



IPMBA

International Police Mountain Bike Association

Board Position Letter Concerning Large Diameter Wheels 08/18/2009

On February 28, 2008, the IPMBA Board of Directors issued a Position Letter regarding the use of large diameter wheels by public safety cyclists. The Position Letter identified a number of potential disadvantages for large diameter mountain bike wheels (27.5 inch- or 650b-sized, and 29 inch- or 700c-sized wheels) as compared to the standard twenty-six inch wheel. At that time, the Board declined to allow the use of the larger wheels in IPMBA-sponsored training courses and events.

After further research and evaluation, the Board has modified its position on the use of large-diameter wheels on duty and during IPMBA-sponsored training courses and events. After reexamining each of the disadvantages listed in the Position Letter, the IPMBA Board has determined that many of the limitations have been overcome. The updated information appears below in *italics*.

- The mountain bike geometry and design of the 29er is affected by the larger wheel size, so that the wheel takes more room, forcing the angles of the bike frame to change. *While the geometry of the 29er has been affected by the larger wheel size, many of the more reputable manufacturers of 29er frames seem to have minimized any discernible negative factors related to the safe operation of a 29er bicycle.*
- The higher bottom bracket results in a higher center of gravity, and therefore less balance and control. *The 29er bicycles that have been evaluated do not exhibit this feature and riders do not appear to experience any balance or control issues related to a higher center of gravity.*
- The top tube is higher, providing less stand-over room. *None of the current research supports this. The 29er bicycles used in testing provided ample stand-over room.*
- Smaller riders may experience an overlap between the front wheel and the forward pedaling foot, which can result in a safety issue. *The current research shows that manufacturers have addressed this safety issue by adjusting the frame/fork angles to minimize or remove any overlap between the front wheel and the forward pedaling foot.*
- The geometry of the 29er positions the rider more forward than a “standard” mountain bike, which inhibits smaller riders from shifting their weight back to allow for more front end control. *None of the current research supports this; however, smaller riders may still need to compensate for this position in some situations, as described in the next point.*



- While a 29er will “float” over obstacles, it requires greater skill to un-weight and loft the heavier front end of the 29er, which could be problematic when negotiating stair ascents. *This still appears to be an area of concern, but mainly for smaller and less experienced riders. Those with less strength and mass to time the pedal stroke with body lean may experience difficulty lofting a heavier and larger front wheel. The different riding position on a 29er may exacerbate the problem. Effective instruction of lofting technique and bike fit may overcome some of these factors.*
- The 29er wheel does not offer the lateral strength or the strength to carry heavy loads that the 26-inch wheel does. This has critical implications for those who carry heavy loads in panniers and subject their bikes to extreme stress. *Current research contradicts this. Reviews indicate the materials and manufacture of 29er wheels have advanced, and that resistance to lateral stress has been increased. Note: 29er wheels that feature the same lateral strength as twenty-six inch wheels may be heavier and more difficult to loft. The buyer should ensure that the 29-inch wheel is of high enough quality to ensure its strength; however, this may equate to a more expensive wheel.*
- The longer wheelbase of the 29er can make it more difficult for basic course students to complete the Slow Box maneuver, potentially setting the student up for difficulties and/or failure. *A videotaped demonstration of this exercise by Baton Rouge, LA, public safety cyclists was reviewed by the IPMBA Board at the 2009 IPMBA Conference. The video depicted cyclists of various sizes and experience levels, successfully negotiating the 9-foot Slow Box while riding 29ers. Still, much of the research indicates 29ers may be less nimble in tight, technical situations (especially for smaller riders) than their twenty-six inch wheeled counterparts.*
- While the industry has provided greater availability of 29er parts for the consumer, finding parts is still a consideration in remote areas. *The availability of 29er parts seems to have increased with the increased popularity of 29er bicycles. However, 29er-specific suspension forks may not be as readily available as suspension forks for twenty-six inch wheeled bikes. This is likely to change if the popularity of the 29er continues to increase.*

After reviewing the current state of the technology relative to the needs of public safety cyclists, IPMBA will allow using the larger diameter wheels in all courses and IPMBA-sponsored courses/events, with the following provisions:

- When conducting any course with riding drills, it remains the responsibility of each IPMBA instructor to ensure that his or her students are equipped with high-quality mountain bikes, properly fit to the rider, and to evaluate the safety of the bikes prior to the start of riding in each course. The instructor should refer to the IPMBA ITK for further instruction on Bike Fit (Skill Station 2) and allow time for screening and sizing student bikes in the applicable course schedule.



- It remains the responsibility of the instructor to familiarize him/herself with the 29er and its advantages, limitations, and the way it affects riding skills. If an instructor has little or no experience with the 29er, it may be difficult to diagnose and correct rider error and assist students in overcoming problems. In some instances, it may be advisable for the student to practice a technique on a standard twenty-six inch wheel bicycle and then transfer the skills to the 29er.
- It remains the responsibility of each instructor to ensure that each rider masters the “lofting” technique for ascending curbs and stairs (police/security only) and for ensuring that riders are able to handle their bikes competently in tight, technical situations. In some situations, twenty-six inch wheels may be more appropriate for less experienced and smaller riders.

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