NCEMS Foundation
2010 Conference
Baltimore, MD

EMS Bike
Issues
THANK YOU!

To President George, Vice Pres. Scott, Sect. Joshua and the entire staff of the NCEMS Foundation

To YOU – the participants at this conference and the agencies you represent

To the alum of past conferences
EMS Bike Issues

- Why An EMS Bike Unit
- How To Start An EMS Bike Unit
- Training Issues For EMS Bike Units
- Equipment Issues For EMS Bike Units
Why An EMS Bike Unit?

- As a stepping stone to the future!
- To reduce response times of the existing EMS response agency
- Provide early defibrillation
- Reduce the burden on the ambulance
Why An EMS Bike Unit (cont.)

- To gain access to specific areas that are not accessible by an ambulance
- To staff specific events on the campus
- As a means of public relations
- To obtain visibility for the EMS Unit
Gaining Access
Why An EMS Bike Unit (cont.)

- Low costs - $$$ for an ambulance, QRS vs. bike
- Ease of maintenance
- Staff morale booster
- No pollution
How To Start An EMS Bike Unit

- Identify the Need - the stats!
- What is the average response time?
- How many calls need an ambulance – the equipment it contains or for transport?
How To Start An EMS Bike Unit (cont.)

- Determine BLS vs. ALS

- Medical supplies - quantity, diversity, protection and security (of drugs or narcotics)

- How many days, special events or responses to be used at
Training For EMS Bike Units

The 4 R’s of training:

- Recognized
- Recent
- Relevant
- Realistic
Training For EMS Bike Units (cont.)

Recognized

In the EMS field, curriculum and instructors are recognized by NREMTs, State DOH’s or other certifying agencies.

Training for EMS Bike Units also needs to be recognized by an authorizing agency.
Training For EMS Bike Units (cont.)

- Recognized (cont.)
- International Police Mountain Bike Association
- International Association of Medical Bike Units
- In-House EMS Bike training
Training For EMS Bike Units (cont.)

Recognized (cont.)

IPMBA

Police on Bikes training since 1993
EMS on Bikes training since 1997
basic police/EMS cyclist class is 32 hours
Public Safety Cyclist II class since 2003
Training For EMS Bike Units (cont.)

- Recognized (cont.)

- IAMBU

  Bike Medic Provider training since 1999
  basic course is 24 hours
  part of training is scenario responses
Training For EMS Bike Units (cont.)

- Recent

Static vs. Dynamic

Static: philosophy of training is

‘ if it ain’t broke – don’t fix it ’
‘ we have always done it that way ’
‘ don’t rock the boat ‘
Training For EMS Bike Units (cont.)

Recent (cont.)

Static vs. Dynamic

Dynamic: dictates that the curriculum and the instructor evolves and changes with new information, technology and techniques
IPMBA’s ‘Complete Guide To Public Safety Cycling’ has been updated and expanded (from 256 pages and 130 photos) and was distributed in the Fall 2007. Available for purchase at www.ipmba.org

IPMBA’s web page is consistently updated with the latest information www.ipmba.org
Training For EMS Bike Units  (cont.)

Recent  (cont.)

Dynamic

IPMBA instructors must teach one course per year to maintain instructor authorization.

IPMBA has held annual conferences since 1993 with the best cadre of international instructors period!
Training For EMS Bike Units (cont.)

- Relevant

There Are 2 Parts of Your Job

Getting to the scene of the emergency safely

Being able to render medical care to those in need
Training For EMS Bike Units (cont.)

Relevant (cont.)

Getting to the scene of the emergency safely:

Proper gear selection - the ‘Good Spin’ concept

Proper braking techniques - routine and emergency
Training For EMS Bike Units (cont.)

Relevant (cont.)

Getting to the scene of the emergency safely:

- Slow speed bike handling skills - the balance and cone course drills
- Cycling in ‘emergency response mode’
- Off-road riding skills
Training For EMS Bike Units (cont.)

Relevant (cont.)

Police Officer James C. McBride
Metropolitan Police Department District of Columbia

25 year old male  2 years of police service

Bike Patrol Officer - Killed In The Line Of Duty

August 10, 2005
Training For EMS Bike Units  (cont.)

Realistic

Does the bike training environment reflect that in which you will be responding?
Training For EMS Bike Units (cont.)

- **Realistic** (cont.)

- **Curbs:** descents, ascents, parallel, perpendicular

- **Stairs:** carry techniques, descents, ascents

- **Urban Obstacles:** common hazards encountered
Stair Descent
Training For EMS Bike Units (cont.)

- **Realistic** (cont.)

- **Crash Avoidance Skills:**
  - look back exercises; ‘quick-turns’;
  - maximum braking techniques

- **Crash Survival Skills:**
  - are they taught – are they practiced?
Crash Survival Skills
Training For EMS Bike Units (cont.)

- The INSTRUCTOR must be a PECH
- Projection
- Enthusiasm
- Conviction
- Heart
EMS Bike Unit Equipment

A Juggling Act

- What You Have Currently
- What You Want In The Future
- Your Ability To Get What You Want
Is This What You Want?
EMS Bike Unit Equipment (cont.)

Testing and Evaluation:
Before you buy anything, make inquiries as to who is using the product and what are the good / bad features about it.

‘do not re-invent the wheel’

SWAG
Do not be afraid to ask
The Bicycle

Frame material:

- steel - strong, does not catastrophically fail
  heavy, subject to the elements

- aluminum - (either 6061 or 7005) lite-weight, does not rust
  no warning before failure, transfers road vibrations

- titanium - super strong but who can afford it?
EMS Bike Unit Equipment (cont.)

The Bicycle (cont.)

Derailleur Systems

The drive train of the bicycle is one of the most important components and allows you, with proper gear selection to, get into that 'Good Spin' mode - unless you have a single speed bike.

Recommendations:

Front - Shimano Deore or SRAM 5.0 series
Rear - Shimano LX or SRAM 7.0 series
The Bicycle (cont.)

The Wheel Assembly

The two wheels of the bike will be supporting all of the weight (rider + equipment) while the bike is in motion and absorbing a majority of the vibrations caused by the surface being traversed.

Recommendations:

Combination type tread pattern; minimum width 1.75”;
36 spokes of 18 gauge stainless steel (triple weave pattern);
double walled rim; tire insert; Presta valve inner tube
EMS Bike Unit Equipment

The Bicycle (cont.)

**Shock Systems**

Traditional front suspension fork systems absorb road vibrations and reduce fatigue but causes a loss of energy in forward movement.

‘Dial-out’ front suspension systems as found on Cannondale and Fuji for when not needed.
EMS Bike Unit Equipment (cont.)

- **Accessories**
  - Kickstands
  - Racks
  - Gear Bags
EMS Bike Unit Equipment (cont.)

Kickstands

Considerations:

Load capacity – ability to support the weight of the bicycle and the EMS gear being carried.

Single contact point with surface

Dual contact point with surface
EMS Bike Unit Equipment (cont.)

- **Kickstands** (cont.)
- **Greenfield** single point contact
- **Tranz-X** single point contact
- **Pyramid Pro** single point contact
- **Bell** single point contact
- **Pletscher** dual point contact
Rear Racks

Considerations:

**Weight Capacity** - must be able to support the weight of the medical equipment being carried.

**Strut Design** - must be able to prevent the pannier bags from draping into the wheel assembly and damaging the spokes.
EMS Bike Unit Equipment (cont.)

Rear Racks (cont.)

Considerations (cont.):

Frame connection point - the bolts connecting the rack system to the frame of the bike must be of sufficient tensile strength to support the rack and the weight of the medical equipment being carried.
EMS Bike Unit Equipment (cont.)

- **Rear Racks** (cont.)
  - Blackburn EX-1 Expedition 35 lbs capacity
  - Cannondale Model 112440 50 lbs capacity
  - Delta
  - Jandd Expedition 50 lbs capacity
EMS Bike Unit Equipment  (cont.)

- **Rear Racks** (cont.)
  - Old Man Mountain
  - Red Rock  60 lbs capacity
  - Topeak
  - Tourist series  55 lbs capacity
  - OS Tubular  55 lbs capacity
  - Zefal
Bags and Panniers

Considerations:

How much and what type of equipment will the bag be required to carry?

Does the bag or pannier have a specific function?
EMS Bike Unit Equipment  (cont.)

- Bags and Panniers  (cont.)

Considerations (cont.):

Do you really use all of the equipment that is being carried in the bag and panniers?

If not ......
Bags and Panniers (cont.)

Considerations (cont.):

Does the bag or pannier have interior pockets or dividers to accommodate different sizes of equipment?

Are the pockets clear so that the equipment is visible?
EMS Bike Unit Equipment (cont.)

**Bags and Panniers** (cont.)

Considerations (cont.):

If using an ‘open’ or pillow type bag do you place equipment horizontally or vertically?

If stacking equipment horizontally, place seldom used items in the bottom of the bag.
EMS Bike Unit Equipment (cont.)

**Bags and Panniers** (cont.)

Considerations (cont.):

Are the bags / panniers connected to each other or a single unit?

If the bags are connected to each other, how easy is it to disengage them from each other?
EMS Bike Unit Equipment (cont.)

- **Bags and Panniers** (cont.)

  Considerations (cont.):

  How are the bags / panniers connected to the bike rack?

  How easy is it to disengage the bag / pannier system from the bike rack?
EMS Bike Unit Equipment (cont.)

Bags and Panniers (cont.)

- AllTuff, Fort Wayne, IN
- Arkel, Quebec, Canada
- Axiom, Canada
- Conterra, Bellingham, WA
### EMS Bike Unit Equipment (cont.)

#### Bags and Panniers (cont.)

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
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<tr>
<td>Inertia Designs</td>
<td>Santa Barbara, CA</td>
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EMS Bike Unit Equipment (cont.)

**Bags and Panniers** (cont.)

- **Ortlieb**
  - Heilsbronn, Germany

- **R & B Fabricators**
  - Oakwood, OH

- **Thomas EMS**
  - Salt Lake City, UT
THANK YOU NCEMSF


IPMBA Instructor Trainer for
Police and EMS Cyclist programs

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NCEMS Conference Attendees

Have A Great

Remainder of the Conference

See You In 2011