specialised training either in those days.

Commercialisation of the mountain bike design in the 1980's, however, paved the way for a gradual return of the bicycle for police patrolling, this time with a recognition of the need for light-weight, high-performance equipment and specially designed clothing. Cycling policemen re-appeared first in the early 1990's in Belo Horizonte, capital of the land-locked state of Minas Gerais before spreading to many towns nation-wide. The Joinville police force re-introduced cycling policemen with a squad of cyclists in the year 2000 and now operates 27 units with great success. The town is generally flat and the urban area well-organised meaning the distinct advantages of the bicycle come to the fore, weaving between standing traffic and not being slowed down by hard climbs.

Florianopolis, the state capital of Santa Catarina, enjoys a curious mixture of commerce, light industry and tourism. Situated on a mountainous island, the permanent population of around 400,000 doubles during the summer months. The dispersed communities and at times stretched road network all add to the challenging situation for the local police force. Tropical summertime temperatures and the attraction of 42 beaches plus the isolated forests and farmland mean that significant crowds can congregate in areas difficult to police even at the best of times. The solution has been an extension of the Bike-patrol system adopted elsewhere in Brazil.

The first cycling policemen on the island are from the Community Police division and bring to their policing a few personal characteristics and techniques. Constable Virissimo, after 19 years service was given the duty of attending to violent disturbances at a nearby school. Since it was only 600 metres from home and from the police station, Virissimo, until then not a keen sportsman, thought the best way to carry out his task would be to go there by bicycle. From his first attendance by bike in September of 2004 the initiative quickly became established. Still in its infancy, the Bike-patrol is now keenly supported by his superior officers in the light of a very positive response from the community and a demand from neighbouring beach resorts. So much so that Virissimo is fully occupied during the week and even assists with pilot schemes elsewhere during his time off.

After a chance encounter with a tourist, Virissimo took time out to learn about the scheme underway in Joinville, 200km north of Florianopolis, and to train with Captain Waldo Herbster Junior, founder of the operation there since 2000. Training included as much about the specifics of policing by bicycle as in cycling technique and bicycle maintenance. Virissimo then returned to Florianopolis to pioneer the scheme in tandem with other community activities such as giving classes to teenagers about road safety, recycling and kitchen gardening. For Virissimo, "it's all part of the same thing"; promoting contact and communication within an integrated programme of community policing.

The local business community in Canasvieiras was quick to see the advantages of having policemen patrol by bicycle. In small conurbations the bicycle is able to provide competitive response times and greater access possibilities, added to the fact that the community knows the Bike-patrol cannot easily be called to assist elsewhere. Within this small tourist colony built along 2.2 km of broad white beach, they can reach many places inaccessible to other officers. At certain



Constable Virissimo and students growing herbs and vegetables at school (Photograph courtesy Daniel Conzi and Diario Catarinense)



Constable Virissimo and students outside the Municipal School Donicia Maria da Costa in Monte Verde, Florianopolis. (Photograph courtesy Mauro Jose Virissimo)



The Canasvieiras Bike-patrol
(Photograph courtesy Mauro Jose Virissimo)



The Bike-patrol performs far better with less weight and high-performance equipment, facilitating speed and control. (Photograph by the authors)



Sergeant Virissimo and company on a two-day cycling tour (Photograph courtesy Mauro Jose Virissimo)

difficult areas silently has led to more effective policing of areas popular with drug-users. A cycling police officer is more able to smell the marijuana smoke than one travelling by car. By carrying a mobile phone and police radio, the officer is in constant contact with his support team and doesn't feel isolated either from his colleagues or from continuing his work with the community.

Bike-patrol has only been in operation for one summer in Florianopolis, however, the success during the 2004 to 2005 season has ensured their return indefinitely. In order to steal a march on the evaluation process within the police force the bicycles used in Canasvieiras were bought by the local community to specifications laid out by Virissimo. Operations started as soon as training was completed, short-cutting the usual full cost-benefit analysis.

times of the day, traffic on the narrower roads is stationary, effectively isolating parts of the community from the traditional car patrols. Locals feel that the Bike-patrol service is always close by and feels more like their own, contributing to the goal of integrating the police force within the community.

The Bike-patrol carries minimal equipment. Overall weight has a significant effect on the cyclist's performance and with a daily average of 40km cycling, any saving is valuable. Virissimo's bike is 18 kg complete with radio, cycle repair kit and first aid kit. Improving every day, he now carries a water bottle and uses high performance alloy equipment on a mountain bike frame with front suspension. Virissimo prefers oversized mountain bike pedals to toe clips and he carries out the maintenance himself. The uniform is subtly adapted to remain as close to the standard police officer appearance as possible, their distinctive visible presence being key to the community operation.



The Bike-patrol can reach areas not covered by other patrols, arriving silently and maintaining contact by radio (Photograph by the authors)

This adaptable profile is putting Bike-patrol at the forefront of the struggle against anti-social behaviour. By bicycle, policing takes on another level, affording better observation at the slower speeds, facilitating the officers' use of their other senses. Approaching

The operational personnel also feel the benefits of increased physical activity. Virissimo has now lowered his cholesterol level, started training at a gym, and spends his weekends riding with community groups.

He arrives energised at work and deals more positively with the daily encounters that his job requires. Personally and professionally he has felt the benefit of cycling which is being passed on to the community every day.

The future for Bike-patrol as an additional, viable means of policing is firmly established and can only grow.

THE CYCLING FIREMEN OF BLUMENAU



Arriving quickly at the scene of an accident provides effective first aid (Photograph courtesy Jose Goes)

Blumenau, a medium-sized town mid-way between Florianopolis and Joinville and also famous for its Germanic traditions, has, since the year 2000, introduced a successful extension to the fire service that is benefiting the broader community as well.

The cycling firemen of the third battalion of the Blumenau Fire Brigade provide safety cover, supervision and advice for many of the numerous sporting and public events held in the town. By bicycle they can accompany distance runners, reaching all points along the route whether road races or cross-country. As an adaptable service they have also assisted in cycle races and other gatherings such as country walks, town fairs and processions, responding quickly and effectively in crowded or remote areas.

The rapid response enables attendance at accidents in the earliest moments when first aid can be of most benefit. Should hospitalisation or treatment with more specialised equipment be necessary they use radios for liaison with the control centre.



The bicycles are equipped with first aid kits in the panniers, lights and sirens. The firemen use specialist clothing in distinctive fire brigade colours (Photographs courtesy Jose Goes)



There is great demand for participation in sporting events where they provide first aid and advice to the organisers (Photograph courtesy Jose Goes)

The first aid equipment contained in the panniers is sufficient for many types of accident, even the more serious ones that can occur in high-speed cycle road races. The bikes are also equipped with sirens and lights, which, coupled with their highly visible clothing, ensure they are easily seen and everyone knows who they are.

The safety attendance at outdoor events has removed another barrier to encouraging the population to take up sporting activities.

As in Florianopolis, the idea was developed with the dedication of individuals. In Blumenau, Luis Antonio Ferreira, a fire officer and keen cyclist, even provided his cycling emergency service on a voluntary basis for three years until the brigade could institute an official

department. His expertise forms part of the specialist service offered by the Blumenau Pro-Cycling Association (ABC), who are now called upon to assist with similar initiatives being implemented elsewhere in Brazil.

CONCLUSIONS

This paper has shown that the bike has a key role to play in the provision of emergency services. Both in the UK (London and York) and Brazil (Blumenau and Florianopolis) emergency services are provided on two wheels very efficiently.

Two-wheelers are quiet, cost efficient, and amazingly effective, bridging the gap between automobiles and foot patrol. In addition, they can be operated on streets, pavements, alleys, trails, and in any areas that are difficult to access with motor vehicles and motorbikes. The York Community Cycle Unit pilot has also shown other benefits of the bikes: cost savings in fuel, a healthier and fitter labour force, and it is believed that there must have also been environmental benefits that the pilot did not account for.



Ambulance Patrol in London. Source: www.londonambulance.nhs.uk

Another main feature of the two wheelers is the speed at which they can get to the scene of an emergency. In terms of ambulance services and first aid, it is also important to stress that by providing first aid at the location of the incident or accident, beds in hospital are not being occupied unnecessarily and are freed for those in more urgent need.

The mobility of an ambulance service on a bike can mean the difference between life and death in congested, crowded or remote conditions. Paramedics on bikes are increasingly deployed in tourist areas, during special events, in amusement parks and sports arenas, on

college campuses, and in airports, train stations and other transportation hubs. They are also indispensable in urban and wilderness search and rescue and mass casualty situations.

Emergency services on two wheels are now widespread - according to the International Police Mountain Bike Association (IPMBA), approximately 43% of all local police departments in the US use bike patrols on a regular basis, including 90% of departments serving at least 100,000 residents. There are also over 300 bike medic teams across the country.



Police Patrol on Rollerblades in Zurich. Source: www.swissinfo.org



Cycling policemen and paramedics on two-wheeled personnel transporters in Chicago. Photograph by the authors

In Switzerland, the Police are also winning the fight against crime on two wheels. Police horses have been replaced with a team of 25 men and nine women patrolling Zurich on Rollerblades. The skaters patrol Monday to Saturday from 1.30pm to 5 pm, will be cracking down on anti-social behaviour, illegal parking, drug dealing and other crimes.

To sum up, the great potential of the bicycle in providing a wide range of emergency services and patrol becomes clear. The schemes detailed here from the UK and Brazil show that emergency services on two wheels are 'faster' under certain circumstances, are of low cost when compared to alternative or conventional services, provide or enable cohesion within the communities, and in the Santa Catarina case, evidence shows that it has a positive health impact on the cyclists themselves. In addition, emergency services on the bikes are non-polluting, do not add to traffic congestion and are more flexible than the available alternatives.

It is the authors' conclusion that this is a win-win situation.

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