How to Buy a Public Safety Mountain Bike

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Over the years, many public safety professionals have asked for my advice about purchasing a mountain bike for patrol use. What brand should we buy? Should we buy full suspension? What sort of equipment should be added to the bike? And so on.

This article will attempt to demystify the process of buying a public safety bicycle and related equipment.

The first rule of buying bike equipment for your unit comes from something I learned years ago in Community Policing training. I was taught that "the problem drives the tactic," meaning that the community problem you are attempting to solve will dictate the tactics you utilize to resolve it. This relates to mountain bike equipment because the way in which you plan to utilize your bike patrol will dictate what kind of equipment you should purchase.

Before you start shopping, conduct a bike unit self-analysis to establish your basic needs.

Here are a few examples:

BikeTown EMS Agency utilizes a bike patrol for about one to two weeks annually, during special events. Because the bikes will not be used regularly or frequently, this department may be able to purchase a slightly below mid-range model bicycle.

BikeTown Police Department deploys a bike patrol unit on two shifts per day, seven days a week. In this instance, the bicycles will get utilized much more, causing more wear and tear on the components and requiring more maintenance. This agency should purchase a higher quality bike in order to stay serviceable.

In addition to the amount of street time the bikes are expected to get, there are other factors that should be considered, such as:

- Will the bikes be used primarily off-road or on-road?
- Will the bikes be used at night?
- Will the bikes be used in any adverse weather conditions?
- Will each bike be issued to one specific person, or will they be shared?
- Who will be assigned to bike patrol?
- Who will be responsible for maintaining the bikes?

Once you have assessed your needs and considered the composition of your bike unit, it is time to start shopping.

All Work and a Little Play

When purchasing a mountain bike for a public safety agency, remember that it will be a work bike, not a recreational bike. It is as important to choose a bike that can stand up to the demands of emergency work as it is to choose a motor vehicle designed for this purpose. An entry-level mountain bike from a department or "big box" store is not made with this purpose in mind. It will not withstand the rigors of bike patrol for very long. These bikes are not even as good as the lower-end bikes found in bicycle retail shops. The starting point for a public safety bike should be a mid-range bike from a reputable manufacturer – generally those that are sold through bike dealers (for a list of bike dealers and general advice on purchasing a bike, visit the National Bicycle Dealers Association at www.nbda.com.) In this article, "mid-range" refers to mountain bikes whose drivetrain components are, at minimum, of the Shimano brand Deore level or the Sram brand 7.0 or X-7. These bikes usually have a retail price tag that starts around $600 U.S. and goes up from there. Examples include the Trek 6500, 6700, Trek Police Bike, the Smith & Wesson Tactical model, Fuji Outland, Fuji Police Special, Giant Iguana, Giant Reign, and others.

All of the above-mentioned bicycle manufacturers – and others – produce public safety specific models. For the most part, these can be good buys because, after many years of feedback from bike cops and medics, the manufacturers have equipped them with the most commonly requested accessories. These include rear racks and bags, rear-mount kickstands, bar ends, water bottle cages, etc. The package price tends to be a little bit lower than if you bought everything separately. Of course, if the items are not needed (as determined by the needs assessment), the package ceases to be a bargain. If the public safety model does not meet your needs, or if you would like a brand that does not offer one, it is possible to "spec" your own bike. Most mid-range bikes can be set up with components and accessories to fit your needs.

Components

When shopping for a public safety bike – either one that is sold as a package or one that you intend to equip – if your budget allows, look for a bicycle that has above average components.

As mentioned above, the components of the bicycle should start with something in the mid-range of component groups. "Components" refers to the mechanical parts of the bicycle, including the drivetrain, cranks, derailleurs, shifters, and brakes. Many of these components will probably be Shimano brand. Shimano offers several different levels of mountain bike component groups. The Deore group is in the middle of the Shimano product line, and no public safety bike should be equipped with anything less. Deore LX and Deore XT are the next steps up the product line. Although I normally recommend that department buyers first look at bicycles equipped with Deore components, if the bicycles are to be used full-time, LX and XT parts should be considered. Some bicycles are equipped with Sram components instead of Shimano. Again, the minimum Sram components should be 7.0 or X-7. Although not as familiar a name as Shimano, the Sram brand is well-respected in the industry, and they also offer higher-end components for heavily used bikes.

Brakes are a very critical item – skimping here is not a good idea. Most mountain bikes come equipped with "V-brakes," which are inexpensive but work very well. Disc brakes are the latest in braking technology, and numerous models now come equipped with disc brakes standard. There are many good quality disc brakes out there. Shimano's Deore disc brakes work very well and are affordable, and I've been impressed with the performance of the Avid disc brakes. Disc brakes are available in both hydraulic and line pull models. I prefer the line pull models as it is easier to repair them on the street if necessary.

Suspended Animation

Most mountain bikes today come equipped with front suspension. A bike with front suspension only is sometimes referred to as a "hard-tail." A bike with both front and rear suspension is generally called a dual suspension or full suspension bike. In most instances, a full suspension bicycle is not required for public safety use. A good quality hard-tail that fits the rider will normally be a much better buy.

A good suspension fork can really help relieve the fatigue that a bike officer or medic will experience in their hands, wrists, arms, and shoulders while riding the bike for a full shift. This is an instance in which who is riding the bike comes into play; the suspension fork must be adequate to support the weight of the rider. A rider who weighs more than 200 lbs (not uncommon for a fully-equipped bike cop or a fully-loaded EMS bike) will most likely "bottom out" an entry-level suspension fork. Similarly, a high-end cross country racing fork (such as a Rock Shok SID model) will be so lightweight that it may flex laterally under pressure, causing steering problems. This is an area to consider upgrading from the standard fork that comes equipped on the stock mountain bike. Most suspension fork manufacturers make heavier forks and components for "Clydesdales" (riders who weigh more than 200 lbs), and these can be ideal for public safety use. Some manufacturers make a public safety version of their regular suspension fork, such as Answer Products, which sells the public safety "Black." This is a good example of a stiff suspension that will support a heavier rider.

The Frame

Frames come in a variety of metals, including aluminum, chrome-oly steel, titanium and carbon fiber. The pros and cons of each type are hotly debated by all kinds of bicycle enthusiasts, but most public safety cyclists agree

that the ideal frame is sturdy yet lightweight, and not too expensive. Most public safety models on the market today are constructed of aluminum because it meets all those criteria.

Just as important as material, if not more so, is bike fit. The key component in bike fit is frame size, so once you have decided which brand and type of bike to buy, be sure to consider the size of the riders. If a bike does not properly fit the rider, injury is a strong possibility. Health-related risks of riding a bike that is too small or too large include knee injuries, back pain, arm and wrist pain, etc. If you plan to have several riders sharing the same bike, consider grouping your personnel by size and buying bikes accordingly. And then, assign their shifts so no rider is stuck with a bike that is either way too big or way too small. If you live in the ideal world, fit each of your riders to his or her bike at the shop, before you purchase your fleet. This can save your department lots of headaches in the future.

Accessories

As mentioned above, most public safety models offered by bike manufacturers come with everything you need to "drive it off the lot." A great deal of research has gone into determining how best to equip a bike for public safety use. Whether looking at packages or buying your own accessories, when purchasing items such as racks, bags, and light systems, look for items that are heavy-duty and able to take a lot of wear and abuse. If you buy the cheapest item available, chances are you will be back to buy another sometime soon.

All public safety bikes should be equipped with pedal retention devices (toe cages or clipless), saddles designed to reduce pressure (this is largely a matter of personal preference), and puncture resistant tires mounted on sturdy wheels. If the bike is to be used for night patrol, it should have suitable lights – a steady or flashing red rear light, and a headlamp (that is, a light whose purpose is to light the rider's way) that produces at least 42 lumens measured at a distance of 10 feet from the light, and nine lumens when measured 20 feet from the light. Most bikes will also need a rear rack (EMS riders might want to find a heavy-duty rack due to the extra weight they will carry), a rear trunk bag, and a rear-mount kickstand. Finally, is it advisable to install a siren? Consult your needs assessment (and your local vehicle code) for the answer!

Conclusion

Buying a bike for public safety use seems like a daunting task, but you do not have to do it alone. This issue of *IPMBA News* includes reviews of nine different public safety model bicycles. These are not the only nine bikes on the market, nor are they necessarily the best bikes on the market. They just happen to be nine bikes liked by your fellow members. Remember the lesson from Community Policing 101, and that the best bike for your agency is the one that best suits your agency's needs.

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