

ipmba



news

NEWSLETTER OF THE INTERNATIONAL POLICE MOUNTAIN BIKE ASSOCIATION

IPMBA: PROMOTING AND ADVOCATING EDUCATION AND ORGANIZATION FOR PUBLIC SAFETY BICYCLISTS.

VOL. 28, No. 1

Some Ride to Remember; Some Ride to Forget

by Maureen Becker
Executive Director

The last issue of *IPMBA News* contained some sobering statistics and articles, not only about suicides among public safety personnel, but also among our own membership. It was a challenging issue to write in many respects, not the least of which was not knowing how you, the reader, would react to such a sensitive subject. Most of us know – or suspect we know – someone who has taken his or her own life.

The reaction from our members was gratifying. Many emailed to thank me for acknowledging the “elephant in the room”. Others expressed their appreciation for the resource page dedicated to suicide prevention and awareness that we have added to the website. One person took me aside during the IPMBA Conference in Fort Worth and simply said, “thank you.” That spoke volumes.

As if that weren’t rewarding enough, IPMBA Instructor Allen Daniels engaged me in conversation during the competition. I had received an email from him in late February that referenced a workshop for 2020. Focused on 2019, I set it aside. I wish I hadn’t. As it turns out, Allen has been diagnosed with PTSD related to having engaged in search and rescue operations at the Pentagon on 9/11. It was triggered by his return to Washington for a reunion with his unit members in September 2018.

Allen has the good fortune to work in a supportive environment. Rather than being told to “suck it up, buttercup”, he was given access to therapies and treatments often not available to members of the public safety community. As an avid cyclist, he found himself gravitating to his bicycle for comfort and to “ground” himself. His decision to ride on- or off-road is governed by a seemingly simple tenet: Ride on the road to remember. Ride in the forest to forget.

Riding on the open road enables him to focus on breathing, cadence, and surroundings; the very definition of “mindfulness”. Thoughts flow in and out as the miles fly by. The mind engages in a dialogue with itself, often leading to clarity of vision. Riding in the woods requires more concentration on the trail, the surroundings, and body positioning. It forces everything but survival in the moment – including demons – to the side. Both forms of riding release adrenaline that might otherwise be stored as negative emotional energy.

Allen will be offering a workshop about his experience dealing with his PTSD, both through traditional therapies and riding. He envisions it as a two-part session: a classroom discussion followed by a mindfulness ride.

If you are planning to attend the 2020 Conference and are open to sharing stories about the traumatic situations that you have faced, the support you have received (or would like to receive), and the coping mechanisms you have adopted, or you just want to talk, please contact Allen at adaniels@bowdoin.edu or 207-208-7174.

IPMBA 2020: June 1-6, 2020, in Dayton, Ohio. It is time to let the elephant out of the room.

CAF Meets IPMBA: From Bicycles to Warbirds

by David Cohen
Maryland National Capital Park Police Reserve Unit

Since joining IPMBA in 2007, I have submitted quite a few articles. The one thing I get asked about even more than the content of any of the articles is my “About the Author” blurb, which indicates that I restore World War II era aircraft: how I came to be involved in such an enterprise.

By the winter of 2011–2012, I had become quite adept at restoring old bicycles. Working on bicycles was always fun to me, but it was also starting to get to be old hat. I was looking for another challenge. Ever since I was a young boy, World War II aviation has fascinated me, and when I learned about the Warbird movement – people who actually restore and fly these aircraft – I knew it was something that I wanted to do.

I was aware of an operation somewhat near me that was restoring a TBM Avenger, a World War II carrier based torpedo bomber. I found one of the contacts online and asked if I could

(Continued on page 38)

inside

Board of Directors	34
Corporate Members	24
Gears and Gadgets	27-28
Instructor Corner	35
Issue Focus: The Product Guide	5-24
Airo Bike Saddle	18
CABDA Heads West	11
Evolution of a Cyclist	13
Improving Officers’ Health	19
Product Purchase Program	21-23
Reports from Interbike 2018.....	5-10
Good-Bye, Old Friend.....	5
My First and Last	7
Well-Worth It.....	9
RZ Mask.....	15
Shimano SH-GR7	17
Member News.....	29-34
President’s Column	2-3

New Year's Resolutions:



One of the most time-honored traditions is making New Year's resolutions at the dawn of a new year. Webster's defines the making of a New Year's Resolution as a "tradition in which a person resolves to change an undesired trait or behavior, accomplish a personal goal, or otherwise improve their life." So how does this apply to IPMBA?

The IPMBA New Year's Resolution can be described as a "tradition in which a member resolves to change an undesired trait or behavior, accomplish a personal goal or otherwise improve IPMBA." The top five resolutions that can improve IPMBA (and you) year-round are:

Maintain your Membership. Even if your department does not cover this expense, invest in your professional growth and development and join or renew your membership.

Become an Active Member. So, you've done #1 above, now what? Think of your membership as being more than a requirement for your job. Don't sit idly by, passively reading the *IPMBA News*! Instead, become a contributing member. As an IPMBA member, you are part of a family of 3,000 like-minded individuals throughout the United States and beyond. The easiest things to do are to follow IPMBA on social media and like, comment, and share posts. Up the ante by writing an article for the *IPMBA News*, write a product review (contact Maureen at info@ipmba.org for guidelines), or join and actively participate in an IPMBA Committee or Task Force. As with any relationship, what you get out of it reflects what you put into it.

Attend the Annual Conference. IPMBA was founded with an annual conference at its core. This is a time and place where like-minded folks can come together, learn, train, instruct, and network. Since the beginning, this has been a "bring all of your stuff" conference, because you are going to put it to use. One of the factors that has made the conference such a success is the fact that you do not spend it sitting in a conference hall or classroom.

It was – and continues to be – a hands-on event. You actually practice what you are being taught. It is also the "Main Event" of the year. A majority of the board's time is spent preparing for and conducting this live event for the benefit of the attendees. Certain IPMBA certification courses are only offered at the annual conference. These certification courses add value to your resume and what you bring back to your department. Call it a "deliverable" for your leadership.



WE WANT YOU TO BE AN ACTIVE IPMBA MEMBER!

There are also amazing networking opportunities. The nature of our jobs often puts us in a silo. Too often we become complacent, which translates into our job performance. There is a value in learning how things are done in other areas and how other departments have dealt with the same problems you are facing. The ability to share training guidelines, policies, funding streams, and validate your tactics and program is invaluable to the sustainability of your bike team/unit. The bottom line, it is a big deal and if you miss it, you are missing out!

Practice the Fundamental Public Safety Cycling Skills.

Too often we become busy and take the basic skills for granted. Time is valuable, so why spend it on something you've already accomplished, right? It is this mindset that sets most up for failure. As a Public Safety Cyclist, it is easy to get caught up in doing the job.

Before you know it, you've worked several shifts or events without utilizing many of the skills you had to master to achieve the certification. So you grow complacent. Fast forward ahead in your career, and now you want to become an IPMBA Instructor. The inability to demonstrate a mastery of the basic skills and knowledge is the downfall of nearly everyone who goes home on day two of the Instructor Course. Make it a point to practice your basic skills during every shift or event you work.

Negotiate urban obstacles in the park, tackle the built environment in an urban area, or ride the box in your standard parking space. Never pass up an opportunity to develop your skills and technique as a cyclist.

Challenge Yourself. Have you taken any advanced level public safety cyclist training? Have you ventured out beyond your basic cyclist certification? Unfortunately, few departments place a high value on advanced certification courses as requirements for advancing within the team/unit. Did you stop at the basic Police, EMS, or Security Cyclist level, or have you driven yourself to advanced training? Do you buy into the misguided notion that once you are an instructor, there is nothing more you can learn? I hope not. The Duke of Wellington claimed, "No man fears to do that which he knows he does well." Challenge yourself to learn more, to do more, and to do it well, for the day may come when your life, or the life of another, depends on it!

Studies show that 60% of us make New Year's Resolutions, but only 8% of us achieve them. The majority fail before January 31st. If you are still reading this, you are already ahead of the game.

To be successful, you should use a technique used in writing learning objectives as part of a lesson plan. Use the process of being SMART: specific, measurable, achievable, relevant and time-bound.

An Ongoing Commitment

PRESIDENT'S COLUMN

- ▶ **Specific.** Your resolution should be absolutely clear. Setting concrete goals is more important than just vaguely saying, "I want to ride 300 miles in the Police Unity Tour or EMS Memorial Ride." You need to have solid goals. How far do you want to ride, and at what time interval? Setting a goal of twenty miles twice a week in the next two months followed by 30 miles three times a week one month out will be more effective.
- ▶ **Measurable.** This may seem obvious if your goal is related to fitness or weight loss. Being able to track your progress over time shows your success. A lot of little accomplishments will lead to the larger main goal. Logging progress into a journal, making notes on your phone or engaging an app designed to help you track behaviors can reinforce the progress, no matter what your resolution may be.
- ▶ **Achievable.** This doesn't mean that you can't have "big stretch" goals. But trying to take too big of a step too fast can leave you frustrated, or affect other areas of your life to the point that your resolution takes over your life, causing you, your friends, and/or your family to flail.
- ▶ **Relevant.** Is this a goal that really matters to you, and are you setting it for the right reasons? "If you do it out of a sense of self-hate or remorse or a strong

passion in the moment, it doesn't usually last long," said Dr. Michael Bennett, a psychiatrist and co-author of two self-help books. "But if you build up a process where you're thinking harder about what's good for you, you're changing the structure of your life, and you're bringing people into your life who will reinforce that resolution, I think you have a fighting chance."

- ▶ **Time-Bound.** Like setting achievable goals, the timeline toward reaching your goal should be realistic. That means allowing yourself enough time to do it with lots of smaller, intermediate goals set up along the way. Start with your membership renewal. Mark it on your calendar and relish the fact that it will make your conference fees less expensive and because you are part of a larger community. Every shift, check yourself on two basic cycling skills and progress to a re-read of the *Complete Guide*. Annually make it a point to re-take the basic written test as part of your training regimen. These are all small battle victories towards the goal of winning the war.

January 2019 is behind us, but it is never too late to start. If you can accomplish these five resolutions, you will likely achieve some of the more common resolutions we often fail to accomplish. You can count on your 3,000 fellow IPMBA members to help you achieve these resolutions.



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PRODUCT GUIDE 2019

Welcome to the 17th Annual IPMBA Product Guide. This issue of *IPMBA News* is all about highlighting products and services designed to enhance your safety and effectiveness, both on- and off-the-job. It features reports from the now-defunct Interbike and the emerging CABDA, product reviews, musings about changes in technology, research results, and the updated Product Purchase Program. It celebrates one new Corporate Member – GeoOrbital Wheels – and one returning after an absence of several years – Trek Bicycle Corporation. It is the hope of the authors and contributors that you will find inspiration in these pages, not only to support the companies listed within, but to go forth and bring new suppliers into the fold. *Pages 5-24.*

Interbike 2018: Goodbye, Old Friend!

by Clint Sandusky, former PCI #849/EMSCI #159
Riverside (CA) Community College District Police
Department (ret.)



Entrance to 2018 Interbike Show

In its heyday, Interbike was “the” bicycle trade show and outdoor demo to go to in North America, attracting manufacturers, retailers, inventors, designers, and more. It was a great place to learn about the coming year’s new product lines and to maintain and/or create relationships within the bicycle industry. However, it may be time to say, **“Goodbye, Old Friend.”**

A press release posted on Interbike’s website on December 6, 2018, stated: “Interbike owner, Emerald Expositions, announced today that the Interbike tradeshow will not take place

in September 2019 in Reno as previously scheduled. Instead, the company will research alternative plans for 2020 and beyond, including the opportunity to launch events featuring bicycling and bike-related components within or alongside its various successful, multi-sport trade show franchises.”

Under “About Interbike” it read: “Established in 1982, Interbike has been the leading bicycle trade event in North America, bringing together manufacturers, retailers, industry advocates, distributors and media to conduct the business of cycling. Interbike and its events have provided an important platform for face-to-face business interaction, product line previews and media launches, sales lead generation, trend setting, networking and retail education. Interbike is owned by Emerald Expositions, a leading operator of business-to-business trade shows in the United States.”

In a *VeloNews* article entitled, “Interbike is dead. Now what?” (December 18, 2018), the author noted, “Numerous factors and changing dynamics contributed to Interbike’s death: the shrinking number of American retailers, big brands launching their own dealer camps, and the rise of e-commerce, among other things.”

The author went on to say, “Pivot and other brands are looking to regional bike shows as a way to reach retailers. Cocalis plans to attend the Chicagoland Area Bike Dealers Association (CABDA) show. CABDA holds its Chicago event in February and will launch a second event in San Diego this January.” This may be the future of bicycle trade shows in the U.S. [Ed.s’ Note: see *CABDA* article, page 11 of this issue.]

My hope and the hope of others is that Interbike can somehow reinvent itself and return in 2020 or beyond. A January 17, 2019, posting on *Bicycle Retailer and Industry News* announced that Emerald Expositions is considering adding a bicycle component to one or more of the Outdoor Retailer shows, which are also operated by Emerald. At press time, the Outdoor Retailer website indicates that bikes will be coming to the Winter Market, to be held in Denver in November.

On a personal note, I have enjoyed every Interbike show I’ve attended over the years. Seeing all the new and cool stuff was a blast. I also learned a lot from presentations such as the e-Bike ones conducted by BOSCH eBike Systems and PeopleforBikes.

But the relational aspect of attending Interbike with friends, meeting up with California POST and IPMBA

(Continued on page 6)



Clint, Jason Bain, and Jared Williams at Interbike 2017

(Continued from page 5)

instructors, and nurturing and establishing new relationships with exhibitors were the most important reasons I attended.

Everyone who has attended multiple Interbike shows will tell you that the 2018 show in Reno was much smaller than in recent years, when it was held at the Mandalay Bay Convention Center in Las Vegas, NV. Aaron Roesler of American Bike Patrol Services (an IPMBA Corporate Member), said of the 2018 Show, “you could roll a bowling ball from one end to the other,” comparatively speaking.

In my opinion, the best part of this year’s Interbike was the Outdoor Demo. It was truly a FANTASTIC way to highlight mountain bikes of all makes and models, including e-MTBs. It was held over three days at the very popular Northstar California Resort and Village, in beautiful Lake Tahoe, and included the Northstar Free-Ride Festival for the public.

As part of the festival, an e-MTB race known as the

“Boogaloo Class One Electric Mountain Bike Race” was held at Northstar California’s Bike Park. Race categories included Pro, Open, and Youth. It was my second e-MTB race of the season, and it did not go well.

However, the race experience was invaluable for me, both as an e-Bike enthusiast and a member of IPMBA’s e-Bike Task Force.

COPSWEST 2018

So you think that was the ONLY fun I had on this trip up north?

NEGATIVE. Prior to attending Interbike, I had the honor of assisting IPMBA Board Member Mike Wear at the 2018 COPSWEST Expo, held in Sacramento, capital of the State of California. We staffed the IPMBA Booth and had the opportunity to do some bike patrol demos during the Expo. Of course, I used my police model e-MTB to highlight and



Mike Wear and Clint at COPSWEST 2018

demonstrate its use and effectiveness as a patrol tool!

Mike and I spoke with and promoted IPMBA to numerous attendees. We even had a long conversation with a top California POST representative, who attended one of our demos. He appeared genuinely interested in IPMBA and the e-Bike as a patrol tool. Will IPMBA become more accepted and taught in California in the future? We all hope so.

The COPSWEST Expo generated some excitement and controversy, attracting a crowd demonstrating over a past Sacramento Police Department OIS. It was cool to see the Sacramento Police “BIRT” (which includes several IPMBA Instructors) in action, helping to protect all us exhibitors and attendees. Great job, Sac City PD!

Clint retired in 2016 after a 24-year law enforcement career with the Los Angeles County Sheriff's and the Riverside Community College District Police Departments. He helped form RCCD PD's Bike Team in 1993 and has been an active California POST Bike Patrol Instructor since 1994. Clint has attended numerous bicycle patrol and bicycle safety courses, seminars, and conferences. He joined IPMBA in 1994, completed the Advanced Police Cyclist Course in 2000, and the IPMBA Instructor Course in 2005. He taught at the 2006, 2007 and 2018 IPMBA Conferences. He is currently a member of IPMBA's e-Bike Task Force. He can be reached at clint.sandusky@gmail.com.

Photos courtesy Clint Sandusky.



Clint readies for the e-MTB Race

Interbike 2018: My First and Last

by Scott Bixby, PCI #1684

NY State University Police, University at Buffalo

[Ed.'s Note: This article was written prior to the announcement by Emerald Expositions that Interbike, in its current format, would be discontinued.]

If you don't know me, trust me when I tell you that I'm a mountain bike fanatic. In mid-August, when IPMBA Industry Liaison James Englert called and asked if I wanted to attend Interbike 2018 in Reno, Nevada, on behalf of IPMBA, I struggled to contain my excitement as I nonchalantly replied, "yeah, I might be interested in attending." I'm fairly certain James saw right through my feigned indifference!

If you aren't familiar with Interbike, it's probably the largest bicycle trade show in the United States. Since 1992, it has been a chance for the bicycle industry as a whole to showcase all their new products for the coming year to dealers and other industry insiders. In other words, "bicycle nirvana" for a fanatic such as myself.

If you're paying attention to the industry, you've probably heard that Interbike is declining in attendance and relevance so I was really excited to be able to attend before the show went away completely. As it turns out, the end was closer than I expected. As I was writing this article, the owners of Interbike announced that the 2019 show had been cancelled. I doubt we'll see another Interbike in the future, but I'll talk about that later on in this report.

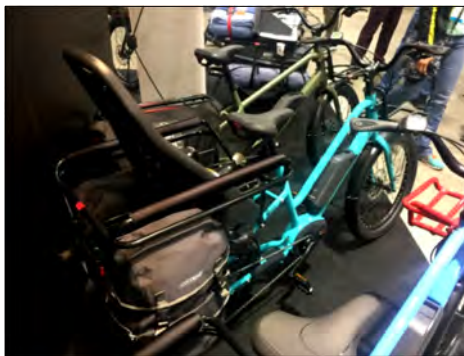
Interbike is too big for one person to cover, so I met up with IPMBA Board Member and Conference Coordinator Brian Gillman in Reno. We made a plan to work together to say hello to past and present IPMBA Corporate Partners and the companies that support the IPMBA Product Purchase Program. We also had some assignments from IPMBA Executive Director Maureen Becker, so it was a very busy two days for both of us!

Before I delve into the products I consider relevant to bike patrol, let me say that if you aren't convinced that e-Bikes are literally exploding in the bicycle industry, you only needed to walk through the front door of the Reno Conference Center. There you were greeted with a sign reading "Interbike

2018 sponsored by Yamaha Power Assist Bicycles". In fact, the more I walked around, the more convinced I became that the name of the show should have been "Inter-E-Bike".

To be clear, I don't hate e-Bikes. I've ridden several, and they are fun. And I certainly understand how useful they can be in public safety operations. The fact is, they dominated Interbike 2018. There was an outdoor test ride area, and it was hard to find a bike that didn't have an electric motor. And one whole wing of the conference center was occupied by Asian companies with very similar sounding names displaying their latest and greatest motors, controllers and batteries.

If you need to haul kids to day care and soccer practice, there is an e-Bike for you!



If you're into bike-packing but just can't manage without a Yeti cooler and propane grill, there is an e-Bike for you, too!



As I mentioned, the test bikes available at the outdoor test track were predominantly e-Bikes. I probably did one hundred laps of the track on this Mondraker Crafty. There were a couple of small jumps so I lowered the dropper and hit them over and over and over! I borrowed the bike from the Bosch tent and fully expected them to come pull me off the track at some point.



Back to the task of identifying products specific to public safety operations, here's what I found.

KHS Bicycles had a large booth set up and inside the display I found this K9 Police model.



I spoke at length about the bike with a KHS representative. I misplaced his business card, so I apologize for not recalling his name, but he was heavily involved with specifying the components. The bike is nicely equipped with 1 x 11 Shimano drivetrain, 27.5+ wheels, and a rear rack and bag. The bike is on their website here <https://khsbicycles.com/bikes/2019-khs-models/k9-19/>.

If you are interested in this bike, I recommend that you

(Continued on page 8)

Interbike 2018: My First and Last

(Continued from page 7)

contact KHS for clarification on some details. Specifically, they list a 42-tooth Shimano 10-speed cassette. If you know Shimano, you know that 42-tooth is only available on their 11-speed group. That's what I saw on the model sitting on the floor in Reno.

Their website also lists "141 Boost". I'm thoroughly confused as Boost is normally associated with 148 mm drop-out spacing and a 12 mm thru axle. That's definitely a quick release skewer in my photo and on their website photo. MSRP was \$999 or \$1099 depending on options selected.

Haro Bikes also had a large display that included the 2019 PD4.



That's all the public safety-specific bikes I could find. However, I did see this custom e-Bike from the Laguna Beach Fire Department.



And I tried to convince my boss that I needed this \$9999 Pivot Shuttle to patrol the more rugged areas of our campuses but he (literally) wasn't buying!



Similar to the KHS, the Haro has 27.5" wheels but smaller 27.5 x 2.0 tires with reflective sidewalls. The Haro comes with a mix of Shimano XT and SLX drivetrain parts and a large range 11-46 cassette. That should be plenty of gear range for all but the most vertically challenging locales! MSRP is \$1299 and you can find all the specifications here: <https://harombt.com/collections/police-bikes/products/pd4-2019>.

I said hello to several IPMBA friends and supporters including Volcanic Bikes, ISM Saddles, Bar Mitts, Kenda USA, SockGuy, Cygolite, and NuGo Nutrition. But after two days of walking around, I really couldn't find anything else that I found ground-breaking or interesting.

That's a perfect segue into a brief discussion about the demise of Interbike. As I mentioned previously, in

the first week of December, Interbike owner Emerald Expositions announced that they were cancelling the 2019 show. This article published on Pinkbike (<https://www.pinkbike.com/news/rest-in-peace-the-rise-and-fall-of-interbike-expo.html>) lays it all out there, but just as MTV claimed that "video killed the radio star" in the early '80's, social media killed the bicycle industry trade show.

For all the reasons mentioned in the Pinkbike article, I don't believe that we'll see Interbike return. Technology has changed the way businesses interact with their customers and that relationship is rapidly evolving. Unfortunately, the "fly away" industry trade show is a great idea whose time has passed.

I'm thankful to James and Maureen and IPMBA for giving me the opportunity to attend Interbike.

Thanks for reading. As always, if you want to talk bikes, shoot me an email at scbixby@buffalo.edu. Here's to lots of bike patrol in 2019!

Scott is a Lieutenant with the New York State University Police at the University of Buffalo. He has been a member of the bike patrol unit since 2005 and currently serves as its supervisor. He has also been the lead instructor for the UB Police Bike Patrol School since 2017. Scott is an expert level mountain biker and has been riding and racing mountain bikes since 1999. He also runs a bicycle wheel building and bike repair business that can be found at www.bluelinebicyclerepair.com. He can be reached at scbixby@buffalo.edu.

Photos courtesy Scott Bixby.

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(Continued from page 9)

The second presentation was given by LAPD and focused on the evaluation and initial implementation of e-Bikes into their patrol fleet. The presentation covered the entire process of initial product evaluations, the RFP process, vendor selection, proposed changes, fleet testing, fleet maintenance, staff training, and staff feedback following the implementation, and evaluation of the chosen equipment. They had personnel from all phases of the process available for questions and answers.

At the conclusion of their presentation, I met with the bike training division officers for over an hour and took the opportunity to discuss the pro and cons of e-Bikes and how they adapted their standard bike training to meet the demands of the e-Bikes. On a side note, one of the officers was previously an IPMBA Instructor who attended the 2011 IPMBA Conference in Richmond with me. They were gracious enough to share details about their program, what they have learned over the last year, and how they have evolved their standard bike training program to meet the needs of the e-Bike rider. This information will be invaluable to the E-Bike Task Force as we move forward on training initiatives.

On day two of the conference, I split my time between the exhibit hall floor and the outdoor demo track. I went back to specific vendors that were either already familiar with IPMBA or those that I thought would have products our membership could use. The vendors were welcoming and open to learning

about IPMBA and the sometimes unique needs of the public safety cyclist. My primary mission was to encourage them to consider attending one of our conferences as an exhibitor and/or joining our Product Purchase Program.

Secondly, I had the opportunity to meet with many companies about potentially testing their products, so hopefully these contacts come to fruition and we can see some product reviews in the coming months. There were so many amazing products already available and some just finishing R&D which I hope to see reach the market. The final part of the day was spent doing some riding. This is where I finally rode a few versions of e-Bikes, which was an enlightening experience. Scott Bixby really took advantage of the day and rode a wider range of bikes, some of which are mentioned in his article.

In conclusion, whether you are a cycling enthusiast or not, the Interbike Expo is well worth the experience. Educational sessions, the latest products and trends, networking with top retailers and suppliers: Interbike brings it all together under one roof.

Brian has more than 20 years' experience as a field paramedic and Fire/EMS dispatcher with Cypress Creek EMS in Spring, Texas. He is the logistics coordinator for the CCEMS Bike Team and has been active on the team since 2005. He has been an IPMBA Instructor since 2007, a maintenance officer since 2008, and teaches 2-3 IPMBA Courses annually. He was elected to the IPMBA Board in 2014 and has held the positions of Membership and EMS Coordinator. He currently serves as Conference Coordinator. He can be reached at bgillman@ccems.com.



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by **Clint Sandusky**, former PCI #849/EMSCI #159
Riverside (CA) Community College District Police Dept. (ret.)



For those of you who do not know what “CABDA” stands for (as I did not, until recently), it is “Chicagoland Area Bike Dealers Association”, though as they expand beyond the Chicago area, they are branding themselves as just CABDA.

Having attended Interbike on a number of occasions, I was intrigued by the idea of a smaller, regional bicycle retailer trade show. I knew I had to go, and I thank Aaron Roesler of American Bike Patrol Services (an IPMBA Corporate Member) for getting me a ticket. I do occasionally help him teach security bike patrol classes.

The show was held January 16-17, 2019, in Del Mar, California, not far from San Diego. It only took me a little more than two hours, even in the heavy rain, to get there. Yes, SoCal gets rain.

I was pleasantly surprised there was NO fee to park at the Del Mar Thoroughbred Club Racetrack. That was the first plus. The second plus was the intimate and relaxed setting of the show, which was contained within a single exhibit hall. However, I heard they hope to expand the show next year, when it returns to the San Diego area.

This smaller format allowed me to spend more time one-on-one and in informative conversations with the exhibitors I selected, such as:

- ▶ Bosch eBike Systems
- ▶ Bulls Bikes
- ▶ CABDA
- ▶ Chamois Butt'r
- ▶ KHS Bicycles
- ▶ NiteRider
- ▶ PeopleForBikes
- ▶ Serfas

Overall, I preferred the smaller show to the expanse, expense and time commitment of Interbike. I do believe these smaller, regional shows are the future for the bicycle industry trade show. As with anything in today’s society, adapting to changing trends and needs, social media and financial demands is crucial. I would recommend this show to anyone with an interest in tracking the cycling industry. CABDA also features a Midwest show in the Chicago area, and has since its relaunch in 2015. Visit www.cabda.com for details.

From the standpoint of public safety cycling, both NiteRider and Serfas have made updates to their public safety bicycle lighting systems. And interestingly to me, it did not seem

like e-Bikes dominated the show as they have in recent years at Interbike. I took the opportunity to discuss the role of e-Bikes in public safety with representatives of both CABDA and PeopleForBikes. I provided CABDA Director Jim Kersten with a proposal to present a workshop for retailers next year on “Selling e-Bikes to Law Enforcement: Understanding their Unique Needs.” He was very interested in it for next year.

For a glimpse of the CABDA West experience (with an e-Bike slant), check out this video from Electric Bike Review: <https://youtu.be/dSJJsQ2CddQ>.

Clint retired in 2016 after a 24-year law enforcement career with the Los Angeles County Sheriff's and the Riverside Community College District Police Departments. He helped form RCCD PD's Bike Team in 1993 and has been an active California POST Bike Patrol Instructor since 1994. Clint has attended numerous bicycle patrol and bicycle safety courses, seminars, and conferences, and continues to do so. He joined IPMBA in 1994, completed the Advanced Police Cyclist Course in 2000, and the IPMBA Instructor Course in 2005. He taught at the 2006, 2007 and 2018 IPMBA Conferences. He is currently a member of IPMBA's e-Bike Task Force. He can be reached at clint.sandusky@gmail.com.

Photo courtesy Clint Sandusky.

Upcoming CABDA Shows

- ▶ CABDA Rockies – October 2019 – Denver Metro
- ▶ CABDA West – January 15-16, 2020 – Del Mar Racetrack, San Diego Metro
- ▶ CABDA Central – February 12-13, 2020 – Schaumburg Convention Center, Chicago Metro
- ▶ CABDA East – March 11-12, 2020 – Meadowlands Expo Center, New York City Metro



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Evolution of a Cyclist: From Skeptic to Believer

by Allan Howard, PCI #001
Dayton (OH) Police Department (ret.)

Forty years ago on January 20, 1979, a documentary piece entitled “Mountain Biking” was filmed in Fairfax, California, for a local show called *Evening Magazine*. Quite literally, this was the first film/video of the predecessors of the bikes we ride today. From the very beginning, the bikes used to bomb down those old fire roads were altered for function, not form. They weren’t constricted by conventions of the past because they started with the idea of what they wanted the bikes to do rather than how they wanted them to look.

Without being tied to the way “things have always been”, they were able to drive the stodgy bicycle industry into making practical, all terrain bicycles (ATBs) that were more robust than the “traditional” svelte road bikes that were “what a bike should be”. Once the bicycle industry figured out there was a market for alternatives, the gates of the “Wild West” were opened.

Development was fast and furious – long before the movie franchise of the same name. Most of it was good, some not so bad; but there was also the bad, the ridiculous, and the downright unsafe.

Despite being a USCF road racer, I tried my best to ride everything the mountain bike industry had to offer. At first, my motivation was to prove that anything that could be done on an “ATB” or “Mountain Bike” could also be done on a road bike with cyclo-cross wheels. Early ATBs/mountain bikes were crude in comparison to what we have today, but for rough terrain and urban concrete obstacle riding, they were better than anything that had been produced before. Alas! I went in a skeptic and came out a believer. I had no idea where it would take me, and thousands of other public safety personnel, decades later.

The first innovations to our beloved mountain bikes that were truly “game-changers” were suspension and lighting. These two things were major improvements to overall safety and launched a period of product development that surpassed what the bicycle industry had experienced in the prior 100 years combined. Notice I used the word “safety” in lieu of “comfort”.

Sure, many of the new products made riding more comfortable, but when your employer is buying fleet vehicles, they aren’t interested in “comfort”; they aren’t paying you to be comfortable. Safety, however, is an outright obligation. Remember that next time you’re trying to sell someone on a new idea.

Right now, our bikes are changing again. Disc brakes (hydraulic & hybrid), thru-axles, wider rear wheel spacing, different gearing (don’t get me started on the 1x thing) and electric bikes are becoming ubiquitous. Electric bikes, in my opinion, are going to be one of those things that quickly develops into a “why didn’t we do this before?” thing. Having been here a while, I can tell you why: batteries, charging devices, and motor designs were crude and bulky. Not all of us are lucky enough to be riding around on a work bike only laden with some basic stuff in a rack bag. We have many members who have to tote heavy medical equipment, and e-Bikes are the simple and correct answer to that.

Even if you aren’t hauling heavy equipment, riding an e-Bike on patrol that will leave you fresher for a foot chase or struggle could literally save lives – civilians, officers and suspects. Heck, even recreationally, e-Bikes make sense. You can’t go any direction from where I live and not hit a hill. I’m coming into my sixth decade of living and have had to change my gearing from a straight block (one tooth changes between cogs) to wide range cassettes, despite all my training efforts. There may soon come a day where I’m riding an e-Road bike like some of the guys who are using them to cheat in bike races right now ;-). Will I get rid of my Campy-equipped Colnagos? Heck no, but nothing says you can’t have both something old and something new.

I recently took an IPMBA survey regarding e-Bikes. One of the questions was about training and whether more training should be required for e-Bikes beyond the regular P/E/S/C Course. Having ridden every e-Bike that was on display at the last conference, I gave a resounding “yes” to that question.

Unlike an internal combustion engine, electric motors produce 100% torque at one RPM. They are immediately more powerful than anything we have today. That’s why freight trains use diesel engines as electric generators to power the electric motors that actually move the train; nothing else can pull that kind of weight from a dead stop more efficiently. Because of that instantaneous power, a little more specific training is needed so we don’t have injuries to public servants or civilians. It’s an exciting time to be involved in our industry; I can’t wait to see what’s next.

With all this talk of change and progress, I have one final thought. The current

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name of the bikes we have now is “Mountain Bike”, despite the fact that many of us live hundreds, if not thousands, of miles from the nearest mountain. I’ve seen organizations go through name changes for all kinds of reasons; some good, some bad. Sometimes it nearly kills the brand. There are some very powerful

organizations with names that are clearly from the past, but people understand and accept it.

Someday, the bikes public safety personnel will be riding will be called something else. The bicycling industry will see to it because people want to buy what is new, even if it’s only a name, like “gravel bike”, for instance.

In a little more than 30 years, I’d like to see this organization still called the *International Police Mountain Bike Association*, despite the fact that our members are comprised of firefighters, paramedics, security and other public safety workers as well as “police”. This isn’t a slight to those in our organization who aren’t law enforcement officers, it is simply a nod to our history, the history of how “our” organization came into being.

By the time you read this, the 2019 IPMBA Conference will be history and we will have added another chapter to the story about what makes this organization great.

Allan

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RZ Mask

RZ Mask: Portable and Functional

by Andy Shiu
Lake Forest (IL) Police Department

Police officers need tools that are both portable and functional. There's not much room left nowadays on duty belts, in cargo pockets or on exterior body armor carriers with all of the gear we have to carry at work. There is certainly nowhere to carry a full gas mask. That's where the RZ Mask comes into play.

I've had the opportunity to utilize the RZ Mask over the past six months in several situations: at a residence where a search warrant was executed, at a death investigation scene, and during BRT Training.

The RZ mask fits perfectly into the dwindling room we have left on our bodies or in a "go bag". I carry mine in the zippered pouch (that comes with the mask) slipped behind my handcuff pouch, which is MOLLE-mounted on my outside body armor carrier. The filter and valve system while carried in the pouch is about an inch thick and isn't bulky. The mask is very comfortable and the hook / loop strap to close the mask is sturdy.

The key to the RZ Mask for me was its portability. After all, you can't use it if you don't have it, right? The first time I deployed it was at a house where a search warrant for narcotics was executed. After the scene was secure, I wore the mask to avoid inhaling substances that could be made airborne while moving through and/or searching the house.

The mask is very effective – there was a room in which cannabis had been smoked before we arrived, and it was very strong. I left the room, put on the mask, and went back inside – I could not smell it at all through the mask! I also wore the mask at a death investigation scene, which smelled plenty awful because there was feces all over the floor and the body had been there for several days. The odor was strong, almost unmanageable, even after I opened several windows to air out the condominium unit. I went outside, donned the RZ Mask, and went back inside. I was very relieved to not have to work the scene and contend with the odors at the same time. It made the next few hours I spent processing the scene much more manageable.

While wearing a full gas mask is preferred during riot control, BRT deployment or hazardous material situation, the RZ Mask is very functional for a police officer to use during day-to-day operations on patrol. It is compact and can be packed away in an evidence technician's toolkit, slipped into a cargo pocket, or mounted on an outside body armor carrier during a detective assignment. I would highly recommend this product for police use.

RZ Mask is an IPMBA Corporate Member and participates in the IPMBA Product Purchase Program, offering 20% off retail to IPMBA Members. Visit www.rzmask.com or email jim@rzmask.com for details.

Andy Shiu is an 18 year veteran of the Lake Forest (IL) police Department (IL) and is currently assigned as a detective. He is an IPMBA-certified police cyclist and Bicycle Response Team rider. He specializes in field training, defensive tactics and firearms instruction. He can be reached at shiua@cityoflakeforest.com.

Photos courtesy Andy Shiu.



RZ Mask: Meeting or Creating a Need?

by David Miniscalco
Lake Forest (IL) Police Department

After hearing about the reusable masks manufactured by IPMBA Corporate Member RZ Mask, and reading their claim of being effective for police work, I decided I would give them a trial run for a few months. My goal was to determine if there was a need for this type of mask for my daily police activities.

The representatives at RZ Mask were kind enough to send a variety of masks to evaluate during this testing period. I selected the "Hi-Flow Electrostatic + Activated Carbon" filter set in the "M1" neoprene face mask.

My first impression upon opening the face mask and filter was that they were made with high-quality materials. The face mask felt thick enough to be durable but thin enough to be folded and stowed in a pocket. The stitching was good, and the hook-and-loop pieces used to close the mask was symmetrical and seemingly durable. The dual "V1" valve system along the cheeks appeared to be sturdy and well-set within the material.

The filter itself appeared to be multi-layered and really gave an initial impression that it meant business.

The whole system folded nicely into my jacket pocket.

From February to May, I utilized the mask on a number of occasions, the majority being during car searches. The first thing I can tell you is that **this mask works**. The filters do a tremendous job removing particles from the air. In fact, it does such a good job that I had to take the mask off during a number of the searches.

The mask and filter completely removed the odor of the substance that I was attempting to locate. I often have to play "Warmer/Colder" with an illicit substance on a search. As the smell intensifies, I know I am getting closer. As it fades, I realize I may have passed it up. If the odor dissipates or persists despite the windows or doors being open, that is also an indication that particular substances are present or not.

(Continued on page 16)

(Continued from page 15)

After wearing the mask on a search, I told a co-worker that it made my nose feel "blind". I couldn't detect any characteristics of the substance I was seeking.

On one particularly frozen evening, I wore the mask for warmth as I directed traffic on an accident scene. It worked well and had the added benefit of completely removing the odor of sulfur from the flare smoke.

One thing I noticed, and this pertains to any item worn over the face, not just the RZ Mask, was an occasional muffled radio transmission. While not as bad as a full face gas mask, it is still something to consider when wearing it on scene.

Overall, I would conclude this product does exactly as it claims. It is a comfortable, reusable face mask that will filter airborne particles. Now, whether there is a place for this item in my daily police work has yet to be determined. The sense of smell is very important in many incidents, not only for arrests, but also for possible hazardous material situations. Having this sense muted or outright blocked could hinder an investigation.

Overall, I would conclude this product does exactly as it claims. It is a comfortable, reusable face mask that will filter airborne particles.

However, with so many substances having a delivery method of inhalation, it would seem having a readily available mask on patrol would be critical. That said, in many of those situations, a full-face mask that covers the eyes or perhaps even higher level personal haz-mat protective equipment would be required. The products from RZ Mask may be attempting to fill a niche in police work that does not exist, which is not to say they do not have utility for other applications.

One incident that I did not encounter during my testing was a DOA with advanced decomposition. I believe this to be one of the few situations where a readily deployable filter and mask would shine, but have been unable to confirm this.

RZ Mask is an IPMBA Corporate Member and participates in the IPMBA Product Purchase Program, offering 20% off retail to IPMBA Members. Visit www.rzmask.com or email jim@rzmask.com for details.

Dave has been a patrol officer for a small suburb in the greater Chicagoland area for the last five years. He has been part of a multi-jurisdictional emergency services team for three years and prior to his current department, he worked in corrections. His favorite color is green. He can be reached at MiniscaD@cityoflakeforest.com.

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Shimano SH-GR7: More Comfort, Less Grip

by Scott Bixby, PCI #1684
NY State University Police, University at Buffalo

If you want to quickly start an argument among bicyclists, especially those of the “mountain” persuasion, mention pedals. To speed things along, start with “(insert *flat* or *clipless* here) are so much better than (insert *flat* or *clipless* here) for mountain biking.” It’s been my experience that only the wheel size debate elicits a more passionate response from riders.

Personally, I’m a flat pedal rider, both as a mountain biker and a public safety cyclist. You may already know that if you read my 2018 *IPMBA News* review of the Pedaling Innovations Catalyst pedal. Hopefully, you’ve also read the IPMBA Position Paper regarding flat pedals issued in 2016. If you haven’t read the paper, please do.

The keys to successfully riding flat pedals are 1) quality pedals with replaceable traction pins (such as the Catalyst), and 2) a shoe designed for use with flat pedals. Flat pedal shoes will have a flat, mostly featureless sole made from a rubber compound formulated to be sticky.

Many public safety cyclists, myself included, prefer (or are required to wear) subtle black or grey shoes on-duty. These muted colors have typically been hard to find, but with the recent resurgence in the popularity of flat pedals, it seems as if a new brand of flat pedal shoes are hitting the market almost weekly.

Shimano recently released the SH-GR7 in what I would consider a “public safety cyclist-friendly” black-and-grey option.



You can find the GR7 on Shimano’s website here: <https://bike.shimano.com/en-EU/product/apparel-accessories/shimano/SH-GR700.html>. You’ll probably notice very quickly that the black and grey version isn’t listed as an option. And I can tell you from my personal experience when I was trying to find a pair for this test, they are hard to find. I ended up going directly to Shimano. I’ll come back to the availability issue later on in this review.

When the shoes finally arrived, my first thought as I lifted them out of the box was, “wow, these feel light!” I wouldn’t normally weigh shoes, but I grabbed my trusty canvas Five Ten Freeriders and put them on the scale for a comparison.



As you can see, the difference only amounted to a little more than four ounces. However, based on my time wearing them, I can tell you that the weight difference is noticeable, even if it is only four ounces.

Here are my other “out-of-the-box” observations:

- ▶ A pair of black shoelaces was included in case the standard grey laces are just a bit too flashy for your taste or uniform requirements.
- ▶ The neoprene cuff around the back of the ankle, while interesting in theory, turned out to be not executed very well, at least in my opinion. More on that later.
- ▶ I have wide feet and the Euro 48 had a very roomy toe box.
- ▶ The Michelin-branded sole “felt” sticky and appeared to be of high quality.
- ▶ The strongly delineated tread pattern struck me as odd.

Overall, I would rate the comfort of these shoes as excellent. They wouldn’t be my first choice for a long walk, but I found them to be comfortable for all off-bike, in the office walking and standing.

Through experience, I know that Five Ten are narrow, so I buy 13, which is one size up from my normal 12. The Shimano size chart lists the Euro 48 as equal to US 12, and I did find them to be typical of other size 12 shoes I’ve worn. The difference was the toe box of the Shimano. It was noticeably wider than Five Ten and really contributed to my personal comfort.

I suspect that the idea behind the neoprene cuff is to keep trail/road debris out of the shoe. While I like the idea, the cuff always assumed a “bunched up” condition around the back of my ankle. It wasn’t uncomfortable, just annoying. I did some off-road riding and the cuff did seem to do a decent job keeping out debris out of the shoe.

The Michelin rubber sole provided an acceptably firm pedaling platform. If you are familiar with Five Ten, I found the GR7 sole to be more flexible than the Freerider sole. Some riders might prefer a stiffer sole on the pedals, but I didn’t notice any additional foot fatigue as compared to my Five Ten’s.

In my opinion, Five Ten Stealth S1 rubber is the standard by which all other rubber soles are judged. As I mentioned in my Catalyst pedal review, I like grip, and Five Ten delivers. The Michelin rubber in the GR7 is merely adequate. On the pedals, it yields a harder, less connected feel, and I did find my feet moving around on the pedals more than I like.

I think Shimano/Michelin delineated the tread the way that they did to add a little walking traction. Caution is needed on certain surfaces with flat soles so I appreciate the effort from Michelin. The Catalyst pedal I prefer works best when I am pedaling with the pedal axle in the

(Continued on page 18)



Airo Bike Saddle: Wing-Spring™

(Continued from page 17)

center of my foot arch. Unfortunately, that mid-foot position left half of the rear traction pins on the Catalyst in the void between the different tread patterns on the sole.

Earlier, I mentioned that the GR-7 can be hard to find in black and grey. I attended Interbike 2018 in Reno, Nevada, and made it a point to visit the Shimano display and check out the shoes. The shoe sitting on the rack labeled “GR7” was decidedly different than the GR7 I had been testing. Specifically, the neoprene ankle cuff was missing, replaced by a more traditional padded cuff.

The young man in the Shimano shirt that I spoke with was not very familiar with Shimano’s shoe line-up and couldn’t speak about the changes or when the revised GR7 might be available. It did have a black/grey color pattern, but it’s highly likely that my comments about the ankle cuff are now irrelevant. As of late December 2018, I haven’t been able to find a picture of the revised GR7.

Availability issues aside, I think the Shimano GR7 would make a very nice shoe for public safety cycling operations. A quick Google search shows that the GR7 is fairly average when it comes to price compared to other shoes on the market.

Personally, thanks to the wide toe box, I found the GR7 to be the most comfortable flat shoe I’ve worn. However, after testing the GR7, I can say that I won’t be giving up my Five Ten Freeriders. The Freerider isn’t THAT uncomfortable, and more importantly, I like grip on the pedals and the GR7 just doesn’t deliver.

Thanks for reading. As always, if you want to talk bikes, shoot me an email at scbixby@buffalo.edu. Here’s to lots of bike patrol in 2019!

Scott is a Lieutenant with the New York State University Police at the University of Buffalo. He has been a member of the bike patrol unit since 2005 and currently serves as its supervisor. He has also been the lead instructor for the UB Police Bike Patrol School since 2017. Scott is an expert level mountain biker and has been riding and racing mountain bikes since 1999. He also runs a bicycle wheel building and bike repair business that can be found at www.bluelinebicyclerepair.com. He can be reached at scbixby@buffalo.edu.

Photos courtesy Scott Bixby.

by Tyler Hofacker, PCI #1700-B
Dayton (OH) Police Department



Immediately upon opening the package, I knew I would be very interested in testing out this saddle. The design is nothing that I have seen before. Although it resembles a “traditional” saddle, it is truly one of a kind. The description from Airo reads: “The Airo bike saddle transmits minimal pressure to your sit bones and sensitive soft tissue and provides superior pelvic support and spinal posture. The secret is Airo’s patented Wing-Spring™ technology.”

After I installed the saddle and did the initial set up, I had to adjust the attitude of the seat after several rides to get it just right. The nose of the seat slopes down some so it was a challenge getting it just right to my sit bones. On my first ride, I noticed the “Wing-Spring™” parts of the saddle. With every pedal rotation, I could feel the side of the seat move with my body. It took a couple of shifts to get used to that feeling of wings moving, but it was very comfortable. The Wing-Spring™ of the saddle did what it says and kept my perineum off the seat with every pedal stroke. The wings of the saddle do indeed absorb the vibrations of the road, making for a more comfortable ride.

Airo states, “Whether you’re riding in an upright or a more aggressive forward position, the Wing-Spring™ responds dynamically to maintain proper sit bone contact. As your pelvis rotates, the specially engineered springs flex to maintain proper pelvic support”. The saddle definitely adapts to your body and riding position. After a good week of riding time, I noticed one of the wings of the seat had moved from where it was straight out of the package. At first, I thought that I bent the wing, but I quickly realized that during the 30-mile ride for our Police Cyclist Course, it just adapted to my body and my sit-bones.

Airo has two sizes of this saddle that are based on your body weight/width. Being a smaller guy, I chose the smaller option. When I first saw the saddle, I was nervous that it was going to be uncomfortable, due to it being narrow. I was proven wrong very quickly. I have experienced very little discomfort with this saddle. The only time I have worn cycling shorts with this saddle is on a 30-mile ride, because I knew that it was going to be a lot of saddle time. There is very little to no pressure on the perineal area. At no point have I felt any numbness riding with this saddle.



I would definitely recommend this saddle to other riders, especially to ones who have a rougher terrain to ride daily. The saddle absorbs the shocks of riding better than you would expect from just looking at it. Due to the high demand of the saddle they are currently experiencing a manufacturing delay so I cannot provide a price range. At publication, there was no further information on the website regarding availability.

Tyler was certified as an IPMBA Police Cyclist in 2016 and as an IPMBA Instructor in 2017. He attended the Bicycle Response Team Training and BRT Instructor Seminar in 2018. He also attended the Maintenance Officer Course. He is looking forward to being part of the IPMBA 2020 Host Agency Committee. He can be reached at tyler.hofacker@daytonohio.gov.

Photos courtesy Tyler Hofacker.

Blugold Research Aims to Improve Police Officers' Health

by Judy Berthiaume, Senior Editor
 UW-Eau Claire Department of Marketing and
 Integrated Communications

This article appeared on the UW-Eau Claire website (<https://www.uwec.edu/news/news/uw-eau-claire-research-leads-to-equipment-change-for-police-officers-3294/>) on October 23, 2018.

The Eau Claire Police Department is making a significant change to how officers carry their equipment after a UW-Eau Claire research team determined that load-bearing vests are a safe and healthier alternative to the traditional duty belt.

Officers who carry most of their equipment – which often weighs close to 30 pounds – on vests rather than duty belts experience significantly less hip and lower-back pain, the study found.

“The findings are clear and they are significant,” said Dr. Jeff Janot, a professor of kinesiology and the faculty lead on a six-month study that involved UW-Eau Claire, ECPD and Mayo Clinic Health System. “While the vests weigh more, the weight is more evenly distributed so there is less strain on the hips and lower back.”

Researchers also determined that the vests do not limit the officers’ range of motion or create other issues that would be problematic for the officers from a safety standpoint, said Chantal Bougie, a senior kinesiology major from Oshkosh and the student lead on the research project.

“We didn’t find any unintended consequences from wearing the load-bearing vest that would cause health or safety issues for the officers,” Bougie said.

Given the study results, the ECPD already has begun to transition some of its 100 sworn officers from the duty belts to the load-bearing vests, said Matt Rokus, deputy chief of police for the ECPD.

“The health and well-being of our officers is our priority,” said Rokus, noting that lower-back pain is a significant health issue for law enforcement personnel everywhere. “This study shows empirically that transitioning to the load-bearing vests is the right thing to do for our officers and our community.”

ECPD officers still will wear duty belts, but they will hold only guns and tasers. The radio, hand cuffs, flashlight and other gear officers always have on them will be carried on the vests instead, Rokus said.

Fifteen Eau Claire police officers volunteered to be part of the university’s study. For three months, some officers wore load-bearing vests while the others carried gear on the duty belts. The officers wearing belts then switched to vests, and those wearing vests went back to belts for three months.

After every shift, the officers self-reported and self-recorded any discomfort and rated the level of lower-back discomfort, giving researchers extensive data from a six-month period.

The 15 officers who participated in the study already have been issued their vests and began wearing them immediately. The research partners in the study – UW-Eau Claire, the city of Eau Claire and Mayo Clinic Health System – shared the costs of the 15 vests being used by the officers who volunteered to participate in the research. As funding allows, the ECPD will purchase additional vests so every officer will have one, Rokus said, noting that vests cost \$300 each so it will take some time to purchase them all.

All officers go through extensive use-of-force training, which results in muscle memory that they rely on when accessing their equipment. As officers transition to the vests, they will be retrained to create that same reflexive response, Rokus said.

“This is a significant investment given the costs of the vests and the training,” Rokus said. “It’s an investment we will make because we have the information from UW-Eau Claire’s research to support our decision. We know this is good for the health of our officers.”

That’s good news for Cory Reeves, who said that after five years as an officer with the ECPD he’s already experiencing hip and lower-back pain



Matt Rokus, deputy chief of police, (left) issues Eau Claire police officer Mark Vang his load-bearing vest.

from long hours of sitting in his squad car, walking his beat or apprehending suspects, all while carrying the heavy gear around his waist.

“As soon as I put the vest on, I noticed the difference,” said Reeves. “I wore the duty belt the first three months, and noticed an immediate difference when I put on the vest for the last three months. It’s a lot more comfortable. It was easier to spend long hours on the job when I was wearing the vest.”

Officer Breanna Montgomery said the vest allows her to sit up straight in her squad car, something that isn’t possible with the fully equipped belt. Since she spends many hours in her vehicle completing paperwork and other tasks, the awkward sitting position strains her back, she says.

“When I have the vest on, instead of sitting curved forward, I can sit up straight,” said Montgomery, who has been an Eau Claire police officer for more than three years. “Also, when I’m on calls, if I’m standing for a long time, I don’t have extra weight on my waist so it’s more comfortable and easier on my back.”

While it is impossible to eliminate all the health-related challenges that police officers face, the vest does address issues with lower-back pain, which is among the most common health problem reported by officers, especially patrol officers, Rokus said.

(Continued on page 20)

Improving Officers' Health

(Continued from page 19)

“Policing is a physically demanding profession,” said Rokus. “Officers spend a lot of time in their vehicles because they use them as their offices. They also often stand to talk to people or hold suspects, or chase a combative suspect, all while carrying 30 pounds of police equipment on their waists.”

As a result, many officers experience constant back pain, diminishing the quality of their lives,

Rokus said. They also miss patrol shifts because of back issues, which leads to staffing shortages, overtime costs and worker comp claims, he said.

“The health improvement for our officers is important,” Rokus said of the vests. “But there also should be a reduction in health care cost and lost time due to injury, which is good for our community.”

Knowing the strain that the heavy belt puts onto officers' backs during their 10-hour shifts, the researchers anticipated that their study would find that the vests would ease back pain, Bougie said.

“But we were surprised by just how big of a difference the vests made in how the officers rated their pain,” Bougie said. “When the officers went from the vest to the belt, there were really big jumps up in the levels of pain they reported.”

Other than a study in Sweden, Janot said he doesn't know of any other research on this issue.

Given its importance and the limited research done, interest in UW-Eau Claire's findings is significant and widespread among law enforcement agencies, Janot said.

“The vest-versus-belt issue sounds like a fairly simple question but it's actually very complicated,” said Janot. “Law enforcement agencies all over want to know if the vests can help address officers' back problems. Like in Eau Claire, they want data that will help them make an informed decision.”

Since the study was announced in the spring, Janot has been contacted by dozens of law enforcement agencies from across the country asking about the results.

This winter, the UW-Eau Claire research team will present its findings to top law enforcement officials from agencies across Wisconsin.

“It's exciting to partner with our community, but it's also exciting to know that our work may make a difference far beyond Eau Claire,” Janot said.

Bougie said it's incredible to know that her work as a student researcher will make a positive difference in the quality of the lives of police officers here and elsewhere.

“Knowing I am helping these police officers who keep us safe is pretty special,” said Bougie, who plans to work as a physical therapist after graduate school. “It feels like I am giving them something in return for what they do for all of us. That's an amazing feeling.”

While the vests-versus-belts question is at the center of their project, the researchers also built a biometric profile of more than three dozen active-duty police officers, giving the ECPD a look at the overall health status of its officers, Janot said.

The biometric screenings tested things like the officers' flexibility, spinal mobility, core endurance, aerobic fitness, upper-body endurance and lower-body strength.

These screenings give the ECPD a baseline that they can use to identify strategies to improve the overall health, well-being and readiness of their officers, and to identify possible underlying issues that contribute to officers' health issues, Janot said.

“Having the answers to a lot of small questions can be used to make a big difference,” Janot said.

The information gained from the screenings will be used as part of the

ECPD's ongoing wellness programming, Rokus said.

By expanding its research to include the biometric screenings, researchers provided the ECPD with important information about the health of its officers, and UW-Eau Claire students gained valuable experience using high-end equipment as part of a real-world study, Janot said.

Given the success of the project with the ECPD, Janot hopes to continue to work with the department and to partner with other local agencies to help them solve problems.

“We have the students, cutting-edge technology and expertise to gather the information the ECPD and other agencies need to address a variety of problems,” Janot said. “We've shared our data with the ECPD, but we're not done yet. Interest in this study is extremely high so we will share what we learned, but also are looking for ways to build on it.”

UW-Eau Claire faculty involved in the vest research include Janot; Dr. Nick Beltz, assistant professor; Dr. Saori Braun, assistant professor; and Dr. Marquell Johnson, associate professor.

Student researchers include Bougie, Anna Kohler, Sierra Freid, Maddy Downing, Jessica Nagel and Lindsey Opelt.

Dr. Andrew Floren of Mayo Clinic Health System helped UW-Eau Claire researchers design the study.

For more information about the police vest research, contact Dr. Jeff Janot, professor of kinesiology, at 715-836-5333 or janotjm@uwec.edu, or Matt Rokus, deputy chief of police, at 715-839-4979 or Matt.Rokus@eauclairewi.gov.

For information about The Vest Man company's hybrid vest carrier vests that were used by officers in the study, contact John Gurrola at 310-864-1567 or by email at john@thevestman.com.

Judy is the IMC's chief storyteller, sharing stories about the many exceptional people that make UW-Eau Claire such a phenomenal place. She talks with students, faculty, staff and alumni to find and to share their successes, initiatives, challenges and dreams with the campus community and the world beyond.

“The health improvement for our officers is important,” Rokus said of the vests. “But there also should be a reduction in health care cost and lost time due to injury, which is good for our community.”

Product Purchase Program

PRODUCT GUIDE 2019

The IPMBA Product Purchase Program is going strong. As the retail environment continues to evolve, online shopping has made it increasingly easier to take advantage of the discounts offered by the below-listed companies. Many of them now offer a coupon code entered at checkout that automatically applies the discount. We know you have many choices when you shop, but we urge you to support those who support you. Visit <http://ipmba.org/product-purchase-program> and start shopping today!

BICYCLES



iFORCE PATROL BICYCLES

Product: iFORCE Patrol Bicycles and Accessories

Discount/Cost to Members: Contact for special pricing.

Contact Name: Skip Jones

Contact Info: 724-431-2335/sjones@ibistek.com

Website: www.iforcebikes.com

BLIMP CITY BIKE AND HIKE

Product: Kona Shield Multi-Purpose Safety & Security Bikes, Accessories, Repairs, Electric Assist
Discount/Cost to Members: Minimum 10% off MSRP

Contact Name: Michael J. Purdy

Contact Info: 330-836-6600/

info@blimpcitybikeandhike.com

Website: www.blimpcitybikeandhike.com

ENABLED ENTERPRISES LLC

Product: Electric Police Patrol Bike

Discount/Cost to Members: 20% off MSRP

Contact Name: Bill Eichengreen

Contact Info: 847-656-8100/bill@enabled.vet

Website: www.enabled.vet

STRIDER SPORTS INTERNATIONAL

Product: Balance Bikes and Accessories

Discount/Cost to Members: 24-53% off MSRP

Contact Name: Customer Service (Ann or Jennifer)

Contact Info: 605-342-0266/ann@striderbikes.com

Website: www.striderbikes.com

Notes: Available in sizes 12, 14x, 16, and 20". To order, email info@striderbikes.com for an order form. Mention your IPMBA number in the email.

BICYCLE ACCESSORIES AND COMPONENTS



ISM SADDLES, LLC

Product: ISM Bicycle Saddles

Discount/Cost to Members: 50% off Retail

+ Free Shipping in the US

Contact Name: Laura Toll

Contact Info: 813-909-1441/orders@ismseat.com

Website: www.ismseat.com

Notes: Click on BUY NOW. Enter discount code FIRSTRESPONDER.



VOLCANIC BICYCLES

Product: Bicycles and Accessories

Discount/Cost to Members: 20% off MSRP

on accessories and Volcanic clothing.

Contact Name: Jennifer Kackley

Contact Info: 509-427-8623/

info@volcanicbikes.com

Website: www.volcanicbikes.com

ARKEL, INC.

Product: Bicycle Panniers, Trunk Bags, Racks

Discount/Cost to Members: 10% off MSRP

Contact Name: Kevin Ryan

Contact Info: 819-564-3017/info@arkel.ca

Website: www.arkel-od.com

Notes: Use coupon code 10-IPMBA at checkout.

BAR MITTS, INC.

Product: Bar-Mounted Bicycle Mitts

Discount/Cost to Members: 20% off MSRP + Free US Shipping

Contact Name: Ward or Patti Graham

Contact Info: 775-622-8048/barmitts@charter.net

Website: www.barmitts.com

Notes: Send email with name, member number, item, and quantity. An invoice will be sent for payment via credit card or PayPal.

CANE CREEK

Product: Forks, Shocks, Cranks, Seatposts, Headsets, Brakes, Handlebar Accessories, etc.

Discount/Cost to Members: 20% off all non-sale/promotional items

Contact Name: Colin Reis

Contact Info: 800-234-2725/sales@canecreek.com

Website: www.canecreek.com

Notes: Visit www.canecreek.com/about-us/canecreek-heroes-program, complete the application, and submit with your IPMBA membership card or public safety credentials.

HERO KIT

Product: Portable Bike Repair Kits

Discount/Cost to Members: 25% off Retail

Contact Name: Jason Berv

Contact Info: 970-497-2308/jason@herokit.com

Website: www.herokit.com

Notes: Use coupon code IPMBA at

www.herokit.com or contact HeroKit to use PO.

KENDA USA

Product: Premium Bicycle Tires & Tubes

Discount/Cost to Members: 40% off MSRP

Contact Name: Sam Jones

Contact Info: 614-866-9803/sjones@kendausa.com

Website: <http://shop.kendatire.com>

Notes: Available through Kenda's consumer direct platform using the discount code IPMBA2019.

MOUNTAIN RACING PRODUCTS

Product: Power Grip Straps

Discount/Cost to Members: 30% off MSRP

Contact Name: Tim Fry

Contact Info: 970-241-3518/support@mrpbike.com

Website: www.mountainracingproducts.com;

www.powergrips.com

Notes: Contact Tim for order form.

PEDALING INNOVATIONS

Product: Bicycle Pedals - Catalyst

Discount/Cost to Members: 30% off MSRP

Contact Name: Kiele Wilson

Contact Info: 970-589-6418/

support@pedalinginnovations.com

Website: www.pedalinginnovations.com

Notes: Email for coupon code.

PRONETCYCLING, INC.

Product: GUTR, Sprintech, Donnelly, BiBBits, IceToolz, Effeto Mariposa, Leonardi Factory, Fouriers, FireTote

Discount/Cost to Members: 30% off MSRP

Contact Name: Mike or Ed

Contact Info: 360-782-2477/

info@pronetcycling.com

Website: www.pronetcycling.com

Notes: Place items in cart. Replace "Free Shipping" with "IPMBAPro". Excludes closeouts and Effeto Mariposa torque wrenches.

ROCK BAR CYCLING

Product: Rock Bar Gear and Training Case for Bikes and Packs

Discount/Cost to Members: 20% off four or less, 30% off five or more.

Contact Name: Mark Connelly

Contact Info: 818-745-2068/

moreinfo@rockbarcycling.com

Website: www.rockbarcycling.com

Notes: Call or email with quantity and you will be contacted to complete the order.

SERFAS

Product: Shoes, Lighting, Seats, Brake Pads, Tubes, Tires, Tools, Inflation, Clothing, Accessories

Discount/Cost to Members: 10% off Retail Pricing through 4Bike-Police and Bicycle Patrol Outfitters

Contact Name: Bryan Harding

Contact Info: 800-424-0047 ext. 208/

bryan@serfas.com

Website: www.serfas.com

Notes: Place your order at www.4bike-police.com and enter SERFAS10 at checkout or at www.bikepatrol.info using coupon code IPMBA18.

SIGMA USA

Product: Lights, Bike Computers, Heart Rate Monitors, Tool Kits

Discount/Cost to Members: 30% off MSRP

Contact Name: Randy Scott

Contact Info: 630-945-3387/

sales@sigmasportusa.com

Website: www.sigmasport.com

Notes: Shop www.sigmasportstore.com and enter promo code IPMBA30 at checkout.

SKS GERMANY (SKS USA)

Product: Fenders, Tools, Pumps, Bags, Bottles & Holders, Lubes & Cleaners

Discount/Cost to Members: 20% off to members/wholesale pricing for departments

Contact Name: Crystal Trout

Contact Info: 618-395-2400/sks.sales@sks-

usa.com

Website: www.sks-germany.com

Notes: Contact by email or phone for full product price list, information, and order form.

TIGER EYE

Product: High-quality, USA made, helmet-mount cycling mirrors

Discount/Cost to Members: 10% off MSRP through Bicycle Patrol Outfitters

Contact Name: Rich Scott

Contact Info: 630-292-0044/ghreg@yahoo.com

Website: www.teamtigereye.com

Notes: Place your order at <http://www.police-bikes.com/mirrors.html> and enter IPMBA2016 at checkout.

TOGS

Product: TOGS Thumb-Over-Grip Systems

Discount/Cost to Members: 30% off MSRP

Contact Name: Neil Harvey

Contact Info: 801-891-7739/cs@togs.com

Website: www.togs.com

Notes: Enter discount code IPMBA30 at checkout.

(Continued on page 22)

(Continued from page 21)

WTB

Product: Tires, Saddles, Grips, Rims, Wheels, Wheel Parts
Discount/Cost to Members: 50% off MSRP
Contact Name: Jordan Smoke
Contact Info: 415-389-5040 x 10/info@wtb.com
Website: www.wtb.com
Notes: Email info@wtb.com with IPMBA member number and expire date.

BICYCLE STORAGE AND TRANSPORT

LIFT AND STORE, LLC

Product: Automatic Bike Lift Storage Systems
Discount/Cost to Members: 25% off MSRP
Contact Name: Chris Benyo
Contact Info: 800-825-4777/chris@liftstore.com
Website: www.liftstore.com

VELOGRIP

Product: Bicycle Storage for the Home, Apartment, and Commercial Settings
Discount/Cost to Members: 20% off MSRP
Contact Name: Eric Anderson or Sean O'Rourke
Contact Info: 972-824-9633/support@velogrip.com
Website: www.velogrip.com
Notes: Online: Use discount code IPBAMEMBER in promo box at checkout.

BIKE PATROL SUPPLY COMPANIES



AMERICAN BIKE PATROL SERVICES

Product: Bicycles, Lights, Parts, Gloves, Clothing, Accessories
Discount/Cost to Members: 10% off products; 5% off bicycles
Contact Name: Aaron Roesler
Contact Info: 626-488-2421/abps@bikepatrol.info
Website: www.bikepatrol.info
Notes: Bike coupon code: police18 / Products coupon code: ipmba18



BICYCLE PATROL OUTFITTERS

Product: One-Stop Bicycle Patrol Products Store
Discount/Cost to Members: 5% off web prices
Contact Name: Mike Flynn
Contact Info: 951-318-7341/bpopatrol@yahoo.com
Website: www.police-bikes.com



POLICE BIKE STORE

Product: Full Line of Bicycles, Bicycle Patrol Lights, E-Bikes, Sirens, Bags, Accessories, Uniforms, C3Sports, Fuji, Haro
Discount/Cost to Members: Additional 5-10% off Web Prices
Contact Name: Michael Espejo
Contact Info: 973-366-5868/info@policebikestore.com
Website: www.policebikestore.com

4BIKE-POLICE.COM

Product: Police Bikes and First Responder Bicycle Duty Accessories; "Head-to-Toe" Outfitting
Discount/Cost to Members: 10% or more off MSRP
Contact Name: Mark Leonard
Contact Info: 501-517-5338/LCGInc@sbcglobal.net
Website: www.4bike-police.com
Notes: When ordering online, use coupon code IPMBA 10 for 10% discount.

PATROL BIKE SYSTEMS

Product: Bikes, Uniforms, Equipment, Park Tools, Patrol Cycle Shoes
Discount/Cost to Members: Contact for Pricing
Contact Name: Mark Eumurian
Contact Info: 651-773-8763/mark@patrolbike.com

TEAM CYCLING AND FITNESS

Product: Accessories, Components, Tools (Trek, Shimano, Bontrager, Pearl Izumi, etc.)
Discount/Cost to Members: 15% off MSRP
Contact Name: Geoff or Greg Thielmeyer
Contact Info: 513-522-1551/info@teammcyclingandfitness.com
Website: www.teammcyclingandfitness.com
Notes: Use discount code IPMBA in promo box at checkout. Discount does not apply to bicycles.

THE BICYCLE STORE

Product: Bikes and Accessories
Discount/Cost to Members: 15% off any regular priced merchandise and labor
Contact Name: Sal Piccolo
Contact Info: 973-377-6616/contact@thebicyclestorenj.com
Website: www.thebicyclestorenj.com
Notes: Complete police application. Call to demo a complete police mountain bike.

CLOTHING & ACCESSORIES

ADIDAS OUTDOOR

Product: Apparel and Footwear
Discount/Cost to Members: 50% off MSRP
Contact Name: Customer Service
Contact Info: 866-639-7916/customer.service@adidasoutdoor.com
Website: www.adidasoutdoor.com
Notes: Apply at www.adidasoutdoor.com/vip. Upon approval, orders placed using the email address on the account will be eligible for the discount.

ARMOR PUR ODOR NEUTRALIZING

Product: Odor Neutralizing Products for Body Armor, Sports Gear, and More
Discount/Cost to Members: 10% off Retail
Contact Name: Lt. Thomas Norton
Contact Info: 973-244-1862/contact@armorpur.com
Website: www.armorpur.com
Notes: Enter coupon code "IPMBA" on check out page; 10% will be automatically deducted.

BERN UNLIMITED

Product: Helmets, Pads, and Accessories
Discount/Cost to Members: 40% off MSRP
Contact Name: Amber Allaire
Contact Info: 781-582-8125/aallaire@bernunlimited.com
Website: www.bernunlimited.com
Notes: Order online at www.bernunlimited.com using promo code IPMBA40 at checkout.

MAXIT DESIGNS

Product: Summer & Winter Moisture-Wicking Headwear and Sock Liners
Discount/Cost to Members: 35% off Retail
Contact Name: Liz Fuoco
Contact Info: 800-556-2948/info@maxit-inc.com
Website: www.maxit-inc.com, www.headgator.com
Notes: Provide IPMBA membership number/expire date.

SHOWERS PASS

Product: Cycling Outerwear & Apparel
Discount/Cost to Members: 40% off MSRP
Contact Name: Jeremy Rider
Contact Info: 503-203-8000/jeremy@showerspass.com

Website: www.showerspass.com
Notes: Order online. Enter coupon code IPMBA201940 at checkout.

SOCKGUY

Product: High Performance Cycling, Running, Hiking, and Lacrosse Socks
Discount/Cost to Members: 30% off on Police and Sheriff socks
Contact Name: Michael Foley
Contact Info: 760-804-1344/michael@sockguy.com
Website: www.sockguy.com
Notes: Online: Enter promo code SGPOLICE18 at checkout and click recalculate. Can be used up to five times per individual during the year.

DUTY GEAR



R & B FABRICATIONS

Product: Panniers, Equipment Bags & Safety Vests
Discount/Cost to Members: 15% off Retail
Contact Name: Jessica Schultz
Contact Info: 800-553-1911/info@rbfab.com
Website: www.rbfab.com



RZ MASK, LLC

Product: Air Filtration Masks
Discount/Cost to Members: 30% off MSRP
Contact Name: Jim Hatzenbuehler
Contact Info: 952-324-5474/jim@rzmask.com
Website: http://rzmask.com/pages/public-safety
Notes: Order online. Enter coupon code IPMBA30 at checkout. Good for unlimited uses.

ELECTRONICS & LIGHTING



CY GOLITE

Product: High-Intensity Lighting Systems, Designed and Built in the USA
Discount/Cost to Members: 35% off Retail
Contact Name: Andrew Ibanez
Contact Info: 949-297-4972/patrol@cygolite.com
Website: www.cygolite.com

ALERTE SYSTEMS INC.

Product: "Trail-Blazer" Bike Light Kit
Discount/Cost to Members: Contact for Special Pricing
Contact Name: Janice
Contact Info: 800-728-1536/sales@alertesystems.com
Website: www.alertesystems.com

C3SPORTS BIKE PATROL SOLUTIONS

Product: MaxPatrol-600 Police Light System, Siren, Cycling Lights, Gloves, Bags
Discount/Cost to Members: 20% off MSRP
Contact Name: Michael Espejo
Contact Info: 973-631-9839/info@c3sports.com
Website: www.c3sports.com
Notes: Enter discount code IPMBA20 at checkout.

CATEYE BICYCLE ELECTRONICS

Product: Cycling Computers, Lights, and Accessories
Discount/Cost to Members: 30% off MSRP
Contact Name: Jim Blattner
Contact Info: 303-501-1317/jim@cateye.com
Website: www.cateye.com
Notes: Order via www.cateyeamerica.com. Apply "IPMBA2018" discount code at checkout.

CYCLE SIREN

Product: Police & EMS Mini-Sirens & Lighting for Bike Patrol

(Continued on page 23)

(Continued from page 18)

Discount/Cost to Members: 12% off Retail
Contact Name: Greg Bohning
Contact Info: 877-477-4736/sales@cyclesiren.com
Website: www.cyclesiren.com
Notes: E-mail or call with your name and IPMBA membership number.

LIGHT & MOTION

Product: Cycling and Underwater Lighting
Discount/Cost to Members: 40% off non-sale items
Contact Name: Ryan Stokey
Contact Info: 831-645-1538/
sales@lightandmotion.com
Website: www.lightandmotion.com
Notes: Use discount code IPMBA-2019 at checkout.

NIGHT PROVISION

Product: Bicycle Lights/Tactical Flashlights
Discount/Cost to Members: 15% off MSRP
Contact Name: Evan Hsieh
Contact Info: 800-592-0319/
support@nightprovision.com
Website: www.nightprovision.com
Notes: Online: During checkout, use coupon code IPMBA15 and include your IPMBA membership number under "Comments and Notes".

EMS

STAT PACKS

Product: Trauma Bags & Accessories
Discount/Cost to Members: 35% off MSRP
Contact Name: Andrew Tepper
Contact Info: 435-627-2265/atepper@statpacks.com
Website: www.statpacks.com
Notes: Enter coupon code IPMBA35 online during checkout or reference when placing phone orders.

EYEWEAR

DUAL EYEWEAR

Product: Eyewear
Discount/Cost to Members: 40% off Retail
Contact Name: Kyle Gulla
Contact Info: 720-235-1112/
customercare@dualeye.com
Website: www.dualeyewear.com
Notes: Enter your membership number in the fax field on the checkout page. Enter IPMBA-2017 in the discount code field in the shopping cart. Your membership status will be verified prior to order fulfillment. Does not apply to discontinued items, Thin Optics, or bundle packages.

RUDY PROJECT USA

Product: Sunglasses, Sport Eyewear, Helmets, Goggles, Prescription Eyewear
Discount/Cost to Members: 35% off Retail + additional 10% off closeouts and promotional items
Contact Name: Reba Kucera
Contact Info: 949-272-2468/rkucera@gorace.pro
Website: www.rudyprojectna.com/vip
Notes: Online: Go to www.rudyprojectna.com/vip and enter VIP code IPMBA to view discounts. Includes prescription eyewear.

XX2i OPTICS

Product: Prescription, Performance, and Casual Eyewear
Discount/Cost to Members: 60% off MSRP
Contact Name: Reba Kucera
Contact Info: 949-272-2468/rkucera@gorace.pro
Website: www.xx2i.com
Notes: Use coupon code IPMBA at checkout.

FOOTWEAR

ADIDAS OUTDOOR - FIVE TEN

Product: Cycling Shoes
Discount/Cost to Members: 50% off MSRP
Contact Name: Customer Service
Contact Info: 866-639-7916/
customerservice@adidasoutdoor.com
Website: www.adidasoutdoor.com/fiveten-brand
Notes: Go to www.adidasoutdoor.com/vip and apply. Upon approval, orders placed using the email address on the account will be eligible for the discount.

HAIX NORTH AMERICA

Product: HAIX Footwear
Discount/Cost to Members: 15% off + free shipping and returns over \$49
Contact Name: Sandy Longarzo
Contact Info: 866-344-HAIX (4249)/service-hna@haix.com
Website: www.haix.com
Notes: Place orders via www.haixusa.com/ipmba

MAINTENANCE AND TOOLS

PROGOLD LUBRICANTS/ABC COMPOUNDING

Product: ProLink Chain Lube, ProGold Lubes, EPX
Discount/Cost to Members: 40% off Retail
Contact Name: Brad Walker
Contact Info: 800-421-5823/
sbw@abccompounding.com
Website: www.progoldmfr.com
Notes: Use coupon code LEMIL online.

UNITED BICYCLE SUPPLY

Product: Bicycle Tools and Parts
Discount/Cost to Members: Wholesale Pricing to Departments
Contact Name: Erik Larsen or Mark Super
Contact Info: 541-482-1750/ubs@bisp.net
Website: www.unitedbicyclesupply.com
Notes: Call to establish an account for your department to be eligible for wholesale pricing on all products.

NUTRITION

GQ-6

Product: GQ-6 3:2:1 Hydration Base, GQ-6 REFUL Endurance & Energy, GQ-6 REKUVR Nite Time
Discount/Cost to Members: 35% off online orders
Contact Name: Richard Hiraga
Contact Info: 949-940-6649/info@GQ-6.com
Website: www.gq-6.com
Notes: Use the online code IPMBA2019 at checkout.

NUGO NUTRITION

Product: Nutrition/Energy Bars
Discount/Cost to Members: 20% off MSRP
Contact Name: Alyssa Nard
Contact Info: 888-421-2032/
anard@nugonutrition.com
Website: www.nugonutrition.com
Notes: Enter coupon code IPMBA20 at checkout.

SPECIALTY SUPPLIERS

EXPERT VOICE

Product: Outdoor-Bike-Action Sports Gear
Discount/Cost to Members: Promotional Pricing
Contact Name: Customer Service
Contact Info: 866-376-4685/
Website: www.expertvoice.com
Notes: Email info@ipmba.org for the access code to create an account.

TRAINING

RYAN LEECH ONLINE MOUNTAIN BIKE SKILLS COACHING

Product: Online Mountain Bike Skills Coaching with Coach Support
Discount/Cost to Members: 50% off Monthly Subscription
Contact Name: Ryan Leech
Contact Info: leech@ryanleech.com
Website: http://learn.ryanleech.com
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Contact Info: 800-275-4915/
streetcrimesinfo@gmail.com
Website: www.streetcrimes.com
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UNIFORMS



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Product: Bike Uniforms
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Contact Info: 253-625-7420/sally@bratwear.com
Website: www.bratwear.com



MOCEAN TACTICAL

Product: Bike Patrol Uniforms
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Contact Name: Bill Levitt
Contact Info: 877-662-3680/
bill@moceantactical.com
Website: www.moceantactical.com
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Contact Info: 206-722-1412/rep@olyuniforms.com
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Gears and Gadgets: One, Two, Three

by David Cohen

Maryland National Capital Park Police Reserve Unit

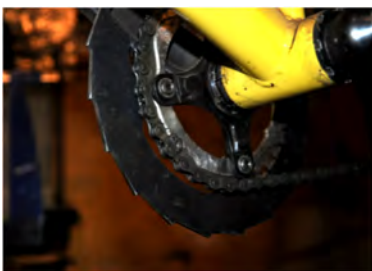
Aside from e-Bikes vs conventional bikes, no single topic in the bicycle world seems to elicit more debate than the one over the proper number of front chain rings a bicycle should have: single, double or triple. There are certainly advantages and disadvantages to each one, but the question remains: which makes the most sense for the public safety cyclist?

There's no doubt that when it comes to bicycles, particularly in the public safety role, I'm old school. I prefer my bikes and componentry to be simple and rugged. I've learned from years of tinkering on everything from bikes to airplanes that the quickest way to get myself in trouble is to try to fix something that isn't broken. On the flip side, I don't want to be so resistant to change that I'm missing the boat on technology that could be beneficial to the public safety cyclist. I don't want to be the proverbial old guy telling the kids to "get off my lawn!"

While there is no substitute for an actual trial under genuine riding conditions, I thought that mathematically analyzing the various gear combinations afforded by the various systems would be a good place to start. Digging out my old high school geometry lessons, I've come up with a hypothetical 29-inch wheel patrol bicycle (I may be old school, but I'm not *that* old school!) to at least do a paper exercise on what the bicycle is theoretically capable of with each type of front chainring system.

For you math geeks, the mathematical formula works like this: take the circumference of the 29-inch wheel, which is two times the radius (from the tire to the hub) times Pi (3.14, etc.). That gives us a measurement in inches, which for a 29er is 91.1 inches. You then take this measurement and multiply it by the gear ratio (i.e., a 33 front / 11 rear yields a 3 to 1 gear ratio) and you find out how much ground you can cover in one full revolution of the pedals. Divide the result by 12 and you have the measurement in feet. Then use these formulae to measure and compare the lowest and highest gear ratios afforded by each system.

Single Chain Ring



The single chain ring with an 11 or 12 speed rear cassette combination seems to be the latest fad in high-end mountain bikes. The main advantage is that you do away with the front derailleur altogether, which is one less thing to go wrong. There is a slight weight

advantage, which is somewhat negated by the larger cassette on the rear. Rear derailleur technology has advanced to the point where smoother shifts are available across the entire range. Most single chain ring bikes have a 32-tooth front chain ring with a 10-50 cassette. We'll examine the low end and the high end.

Low End: 32 front / 50 rear = 0.64:1 gear ratio. For every one crank of the pedals, the wheel only turns a bit less than 2/3rds of its distance. The bike will only move forward about 4.85 feet with each crank. This is a very low gear and capable of scaling extremely steep grades.

High End: 32 front / 10 rear = 3.2:1 gear ratio. For every one crank of the pedals, the wheel turns 3.2 times. That translates to roughly 24.3 feet.

Those are not bad gear ratios, particularly on the low end. Let's see how they compare to the double and triples.

Double Chain Ring



The double chain ring is really the oldest of the technologies. Growing up, my Schwinn World Sport had a non-indexed double with a 39 low gear and a 54 high gear. Quite a few first-generation mountain bikes from the 1980's were equipped with the double. They became obsolete almost overnight with the advent of the triple chain

ring. While always a staple for road bikes, the double chain ring is making a comeback in the mountain bike world. It has the advantages of being less complicated mechanically than a triple ring, while giving a greater gear range than the single ring. There is a slight weight penalty, as you have the same 11 or 12 speed rear cassette and the front derailleur. However, we're only talking about ounces, which is almost negligible on a public safety bike when you consider how much gear both the bike and the rider carry.

Most double chain rings are 26 low / 36 high gearing, combined with an 11-42 rear cassette. Once again, let's do the math on the low end and high end.

Low End: 26 front / 42 rear = 0.62:1 gear ratio. Even lower than the single chain ring, which translates to 4.7 feet for every turn of the crank, roughly two fewer inches than on a single chain ring, which I would consider a negligible difference

High End: 36 high / 11 rear = 3.27:1 gear ratio. This gives you a slightly higher gear ratio, yielding about 24.8 feet for every turn of the crank. This is a slight advantage; about six inches for each crank turn. While six inches per crank turn might not seem like a big deal, if you are in pursuit in top gear, and running a crank rate of 90 rpms, that translates into a difference of 45 feet each minute, which could make a critical difference.

The other very slight advantage on the double crankset is having a slightly wider chain (5.5 mm to 5.3 mm). Generally, a wider chain is going to be stronger. Single speed chains are very wide for a reason. They have to stand up to the enormous amounts of torque placed on them.

Triple Chain Ring



While the double chain ring may be the oldest of the technologies, it was the triple chain ring that made mountain biking, particularly cross-country style mountain biking, a reality for most of the cycling public.

It provides a very wide-spread gear range, from super-low for climbing roads off-road, to fairly high gears for pavement riding. The common chain ring for mountain bikes is 22 / 33 / 44. Some 700c commuter bikes use a 28 / 38 / 48 front combination; both mountain and commuter bikes typically use an 11-34 rear cassette, although I've seen 11-32 and 11-28 combinations. The advantage of the

(Continued on page 28)

Gears & Gadgets: 1x vs. 2x vs. 3x

(Continued from page 27)

triple chain ring is that it is supposed to have a wider gear range than a single or double. The disadvantage is that it is mechanically more complex. It would have a slight weight advantage over the double chain ring due to the smaller cassette needed in the rear. For our exercise, we'll stick with the mountain gearing.

Low End: 22 front / 34 rear.

This yields a gear ratio of 0.65:1,

just slightly *higher*

than the single chain ring, and also higher than the double chain ring. This actually came as a bit of a surprise. In terms of distance, though, it translates to about 4.93 feet per crank, about 2.75 inches less than a double chain ring, and about 9/10ths of an inch less than a single chain ring bike. At the low end, there really is no appreciable difference in chain rings.

High End: 44 front / 11 rear. This yields a 4:1 gear ratio, which is a very significant difference from the single and double chain ring bikes. In terms of distance, that is more than six feet further than a single chain ring bike per crank and 5½ feet further than the double crank set. Using our hypothetical pursuit at 90 rpm, that means an advantage of 540 feet in just one minute of riding over a single chain ring bike and an advantage of 405 feet over a double chain ring. Several bike versus car pursuits have been documented on the pages of the *IPMBA News* over the years. The kind of difference between the high end of a triple chain ring and its competitors could literally make the difference between an apprehension and the suspect getting away.

Triple chain rings offer one other important advantage. The drivetrain has a wider and stronger chain because the rear cassette has fewer gears. My personal preference is for the 8-speed chain, which is 7mm wide; that is, 32% wider than a 12-speed chain and 27% wider than an 11-speed chain. As mentioned earlier, the wider chains can handle more torque without snapping. Even the more commonplace 9-speed chain is 22% and 18% wider than the 12- and 11-speed chains, respectively.

Conclusions

Mountain bikes have made breathtaking leaps in technology in a relatively short time. When I first cut my teeth on mountain bikes, I was riding an 18-speed with thumb shifters, a fork that had 60mm

travel, and cantilever brakes. To say that this bike would be obsolete today would be a grand understatement. Many of the improvements in mountain bikes have carried over to the public safety cycling arena and have dramatically improved our experience, most notably, disc brakes.

However, some improvements, such as slacker head angles, which make a bike

more stable but not as responsive, aren't so good. As far as the increasing use of single and double chain-rings vs the

triple chain-ring in the public safety environment, I find myself very guarded, at best.

I've read in other articles that the conventional wisdom is/was that EMS bikes should retain the triple chain ring because of the better low end gearing. As we have seen by the math, the differences in the low end gearing between the three chain ring types is negligible. And, for the kind of riding EMS personnel do, having the low end and the simplicity of not having to deal with a front derailleur may be worth investigating. I don't think the shallower top end gearing would come into serious play in the EMS bike role. They need speed, but they don't need the kind of pursuit speed a police officer may need.

My primary concern with the single and double chain ring setups is the loss of the top end for the police bicycle. As demonstrated above, the 4:1 top end ratio of a triple-chain ring bike has a considerable advantage over single / double chain rings. A good analogy for this is the Dodge Charger police cruiser. The Charger has a top speed of 145 miles per hour. Odds are, there will never be a point in your career where you're going to have to take the car that fast. But, if the need ever arose, it's nice to know that you have that kind of speed and power at your disposal.

That is the same rationale for having the 44 / 11 combination on a triple chain ring bike. As a rider, you may never need to use the 44 / 11 combination, but it's nice to know it's there. In fact, if I was patrolling in a relatively flat jurisdiction, I'd even consider running a 28 / 38 / 48 triple combination to have an even stronger top end.

There is absolutely no doubt in my mind that the single chain ring mountain bike yields a magnificent bike for natural

surface trails, where the top end gears aren't really necessary. I seldom have used anything deeper than a 44 / 14 combination off-road, a 3.14 to 1 ratio, which is roughly equivalent to the 3.2 to 1 top end gear ratio offered by a single chain ring mountain bike. The use of the single chain ring on higher end mountain bikes is emblematic of a bigger trend: while the public safety bike and the mountain bike can trace their lineage to a common ancestor – the early mountain bikes – the evolution of both bikes has taken them down two increasingly divergent paths. The continued development of the mountain bike may not necessarily translate into usable improvements to the public safety bicycle.

By trying to relegate the triple chain ring setup to the scrapheap of bicycle history, I believe we're trying to fix something that was never broken. A properly set up and adjusted front derailleur should last an entire season without giving the rider much trouble. As an avid mountain biker who has led numerous group rides over the years, I'm very hard-pressed to come up with any incidents where riders suffered front derailleur failures. A more common issue is a bent chain ring that interferes with the derailleur's operation. The rear

derailleur is far more vulnerable, as I can think of dozens of times on group rides when riders have lost their rear

derailleurs to an errant stick or rock, or tore the derailleur up in a crash.

I continue to wrestle with my conscience about being a stick-in-the-mud for not embracing the "latest and greatest" advancement in mountain bikes. However, I simply cannot escape the mathematical calculations showing that abandoning the triple chain ring would be a mistake for public safety cycling, in general, and police cycling, specifically.

I know this is a hot topic. I do not claim to be the know-all / be-all when it comes to bicycling and I certainly encourage your feedback, good, bad or indifferent. I imagine this debate will continue. Until then, ride safely, everyone!

David Cohen is a 12 year volunteer with the Maryland-National Capital Park Police. When he isn't riding or tinkering with bicycles, David can be found tinkering with vintage cars or World War II airplanes. An avid historian, David enjoys researching and writing as well. He can be reached at onyx@sax@aol.com.

Photos courtesy David Cohen.

The continued development of the mountain bike may not necessarily translate into usable improvements to the public safety bicycle.

...the 4:1 top end ratio of a triple-chain ring bike has a considerable advantage over single / double chain rings.

Krav Maga for Public Safety Cyclists

by Gail Boxrud
Krav Maga Minneapolis

DEA Agent Don Canestraro led a team into a suspected drug house in Minnesota a few years ago.

They knocked, forced open the door with guns drawn, but the suspect inside did not comply with their commands. He backed away nervously and then appeared to reach for something out of their vision. Another agent started to ease the slack out of his trigger, as the encounter intensified. Then Don employed a Krav Maga technique called the educational stop, a simple technique that stuns the suspect without injuring him.

Don used his open hand to push the man back, palm to his chest, and fingers to his windpipe. This move knocked the suspect into the wall, and he fell to the ground, where they handcuffed him.

A tense encounter that could have justified shooting the suspect, based on his actions. The suspect turned out to be unarmed, but scared and confused. He was hard of hearing and didn't speak English.

Canestraro, now retired, started training at Krav Maga Minneapolis in 2008, when he was still an active agent. He trained consistently for three years, and then off and on, for another five years until he moved to Washington DC. He retired from the DEA after 22 years of service.

"Krav Maga is a practical, easy-to-learn defensive tactics system essential for street survival in today's high risk environment," Canestraro says.

The ramifications of shooting a suspect for any law enforcement officer, even

That is where Krav Maga training can potentially help, by giving officers simple, intuitive hand-to-hand skills for those encounters in which an officer cannot shoot or doesn't want to shoot, says Avi Moyal, Chairman of the International Krav Maga Federation.

Moyal travels around the world as the lead instructor of the largest Krav Maga organization, teaching IKMF Krav Maga to law enforcement agencies of all kinds. An equally important part of that teaching, he says, is getting feedback from those departments on the threats they face and the solutions they need to do their jobs. These problems are worked on by Moyal and the IKMF's Global Instructor Team of experts in Israel, to develop simple techniques and improve their law enforcement curriculum. That information is shared with departments around the world through the IKMF's instructor courses, workshops and seminars.

Krav Maga was originally developed for the Israeli military back when Israel first became a nation. Everyone had to be a soldier, so it had to be simple, intuitive and effective for a smaller person fending off a larger attacker. The training incorporates stress and multiple attacker drills that are built around real-life situations.

Saint Paul Police Sgt. Murray Prust attended his first Krav Maga training at a seminar with Avi Moyal at Krav Maga Minneapolis in 2010. He was hooked, and said he had never trained like that before. He subsequently completed three levels of the IKMF's Law Enforcement Instructor training, and helps teach for Krav Maga Minneapolis.

The system is modern, and constantly being updated and adapted to the many civilian, law enforcement and military sectors.

IKMF instructors take the training to environment: cars, buses, air planes, ships, theaters, night clubs and bicycles.

As an IPMBA instructor and BRRT team leader, Prust helped Krav Maga Minneapolis instructors Gail Boxrud and Dante Pastrano develop their program: Krav Maga for Public Safety Cyclists.

Krav Maga for Public Safety Cyclists training focuses on those situations when

they are more likely to be attacked: slow speed patrols in crowded areas. This training takes you "from bike to fight" by combining IPMBA dismounts with Krav Maga law enforcement techniques such as protecting your gun; defending

against common strikes, grabs, chokes, knife attacks, both while standing and while on the ground; and gun threats and helmet grabs.

"The awesome part about Krav Maga with bicycles is that it can be applied to civilians, medics and police officers with only a few tweaks," Prust says. "All of my police instincts would tell me to ditch the bike if I was involved in some type of dynamic encounter." But the bike can also be a great tool for self-defense and police work.

"With Krav Maga, we introduce techniques that help you protect yourself, and may allow you to use a lower level of force to control the situation," Prust says.

Krav Maga Minneapolis instructors Gail Boxrud, ranked Expert 1, and Dante Pastrano, ranked Expert 2, are certified by the International Krav Maga Federation to teach civilians, law enforcement, VIP protection, women and children. They are also certified Security Cyclists by IPMBA. They developed a series of Krav Maga on Bicycles seminars for civilians first, then worked with Prust to develop the law enforcement version. They started teaching the workshop at the annual IPMBA conference in Saint Paul in 2012 and have offered it each year since.

They look forward to delivering this effective training to the 2020 IPMBA Conference, June 1-6, 2020, in Dayton, Ohio.

Photos by Raymond Cervantes, Fort Worth Police Department.



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Ironman Texas North American Championship: an EMS Challenge

by Brian Gillman, *EMSCI #189T-B*
Cypress Creek (TX) EMS
IPMBA Conference Coordinator

It's the beginning of 2019 and Cypress Creek EMS is in the planning stages for our 9th Ironman North American Championship. This race is held annually in the heart of The Woodlands area north of Houston in late April to late May. It requires the cooperation of several public safety agencies to protect and serve the nearly 10,000 participants, spectators and visitors who attend. As we prepare, I reflect on all the successes we have had over the years due to great cooperation and planning.

Over the years, we have staffed two medical tents with physicians, nurses, athletic trainers and the paraprofessional hospital staff necessary to staff more than 100 beds and bring first class medical care to the athletes. The local lifeguard and water rescue volunteers, supported by dive teams and water rescue teams, provide a flotilla of kayaks and paddle boards to help athletes in the water. Among all our partnering Fire and EMS agencies, we have staffed fifteen dedicated ambulances, four supervisor vehicles, ten transport carts, and upwards of twenty-five bike teams to assist the athletes, spectators and the general public along the entire 140-mile course. Our medical team will make between six hundred and a thousand medical contacts during this event.

In 2017, all the planning and preparation really served us well. That morning, all our early morning

teams had deployed to support the swim portion of the event. The almost 2800 swimmers enter a local lake on the north shore, swim to the south and then enter a narrow canal that leads to a retail area in the heart of the Woodlands, where they transition to the bike segment of the race.

Approximately two hours into the race, we received a call that a swimmer was in distress in the canal not far from the swim transition area. Two advanced life support bike teams working the waterway canal were dispatched. Further information came in that the patient was located at the canal level under one of the overpasses and that a bystander had pulled the athlete from the water.

The first bike team arrived quickly and went on the scene with an adult male athlete in cardiac arrest. Advanced life support care was immediately started, additional resources were requested, and a second bike team and medical utility cart arrived on scene within the first minute of the call. An ambulance was dispatched at the same time, but was caught in traffic on the overpass above due to traffic rerouting for the race course. The patient was treated on scene and eventually transported to the hospital. Although the outcome for the patient was not what we had worked and hoped for, the response from all of the teams was remarkable. This was our first fatal incident that our race had experienced.

As we looked back on this incident and measured it against our goals for such events, we were proud of our team's performance. At most of our events where bike teams and medical carts are deployed, it is our goal to be able to provide advanced prehospital care to a patient within ninety seconds of a call for help. Our first team arrived within thirty seconds, with advanced care initiated almost immediately. The first team was staged on the



side of the canal that the patient was extracted to. They happened to be just above the patient location and navigated a trail system quickly down the canal. The initial team comprised an experienced paramedic who had been on our bike team for many years, and a relatively new EMT that had just completed his IPMBA training a few months prior.

The second team had been staged on the other side of the canal and quickly responded to the incident, adding two more seasoned paramedics to the call. The medical cart was at a staging location on the same side of the canal as the incident and two paramedics responded with additional medical and extrication equipment. The response would have been delayed if they followed paths to the lower deck, so they responded to an access point directly above the patient and carried the necessary equipment down the short, steep hill to meet up with the other crews. By this time, the streets above were congested with Saturday morning traffic that had been rerouted due to the race course and the police response to the incident.

The ambulance, from another agency, was delayed for several minutes due to traffic standstill, then had to use the path system to bring down a stretcher for transport. By the time the transporting ambulance crews arrived on location, all critical medical interventions were complete. The patient received CPR within forty-five seconds; an AED was deployed; intubation, IV access and medication administration was within minutes of

(Continued on page 32)



Ironman Texas: An EMS Challenge

(Continued from page 31)

arrival and continued through transfer of care to the transporting unit. The bike team deployment worked perfectly, as planned, for this type of incident. They were able to quickly access the patient and begin critical patient treatments, notify command of additional resources needed, and finally interact and transfer care to a transport unit.

The multiple agency, multi-discipline response was seamless due to solid pre-planning, strong incident command and perfect performance from all the teams on scene. All the teams were quickly back in-service and responded to

dozens of calls during the next fourteen to twenty-two hours.

The average standard response time for a 911 ambulance with this level of pre-hospital care is seven to eight



minutes in this general area, but here you receive treatment within seconds.

This again reinforces the benefit to the public of having public safety responders deployed on bikes and

other non-conventional units in certain areas and during events such as this massive race. The four months of pre-planning by all the medical partners – fire department, EMS agencies, hospital staff, water safety crews, athletic trainers and Ironman staff – make this one of the safest events I have the privilege of working with every year.

As we conclude the planning and begin the implementation for the ninth consecutive year, I look forward to working with the amazing group of professionals.

Brian has more than 20 years' experience as a field paramedic and Fire/EMS dispatcher with Cypress Creek EMS in Spring, Texas. He is the logistics coordinator for the CCEMS Bike Team and has been active on the team since 2005. He has been an IPMBA Instructor since 2007, a maintenance officer since 2008, and teaches 2-3 IPMBA Courses annually. He was elected to the IPMBA Board in 2014 and has held the positions of Membership and EMS Coordinator. He currently serves as Conference Coordinator. He can be reached at bgillman@pharmacal.com.

Photos courtesy Cypress Creek EMS.

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Indeed, it is the IPMBA Instructor's responsibility to ensure a safe and productive training environment for every student. Preparation and planning are the foundation for a successful class. Those two things begin well before the start of instruction on the first day, as even an ounce of prevention can go a long way.

This article focuses on "survival essentials" – items instructors should carry while teaching – and a questionnaire used to assess student bikes before riding. The survival essentials will help you – the IPMBA Instructor – mitigate some of the "what if's" when teaching. The lists may be used in tandem.

Instructor Gear

In bike training, problems can appear unexpectedly and take on a variety of forms. As with falls, "It's not a matter of 'if', but 'when'." Some snafus can be prevented, but not all circumstances can be predicted. Hence, there is no "ultimate" gear list.

Thus, it can be said that IPMBA Instructors are obliged to carry certain precautionary materials for student safety and to help minimize delays. Some materials are already listed in the IPMBA ITK checklists (and are expounded on below) and should be standard equipment for all on-bike skills, including road rides. Whether you choose to carry them on-bike or on-body, these items come recommended by instructors, *whenever* you are conducting bicycle training.

Remember: A working brain is the instructor's most important asset. The ability to troubleshoot, use common sense, and draw on experience are to be relied on, particularly if an EMS provider or a shop mechanic is not readily available.

- First aid supplies: for cuts and abrasions (BLS supplies can be carried by licensed EMS riders).
- Sunscreen and bug repellent: to prevent and relieve pain.
- Disposable gloves: for administering first aid, working on bikes, and handling filthy traffic cones.
- Cell phone or radio: to summon additional resources or communicate logistics.
- Camera or camera phone: for memorable moments or post-crash documentation.
- IPMBA Incident Report forms and a trusty pen: in the event of property damage or injury.
- Pocket class schedule: a cheat sheet to keep everything from going catawampus.
- Simple tools for common repairs and adjustments: multi-tool with built-in universal chain tool and spoke wrenches preferred.
- Spare tubes: Presta and Schrader, with adaptor for converting one to the other.
- Tire levers: wide versions, which are tubeless tire compatible.
- Patch kit / tire boot: glue and glueless.
- High volume mini-pump: capable of inflating both types of valves.
- Suspension pump with gauge: to tune and prevent forks and rear shocks from bottoming out.
- "Zip" ties and duct tape: for assorted emergency repairs.
- Light system, traffic vest and whistle: for conspicuity's sake!
- Lumber crayons or sidewalk chalk, tennis ball halves: for the impromptu obstacle course.
- Tape measure: to maintain standards and settle disputes.
- Assorted bolts and fasteners: for racks, toe clips, bottle cages, cleats, etc.
- Optional: Fiber Fix Spoke (to temporarily replace damaged spokes), chain master links, tube valve cores and valve core tool, motivational stickers for helmets, etc.

Student Bicycle Assessment Questionnaire

Despite having been provided with a list of required equipment prior to class, students will arrive on day one with bicycles that are unsuitable for training or public safety use. The standards set for a bicycle that will be used in class are non-negotiable and are for the safety of the rider and others. Even the smallest undiagnosed defect in a bicycle can have catastrophic consequences.

We recommend that you set aside time on or before the first day of training to perform a complete and thorough check of every student bicycle. Below is a list of bike parts the Instructor should troubleshoot prior to allowing use of the bike in training. It has been designed to help you identify potential problems before they arise. *This list is not all-inclusive and some remedies may require more than basic bicycle mechanic skills.*



Bike Frame

- Is the frame size appropriate for the rider? Consider having each student check in with their bike on the day before class starts, so an instructor can visually assess bike and rider. Otherwise, this may not be determined until Bike Fit on day one.
- Is the frame free from defects or damage?

Pedals

- Are the pedals in good condition?
- Are they properly mounted? Are the pedal components functional and in good condition?
- Is the rider familiar with the pedal system and its use? Experience and proficiency may not be proven until practice on the first day. Consider querying the students before class starts.

(Continued on page 36)



(Continued from page 35)

- If the bicycle is equipped with either clipless or platform pedals, does the rider have compatible shoes? This may not be revealed until practice on day one. Consider inquiring before class starts.

Brake and Shifter Cables

- Are the brake and shifter cable housing free from deformities such as cracks, kinks, or breaks? Are any of the housings too short or too long? Do the cables and ferrules appear to be free from corrosion?
- Are there any exposed cables with frays, broken strands, or visible rust?
- Do brake and shifter cables move freely within their cable housings? Do the brakes and shifters function properly? Are they properly mounted? Are the shifts accurate or do they hesitate between gears?
- Do the brake levers pull within one thumb's width? Consider making fine adjustments for either brake or shifters to help the student achieve optimal use, or otherwise have the student perform barrel adjustments after the lesson on Bicycle Maintenance and Repairs.

- Are all brake and shifter cables attached and routed properly?

Chain

- Are there any loose or bent chain links?
- Is there any visible rust?
- Does the chain glide smoothly and unobstructed in a straight path from the chain rings to cassette? Do the derailleur limit adjustments prevent the chain from dropping from either the lower or upper gear?
- Is the chain "stretched" (elongated) more than one eighth of an inch past its original length? A ruler or chain length gauge can be used to determine this.

Chain Rings and Cassette

- Are there any bent, broken, missing, or badly worn teeth on either the chain ring or cassette?
- Do the chain rings and cassette appear to be clean and free of debris?
- Do they move smooth and freely? Do they appear to be mounted properly?

Tires

- Are the tires properly mounted on the rims?
- Are there any worn or bald spots in the treads? Are there any areas where the belt wires are exposed, or other obvious

deformities? Is the tread in good condition and conducive to the training surfaces?

- How do the side walls of the tires look? Is there obvious dry rot? Are there abraded or worn areas from rim brakes?
- Are the tires an acceptable width?
- Are the tires inflated to the manufacturer's recommendations? This may need to be verified during the ABC Quick Check.

Suspension

- Does the suspension bottom out with little weighted pressure?
- Does there appear to be adequate air pressure in either the fork or rear shock? If not, does either retain pressure when inflated?

Spokes and Rims

- Are there any loose, bent, or missing spokes? Are the spokes properly tensioned?
- Do the rims have any worn or dented areas?
- Are they warped and in need of truing? Can they be trued?

Miscellaneous

- Place tag(s) describing any concerns, deficiencies and corrective actions on every bicycle. This will help create a near risk-free training experience and provide the student with useful feedback and training. Require students to have questionable bikes repaired or replaced before riding on day one, even if it means taking the bike to a mechanic over lunch. Loaner bikes may be an option as well.

Conclusion

Debauch, boondoggle, kerfuffle, brouhaha, or snafu: these survival essentials can help you prevent it. They do not take the place of a resourceful and crafty instructor whose responsibility it is to conduct a safe and productive bike class. However, having the tools and knowledge to perform these checks and balances prior to training, will set you – the IPMBA Instructor – on the path toward assuring a safe, productive and meaningful training for everyone involved.

The members of the IPMBA Education Committee who contributed to this article are volunteers who served under the current Board Member and former Education Director, Michael Wear. Do you have more to add to this article? Share your input via education@ipmba.org.

Photos courtesy the contributors.



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(Continued from page 1)

stop by and see what was going on. He said "Sure", so on the morning of April 20, 2012, I set out across northern Maryland and into southern Pennsylvania, to a farm outside of Fawn Grove.



TBM Avenger opened up for maintenance

The farm belonged to Jack Kosko, who was an Avenger radioman in World War II, flying off the USS Langley in Torpedo Squadron 23 from February through May 1945. Jack was a remarkable individual.

A carpenter by trade, he was considered a "car guy" for much of his life, having amassed a collection that once numbered 21 cars. In 1996, at age 71, he decided he was going to restore an Avenger to replicate the one he flew in World War II. Now, mind you, Jack had no experience with airplanes up until this point. People asked him, "How do you restore an airplane?" He replied, "You just do it."

In keeping with the famous line from the movie *Field of Dreams*: "If you build it, they will come". Once word got out that Jack was restoring an Avenger to airworthy condition, all kinds of individuals came out to volunteer with him. Almost all had military experience; some were World War II veterans. After about six years and 23,000 man-hours, the Avenger was delivered to the Mid-Atlantic Air Museum in Reading, Pennsylvania, where it was flown and added to their collection.

Shortly after the first Avenger left, the group found out about a second Avenger belonging to the Commemorative Air Force (CAF). It was purchased in 2001 for one of their local chapters in Frederick, Maryland. When the chapter folded, the plane was moved to Hagerstown, Maryland, where it languished for several years. The plane was then assigned to the CAF's Capital Wing in Culpeper, Virginia, but it needed to be restored.

Jack offered to restore the plane for the CAF, if they would pick up the cost of the materials. A deal was struck and the second Avenger was delivered to Fawn Grove.

By the time I arrived in 2012, the Avenger was nearing completion. The group was more than willing to let a "bicycle guy" come and join their ranks; after all, Orville and Wilbur Wright started as bicycle mechanics, too! The average age of the volunteers in Jack's group was 84 years old, so I was quite the "baby". I would joke that this was my mid-life crisis; while many men "of a certain age" try to hang out with women half their age, here I was hanging out with men twice my age!

The Avenger was moved to Hagerstown for final assembly and made its first post-restoration flight on April 18, 2014. After putting up the requisite number of hours to obtain its full flight certification, the plane went to its new home in Culpeper.

I remained with Jack and his group for a few more years, as they were working on a Cessna Bobcat for their next project. Unfortunately, health issues finally caught up with Jack. He sold the farm in 2016; the Bobcat went to another collector in Massachusetts. In May 2017, Jack Kosko passed away at age 91.

In the aftermath of his passing, I felt the best way to honor his legacy was to join the group that now had the second Avenger, the CAF's Capital Wing in Culpeper, Virginia. I "pulled the trigger" and joined the group.

The CAF, or Commemorative Air Force, was founded in 1957 by a group of pilots in Harlingen, Texas. They wanted to fly WWII fighters, but even though it was really inexpensive by today's standards, they couldn't individually afford it, so they went in together and bought a P-51 Mustang. When they flew it, people would run outside to see it. Pretty soon they realized that it would be a lot more fun to have two planes flying that could play dogfight, so they went looking for another aircraft.

CAF Meets IPMBA:

They discovered that it was difficult to find another WWII aircraft because the surplus aircraft were being scrapped. They were appalled that no-one was saving the aircraft. Even the U.S. military didn't seem too concerned with keeping these machines, which, by most accounts, led to the Allied victory. So, the group switched from aviation enthusiasts to preservationists. They set a goal of obtaining one of each type of World War II aircraft.

Once they had a few Bearcats, a Mustang, and a P-40, they started adding bombers to the collection as well. They began doing airshows in the 1960s. The concept of having multiple aircraft in the air, telling a story and showing off the impressive aircraft was well-received by crowds. CAF airshows became legendary, and the CAF was invited to various locations to perform a World War II Flying Circus act.

Today, although the past 60 years have wrought many changes, the CAF is still much the same. The organization is driven by people who are very passionate about keeping alive the history of World War II and America's airpower, as well as the thousands of stories of the men and women who built, flew and maintained these aircraft. Phrases like "Keep 'em Flying" and "Lest We Forget" are still the battle cries of CAF members.



The Capital Wing Hangar

It is through the support of thousands of volunteers, donors, airshow patrons, and educators that the CAF remains the "World's Largest Flying Museum" and one of the most impactful World War II organizations.

The CAF currently has a membership of about 12,000 people in 80 different units (Wings) throughout the country and boasts more than 170 aircraft. Unlike the group

(Continued on page 39)

From Bicycles to Warbirds

at Jack Kosko's hangar, the average age is 57 years old, and has been trending downward as many of the original World War II generation volunteers have passed on and younger volunteers have taken up the challenge.

The Capital Wing in Culpeper, Virginia, is representative of one of those units. The Capital Wing is currently responsible for four aircraft. Besides the Avenger, the Wing has an L-5 Sentinel (a small observation/liason type plane) and a Vultee BT-13 Valiant trainer that was used at Tuskegee Field during World War II to train pilots who would ultimately become the Tuskegee Airmen. The last plane is a replica of a Japanese Val dive bomber. This was one of the planes assembled for the movies *Tora, Tora, Tora* and *Midway*, the TV miniseries *War and Remembrance*, and other appearances.

These airplanes are not "hangar queens". They go out to various airshows throughout the spring, summer and fall. The Capital Wing's Avenger, now known as "Doris Mae", has a very active airshow schedule and is one of the busiest Avengers on the East Coast. "Doris" has made appearances at airshows from New England to Florida, has flown over football stadiums, performed flyovers and simulated dogfights over the S.S. John W. Brown (a restored World War II Liberty Ship that cruises the Chesapeake Bay), and participated in the 70th Anniversary World War II Victory Flyover in Washington, D.C. in 2015. "Doris" averages about 50 hours of flight time per year. During the winters, she undergoes maintenance to prepare for the next flying season.

While working to keep these planes flying is a major focus of the group, there are literally dozens of roles to be filled that do not necessarily involve mechanics, from bookkeeping to selling souvenirs during airshows. If you're willing to come out, the Wing will find a place for you.

So, why should IPMBA members consider joining the CAF? First off, being around these planes is just really cool. Unlike in museums, where you see the planes from behind stanchions, when you are with a CAF wing, it is literally hands-on. You can touch the planes, climb on the planes and go inside the planes. The other thing you notice is that being airworthy, these planes are alive. The distinctive smell of gasoline, oil, hydraulic fluid and paint permeates the hangars where the planes live.

More importantly, CAF members share the same values of dedication, teamwork and patriotism that are at the core of law enforcement. Many members are ex-military themselves, a profession which has always been closely related to law enforcement. In a world where the profession of police officer gets

Becoming a CAF Colonel entitles you to receive a CAF name tag, wings and commission certificate, become a member of the local CAF Wing, fly in CAF aircraft on a space-available basis as a qualified crew member, and receive the monthly member magazine *Dispatch* and gift shop discounts.



The TBM Avenger taxiing the runway

demonized in news and social media, the CAF provides an environment where LEOs are welcomed and supported. On Open Hangar Days, when, as the name suggests, the hangars are opened to the public, LEOs can bring their families and know that they are in an environment that supports their efforts every day.

Finally, being part of the CAF means that you are part of preserving history. More than 98 percent of the World War II generation – our "Greatest Generation" – have now passed on. The CAF is as dedicated to preserving their stories as they are about preserving the aircraft they flew in. For, without the human part of the equation, the CAF would only have collection of old planes. It is the exploits of the people who flew these planes that make them truly come alive.

Joining the CAF is not cheap. Annual dues to become a CAF Colonel are \$200, which makes IPMBA dues seem like an absolute bargain! The reason it is set so high is two-fold. First, restoring and maintaining aircraft is a very expensive proposition. For some of the larger aircraft, operational costs can be more than \$2000 per flight hour. Replacement engines cost anywhere from \$60,000-\$100,000 dollars.

The second reason is that the high dues separate the "tire-kickers" from those who are genuinely dedicated to preserving these aircraft. There are also separate dues to the local Wing, which tend to vary, but the dues for the Capital Wing, for example, are another \$50 per year.

Above all, it's about keeping these flying treasures in the air. Sure, you can go to a museum and see a historic plane in person. That plane, though, is inert. When you see one of these planes fly, history comes alive. Children and adults alike get to see, hear and even feel what it was like when these planes were called upon to protect our Country's freedom. Knowing you're part of the team that helped put these planes in the air is a great feeling, too.

I can tell you there are few things that make my heart sing with pride like seeing the Avenger that I helped restore wowing the crowds and reminding a younger generation of the courage and dedication of those who fought in World War II.

If what I've written sounds interesting to you, please check the Commemorative Air Force website at www.commemorativeairforce.org.

Who knows, maybe I'll see YOU as a fellow CAF Colonel at an upcoming airshow!

Besides being a Colonel with the Commemorative Air Force's Capital Wing in Culpeper, VA, David is also a 12-year volunteer with the Maryland-National Capital Park Police, Montgomery County Division and the new writer of IPMBA's "Gears and Gadgets" feature. He can be reached at onyxsax@aol.com.

Photos courtesy David Cohen.

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