

Trends in Bike Patrol

By Kirby Beck

The past couple of years have seen a slow progression of police bike patrols around the United States. In the United Kingdom, however, the use of mountain bikes in public safety has virtually exploded. In the 1960's hit "England Swings," Roger Miller sang of "bobbies on bicycles, two by two..." but never have modern English police and medics taken to bikes like they have since 2002. The chance of seeing "bobbies" on bikes now is many times greater than it was in the mid-60's when bikes were ridden more for public relations than for serious policing.

A dedicated group of officers from the Metropolitan Police (London), North Yorkshire, the City of London, Northumbria, and Hampshire, as well as medics from London Ambulance Service, have been working to expand police and EMS cycling through IPMBA training programs, national conferences, and seminars. They have also been sending personnel to the United States to obtain IPMBA Instructor certification and network with bike patrol personnel. They are bringing with them new vendors and new ideas in uniforms and equipment.

Equipment Vests

One of the more unique ideas coming from the UK is the vest carrier system specific to bike patrol use. Similar in appearance to tactical vests, these are designed and cut to be comfortable while cycling. The UK version virtually eliminates the need for a duty belt since all of the equipment is carried in secure pockets on the vest. Their bike officers rarely carry firearms; therefore, built-in holsters are not commonly found on UK vests. The units are built to hold the officer's ballistic vest panels, eliminating the need to wear body armor under their clothing. As a result, ventilation is greatly improved.

In keeping with UK standards, UK vests are "Hi-Viz" fluorescent yellow with wide silver stripes of retro-reflective material for enhanced visibility, both day and night. High visibility should be an important concern for bike officers operating in or near busy traffic. For some reason, though, the Hi-Viz yellow and reflective stripes which are so common in the UK have been slow to catch on with officers on this side of the Atlantic.

The maker of one of the mostly frequently used vests is Kreative Innovative Technology, better known as KIT, a name inspired by the common use of the term "kit" to mean "uniform". The vests are custom-made; therefore, so the color and positioning of equipment can be made to order, which will be advantageous if and when KIT expands into the American market. More information about the armor carrier and equipment vest can be obtained at www.kitinfo.co.uk, and a review can be found at www.ipmba.org.

A company named East Valley Uniforms of Tempe, AZ has made a similar version that is being used by bike patrol officers in Chandler and Scottsdale. The vest holds the officer's ballistic panels on the inside, but also has customized pouches on the front and back to hold a Taser™, radio, OC spray, batons, magazines and handcuffs. Instead of Hi-Viz material, it is made to match the rest of the uniform. Officers will still need to wear a gun belt and security holster with one of these carrier systems. Nevertheless, the back strain experienced while wearing a heavy, equipment-laden gun belt while cycling can be reduced because the weight of the equipment is spread across the body.

The vests look like tactical vests, with POLICE displayed prominently across the front and back. Badges or embroidered fabric badges can be attached to the front for additional identification and authority. It is quite obvious that the wearer has ballistic armor on, which may take away some of a bike officer's friendly, less military, appearance.

But in 2005 America, is anyone, particularly criminals, really fooled by so-called "inconspicuous" armor worn under officers' shirt? Most people seem to expect that officers are wearing some sort of body armor. These units only confirm it, and to the bad guys, you look like you mean business.

Cycling generates more heat and perspiration than most types of police activity. As a result, specialized bike patrol shirts are made of highly wickable and breathable materials such as Coolmax or PowerDry. When the officer is wearing body armor between the breathable layer and the skin, the breathability of the material is minimized. These external vests allow the wickable material to actually breathe better due to increased air circulation around the arms, waist and chest. In addition, an officer may find moments when they may be able to loosen straps further for even more ventilation.

While these vests are not yet widely available, companies such as Bratwear of Fife, WA, offer custom-made tactical vests and can also design a suitable carrier vest for bike patrol use.

Headsets

Most bike patrol officers rely upon a portable radio and shoulder mic for their crucial voice communication. While tactical teams and motor officers have used headsets of varying types for years, finding one that works well for bike patrol has been a challenge.

Atlantic Signal, LLC, based near Topeka, KS, has been producing military quality headsets under the name New Eagle International for a number of years. Working closely with members of the Topeka Bike Patrol, and others within IPMBA, they developed the Blue Racer headset as a practical and effective option for bike officers wearing bike helmets. Reviewers and testers have raved about the clarity of noise-suppressed transmissions and reception despite overwhelming background noise.

Officer Artie Gonzalez of the Topeka Police Department even stood inside a noisy car wash while it was in use and ran a car registration with his dispatcher. His transmission was reportedly so clear and free of background noise that the dispatcher didn't believe that he'd been inside a car wash at the time! His ability to hear with his single earpiece was also remarkable in that setting.

The Blue Racer is comprised of a flexible plastic band that encircles that back of the head and hooks over the tops of the user's ears for stabilization. One side holds both the earpiece and the extended, noise-canceling mic. Attached to the headset is a cord that clips to a collar or epaulet, and runs to the small, ambidextrous PTT switch that clips to the front of the user's shirt. The cord continues onto the portable radio where the attachments are compatible with the most commonly used radio models.

For additional safety, the cord that attaches the headset to the radio has a pressure-sensitive breakaway feature. Should a suspect grab the headset or wire and attempt to pull the officer down with it, the headset would rip free of their head and break away from the section attached to the radio. This feature also makes it easier to put on and remove the radio and headset at different times.

Like the Navy's submariners, bike patrol officers are a police department's most stealthy tacticians. Headsets add to their tactical ability by eliminating all ambient transmission noise. They enable an officer to privately hear important information, like "wants" and "hits" on a suspect, without having to step away. The ability to actually have his or her portable radio transmission heard clearly is an advantage every officer would like to enjoy.

Atlantic Signal is able to work with individual departments to make some custom changes, such as adjusting cord lengths, which can vary with an officer's height. For more information and testimonials about Blue Racer headsets, check their website.

Shoes

A bike officer's feet are exposed to untold wear and tear throughout the day. In a single shift, they may make thousands of revolutions on the pedals. Each pedal stroke puts pressure on the nerves and tendons on the bottom of the foot. Each revolution potentially flexes the foot, causing repetitive stress to the foot and its soft connective tissue and nerves. Long-term exposure can result in several painful foot conditions, including Plantar Fasciitis, Metatarsalgia, and Morton's Neuroma.

All of these foot conditions result from excessive pressure and foot flexion over an extended period of time. Bicycling shoes are made with stiff soles that resist foot flex, particularly in the middle of the foot, in order to enable the cyclist to put more power into each pedal stroke. Subsequently, bike shoes reduce flexion and the potential of pressure-based foot injuries.

Over the years, officers have worn various types of cross trainer-type shoes on bike duty because they come in black, which matches the uniform specs of most departments, and most can even hold a modest shine. However, cross trainer shoes are designed for walking and running. The soles are designed to flex. Soft soles, intended to enhance traction and cushion shock, may not resist the constant point pressure exerted by metal cage-type pedals. In addition, cross trainer shoes are often too wide to slide quickly into (and out of) the toe clips that are recommended for officer safety.

Several companies make shoes exclusively for bike patrol officers. All feature stiff soles and thick bottoms with treads that make walking and running safe and reasonably quiet. They allow a slight flex in the front portion, which makes running and walking easier but does not effect cycling, because that portion is

supported and stiffened by the pedals. The shoes are built to accommodate clipless SPD or similar pedals, but also work well with toe clips. They have removable plugs and internal hardware to enable them to be used with clipless pedals, which connect directly to the bottom of the shoe. They affix the shoes and pedals much like a ski binding connects boot to ski. Both offer a quick release when the heel is twisted laterally.

In the last couple of years, several companies have built shoes especially for bike mounted law enforcement officers. One company, Patrol Cycle, LLC, worked with IPMBA members to design and perfect their Patrol shoe. It is constructed of top grain, black leather and can be polished. They have stiff soles for cycling, yet are comfortable for walking and running. The shoes are SPD-compatible, and have thick lugs to provide traction while on foot.

The material is soft enough to enable the officer to walk quietly on hard floors while searching buildings or making stealthy approaches. They feature a large flap over the front to keep laces safely out of the chain and chainrings. A large patch of silver retro-reflective material adorns the back of shoe. This enhances nighttime safety, especially for clipless pedal users. More information is available from www.patrolcycle.com, www.patrolcycle.com, and a review appears on the IPMBA website.

Diadora also makes law enforcement specific bike shoe. It has many of the same sorts of features as the Patrol shoe. The laces are secured with a small loop instead of a flap. The tread is not as thick, nor as aggressive, as the Patrol shoe, but it, too, is SPD-compatible.

Another bicycle shoe manufacturer has revamped its previous law enforcement model. The Lake shoe company has designed the model MX 255-P. This black hiking-type bike shoe features full grain leather uppers with a Helco abrasion resistant toecap. The soft Airprene® collar cradles the user's ankle. The upgrade includes the addition of the SPD-compatible New Trail V outsole by Vibram. It is sure to provide lots of off-bike wear and traction.

The all black, polishable leather MX 225-P police model will not be available until late 2005. The Lake MX 255 is available now, and is nearly identical to the police model except it has black Nubuk leather and two small yellow graphics on the side, which could be easily disguised with a product like Fiebing's Edge Ink or a black Sharpee.

Bicycles

The three biggest suppliers of police mountain bikes are Trek, Smith & Wesson, and Fuji. These solid companies have offered great quality bike patrol models since nearly the beginning of police cycling. They are equipped with components that have proven to be necessary for policing, including durable wheels and pedals, roadworthy tires, front suspension forks and an upright seating position. Other major bike companies have marketed police models over the years, but these three companies have remained the most active.

A new company called Patrol Cycles, LLC, based in Houston, TX, manufactures two models of the semi-customized Enforcer police bikes. These excellent bikes have first-rate components and can be ordered in several colors and with specialized color graphics. This bike has been reviewed at IMPBA online.

In the past few years electric-assist bicycles have been an off-and-on fad. Most electric police bikes to date have comprised a police model bike with an add-on motor and battery. They have been quite heavy and somewhat difficult to ride up and over obstacles such as curbs or stairs. Many ended up stripped of their motors and batteries and used as standard bikes. Electric-assist bikes were never intended to be ridden using their motor full-time. The motor was for afterburner-like help when accelerating quickly, assistance in getting up hills, or riding to a scene quickly while minimizing energy loss. If used full time, the batteries drain far too soon and would never last an entire shift.

Tidal Force, a division of WaveCrest Laboratories, is manufacturing a new generation of high-performance electric bicycles marketed for law enforcement, military, and civilian use. Unlike earlier electric bikes, the TidalForceTidal Force M-750 is designed and built as an electric bike. The motors and batteries are contained in housings around the hubs of each wheel.

The bicycle is capable of reaching speeds up to 20 miles per hour without pedaling, and has a range of up to 20 miles on a single battery charge. The motor is described as generating very little noise or heat, and no emissions. While the bike is still quite heavy, the bike remains balanced with the weight equally spaced at each end. Like its predecessors, it is not intended as a "never pedal" vehicle.

Another company is marketing a unique bike to the police and EMS market. The bike is made by Christini Technologies and features All Wheel Drive (AWD). Their website describes it: "A handlebar-mounted switch

controls the AWD 'shift on the fly' clutch. When the clutch is engaged, the rear spiral gear interlocks with the rear hub and power is transferred via internal shafts to the forward spiral gear set, which drives the Christini freehub. Due to a slight gearing differential, the front wheel is not actively powered on smooth level ground. However, the moment the rear wheel slips, power is instantaneously transferred to the front wheel. Similarly, the moment that the front wheel decelerates, as in hitting a rock or starting to wash out in a corner, power and traction are transferred to the front wheel."

AWD technology may be more than most urban bike officers require. But it might be just the thing for officers who patrol off-road and in sand, mud, and on steep trails.

Increasingly, bikes are being purchased and used for EMS and Search and Rescue (SAR). They are the perfect vehicle for accessing areas that are isolated by natural disasters like tornados, hurricanes, and earthquakes. Bikes, particularly electric and AWD models can have great value in those critical situations. In some cases Homeland Security and Emergency Management money might be available to help with these purchases.

Emergency Lighting

This author firmly believes that a bike officer has more in common with an officer on foot than with one in a police car. The best bicycle lighting systems on the market can still not compete with the 360° effectiveness of even an old Federal Signals Fireball dashlight. Old timers called them Kojak lights.

Bike-mounted emergency lights are great for signaling violator cars to stop, or to get through a crowd or to warn oncoming traffic of your presence. None are effective enough to allow an officer to blow through intersections with busy or high-speed traffic. Many police bikes are equipped with emergency lighting not only for practical reasons, but also because, under state law, such lighting may be necessary in order to confer emergency vehicle status on the police bicycle.

There are a number of excellent headlight systems for bicycles, and more are appearing every year. But the standard in lighting for police bikes has been, and continues to be, NiteRider. Their single and dual lamp headlight systems have proven to be both bright enough and durable enough to hold up to the rigors of policing. Police bikes are frequently knocked over or dropped; therefore, lamp housings, mounting systems and components all must be able to withstand the forces and trauma involved.

NiteRider has passed muster many times over. They offer both Halogen and Metal Halide (HID) lamps with rechargeable battery systems. Halogen lamps range from 10 watts to 20 watts which, used in combination, can emit up to 32 watts of power. 10 watts is the absolute minimum wattage recommended by IPMBA.

The new three-stage Flamethrower model HID light has an intensely bright bluish-white light. It comes with three LED lights built into the housing in case the main lamp burns out or loses too much battery power. The 12-watt HID is said to emit light equal to a 40 to 50 watt halogen. The HID run times are reported up to four hours, but they run less when maximum wattages are used. Rarely is a headlight system run for an entire shift, so a full battery charge is usually enough.

NiteRider offers several combinations of headlamps, emergency lighting and warning horns. Some systems dedicate lights that are colored red or blue; another has lens covers that flip down over white lamps to make them warning lights when necessary. Flashing units are built into the systems with colored lights. The NiteRider siren produces a loud, high pitch noise that is extremely attention-getting and annoying. It does not sound like a typical police siren, however.

A new company named CycleSiren of Orange, CA manufactures the most realistic-sounding police siren for bicycles on the market. It can reproduce a 115 db wail, yelp or air horn. A sound sample can even be heard on their website! CycleSiren uses LED-based warning lights like others used for police emergency lights.

They use minimal power yet are bright enough to be visible in the daytime. The lights are lightweight and do not affect handling. They can be purchased with or without a headlight system. CycleSiren sells a neat little mini-bar that mounts to the handlebar. It extends forward to hold accessories like lights, siren, switches or anything that might otherwise be attached to the handlebar itself.

Another vendor of LED lighting for bikes is Alerte Systems of Loveland, CO, which IMPBA has also reviewed on its Web site. Their Trailblazer and Trailblazer II light and siren packages consist of three parts: a 32-LED front

housing, a 32-LED rear warning light, and a 10-hour battery that fits into a standard water bottle cage. The front and rear housings are made of lightweight polycarbonate and weigh nearly nothing.

At about three pounds, the battery is the heaviest part of the system. The flashing LEDs can be ordered in combinations of red, blue, amber, and even green. The LED lights are easily visible in daylight. The siren is contained within the front housing and can be purchased in either wail or hi-lo. Alerte offers the option of either housing-mounted or handlebar-mounted switches. The headlight options with the Alerte System lights are limited to white LEDs. An additional headlight with more wattage may be desirable.

Lubes

It may surprise some, but the single most important component of a bicycle is one of its simplest—the chain. All of the power and energy the rider utilizes is transmitted through the chain to the drive train. If the chain is stretched, rusty, bent or in need of lubrication, power and efficiency will be lost and other components damaged. The best way to care for a bike chain is to clean and lubricate it regularly. There are many bike lubricants on the market. Many claim to be the best. Some claim to have near magical properties. This author has discovered one lubricant that may indeed possess some magical qualities.

ProLink chain lube is manufactured by ProGold Lubricants of College Park, GA. The thin, almost watery, lube comes in a dropper-style bottle for precise control when applying a drop or two to the bushings. A spray can may apply far too much lube and spray it on places that don't need it. The lubricant uses MFR technology, which ProGold claims is a molecule that bonds to the metal surface. It never gets sticky and tends to keep the chain clean and free of dirt and grit. ProLink doesn't contain Teflon, wax or any of the commonly used substances that tend to attract dirt.

ProLink can be used on the chain, cables and pivot points. It greatly reduces friction and wear. This author has used the product for about three years and has found that ProLink has extended chain life far beyond expectation. Chain care is simple. Put a drop or two on each of the round silver bushings. Turn the cranks and run the chain up and down the chainrings and rear cassette a couple of times. Take a rag and wipe off the excess. That's all that is necessary to protect the chain, extend its life, and get the most from the energy and power you use to move the bike. This extended chain wear has been the best evidence of ProLink's near magical powers.

Conclusion

As bicycle patrol continues to evolve within the United States and spread throughout Europe, the UK, and beyond, equipment and accessories will continue to adapt. Bike officers have an uncanny ability to conceive ways of integrating the bicycle into all aspects of policing. There seems to be no end to the versatility of the bike and the forward-thinking bike officer, and as long as they lead, the industry will follow.

Kirby Beck recently retired after years with Coon Rapids Police Department in MN.

This article appeared in the April 2005 issue of Law and Order magazine, www.lawandordermag.com.