MSF
MOTORCYCLE
SAFETY FOUNDATION®

MSF RETS:
A System Designed to Succeed

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A Better Way Forward

The MSF Rider Education and Training System (RETS)

MSF RETS: A System Designed to Succeed

- How does the MSF define success?
- How MSF RETS is designed to succeed
- Research – to Prove or Improve?

How Does the *MSF* ***Define Success?***

Learning to ride

- Last year, MSF curricula were used to train over 500,000 riders to ride a motorcycle!
- 60% of BRC participants rate their improvement upon completion as 10 on a 10-point, 10 high scale
- **More than 50,000 decided not to continue their pursuit of riding**

Learning to ride

- 5.5 million riders trained to date since 1974
- Yet, less than 50% of on-highway motorcyclists in the U.S. have taken a formal rider training course!
- And, excess capacity has existed in many states for the past 18 months.

Learning to identify and manage risk

- Identifying and managing risk
- Taking personal responsibility
- Being motivated to adopt positive safety attitudes, behaviors and practices

Learning to identify and manage risk

Eyes & Mind

vs.

Hands & Feet

Learning to identify and manage risk

Better to have …

adequate skills with excellent judgment

Than …

excellent skills and questionable judgment

Best…

to have excellent judgment and excellent skills

"Safety Renewal"

Because safe motorcycle riding is dependent on realistic attitudes toward risk-taking and mental alertness, frequent reinforcement of safety-oriented attitudes is essential.

Better to have …

multiple learning experiences

Than …

a single safety training course

And it makes riding even more fun!

How MSF RETS is
Built to Succeed

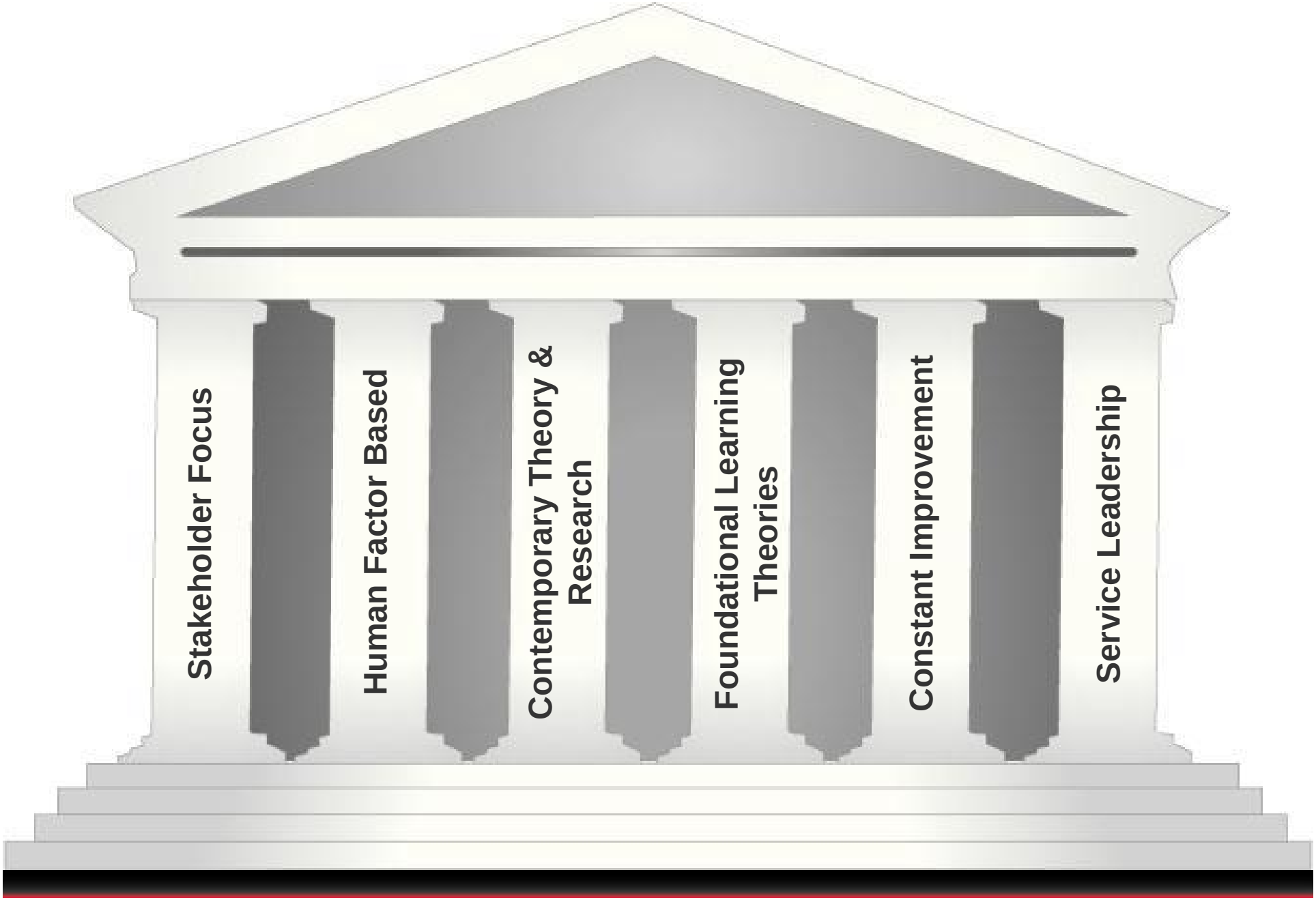
Learning to Ride	Improving the Ride	Specialized Programs	Host-An-Event
Basic *RiderCourse* 1 Standard Expanded Small Group Tutoring Skills Practice Formal Remedial Training Basic *RiderCourse* 2 License Waiver Skills Practice Street *RiderCourse* 1 Basic Bike-Bonding *RiderCourse* Returning Rider BRC 3-Wheel BRC Scooter BRC	Street *RiderCourse* 2 Advanced *RiderCourse* -- *SportBike* Techniques Safe Motorcyclist Awareness and Recognition Trainer (SMART) Ultimate Bike-Bonding *RiderCourse* MSF Kevin Schwantz *RiderCourse* Street *RiderCourse* 3	*Introductory Motorcycle Experience* *ScooterSchool* 1: Introduction To Scooters *RiderCourse* Military Motorcycle *RiderCourse* Military *SportBike RiderCourse* *DirtBike* School: *DirtBike* BRC Trail Riding *RiderCourse* State Education Programs Online Programs	Intersection – *Motorist Awareness* Share the Adventure – *Group Riding* StreetSmart – *Rider Perception* Riding Straight – *Alcohol Awareness* SeasonedRider – *Aging Awareness* Introduction to Motorcycling – *Helping Others*

MSF Rider Education and Training System: A System Designed to Succeed

Modular-type courses provide:

- More breadth and depth
- Multiple points of entry and renewal
- Individualized coaching
- Segmented learning opportunities
- Distributed practice

Rider Education Training System (RETS)



RETS Underpinnings

- Research & Experience
- Safety & Risk Management Principles
- Adult Learning & Development
- Motor Skills Development

Research & Experience

- Haddon Matrix of loss reduction
- Curriculum specifications for prior as well current MSF curricula
- Research including Task Analysis, Photographic Analysis, the Hurt Study, and the Colorado Feasibility Study
- Findings of the 1996 Curriculum Development Team
- Joint SMSA/MSF MRC/RSS Enrollment Questionnaire (1998)
- SMSA Curriculum Advisory Committee (1998)
- MSF / ASU Study (1998)
- MSF Stakeholder Focus Group Research (1998)
- MSF Student Focus Group Research (1998)

Safety & Risk Management Principles/Human Factors

- Rider responsibility & personality factors
- Risk-taking forces – decision-making overall and in moment-to-moment tasks
- Visual perception, cognitive functions, & motor skills aspects

Adult Learning & Development

Including theories and practices of…

- Brain-based learning
- Accelerated learning principles
- Learner-centered instructional techniques

Motor Skills Principles

Key Applications

- Accuracy of skill is of greater importance than speed during initial learning
- Gross motor skills must be attended to first, followed by finer motor skills
- Over verbalization (on the part of the instructor) gets in the way of student learning

"What" vs. "How"

What …

The motorcycle has not changed significantly in 100 years

vs. How …

The method of delivery now reflects the most contemporary research available on adult education and learning

Training Wants vs. Needs

Want vs. Need

Administrators want:

- Easily administered
- Resource efficient
- Standardized delivery
- Focus on skills and tests

Many riders want:

- An inoculation
- A license; avoid DMV
- To have fun

Training Wants vs. Needs

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Many riders want:

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- A license; avoid DMV
- To have fun

Riders actually need:

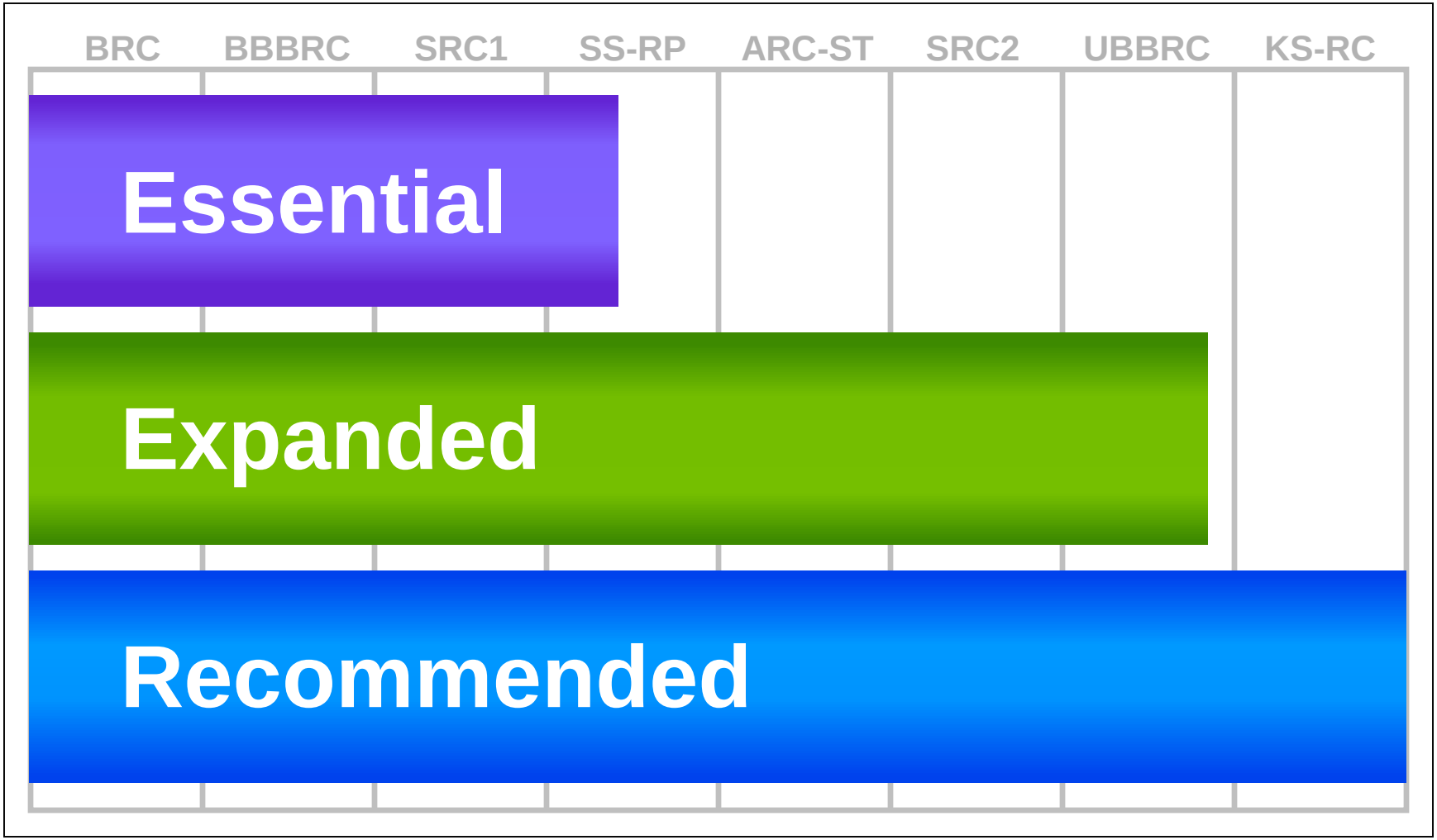
- Knowledge, skills, attitude, habits, values
- Quality education and training
- Risk management skills
- Self awareness
- Self assessment
- Responsible licensing

Training Wants vs. Needs

Constantly Evolving

The New ***MSF CORE***

The New MSF CORE



Essential

- Basic *RiderCourse*
- Basic Bike-Bonding *RiderCourse*
- Street *RiderCourse* 1

Expanded

All Essential, plus:

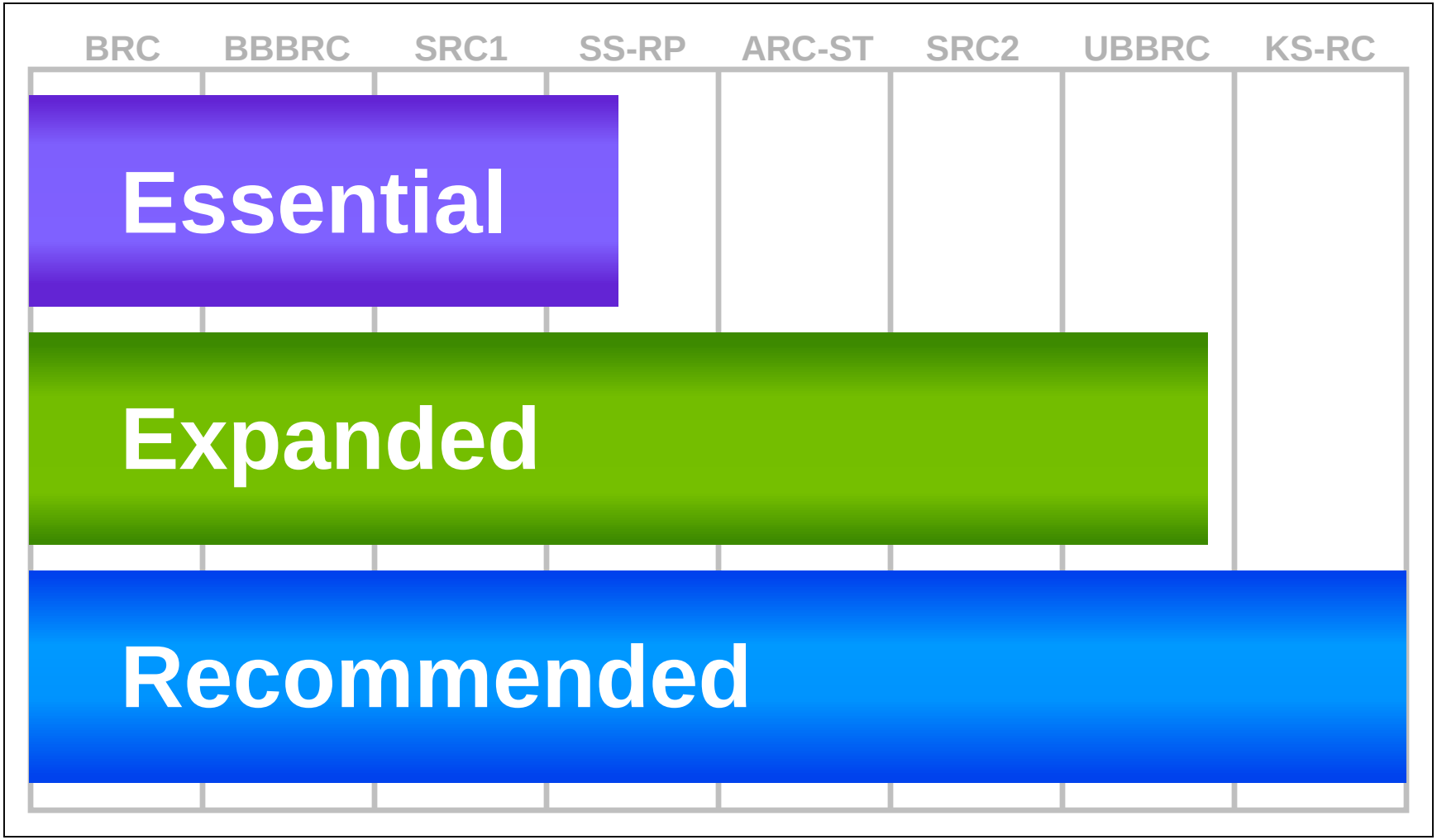
- StreetSmart - *Rider Perception*
- Advanced *RiderCourse*
- *Street RiderCourse* 2

Recommended

All Essential and Expanded, plus:

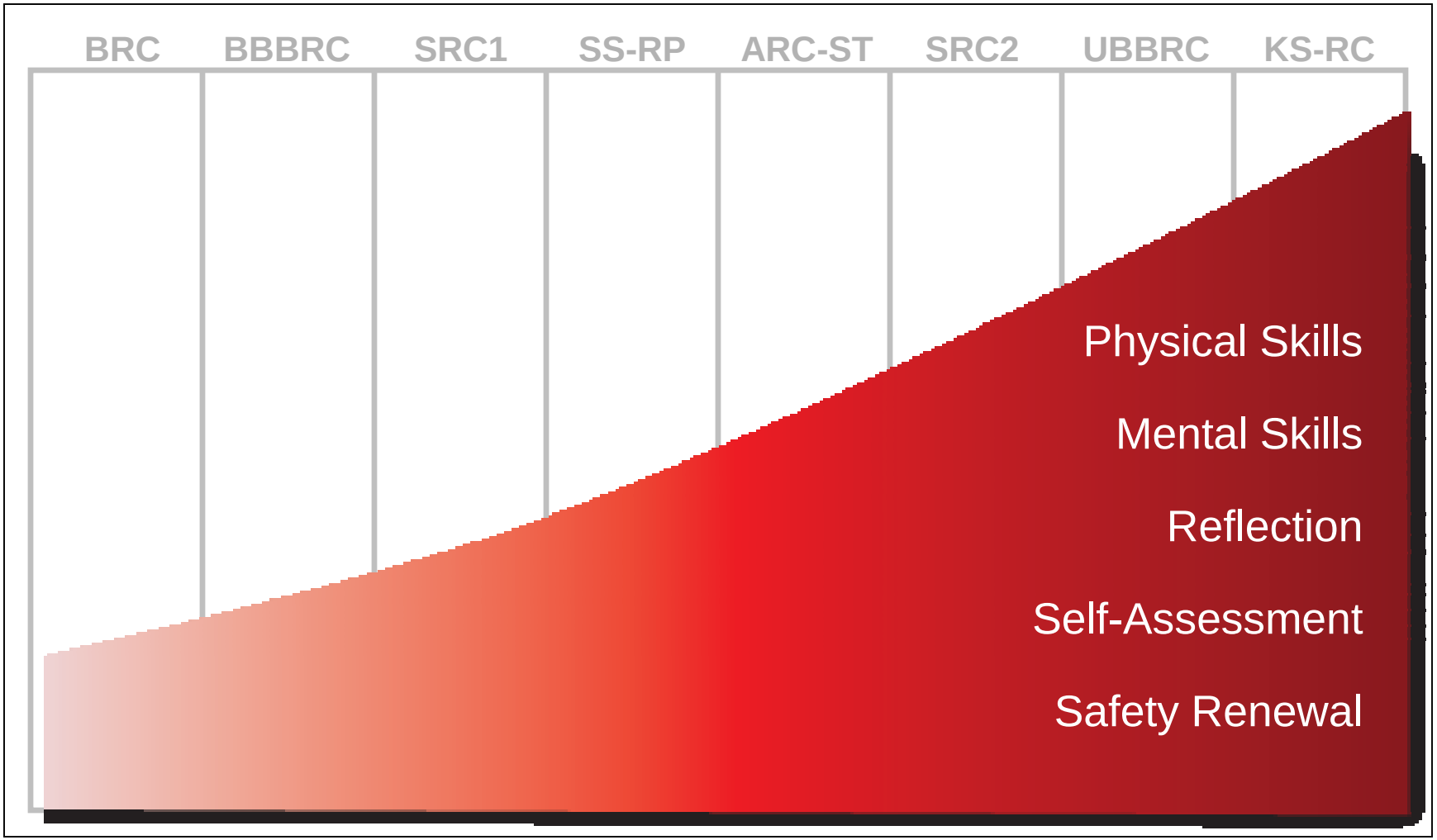
- Ultimate Bike-Bonding *RiderCourse*
- KS-*RiderCourse*

The New MSF CORE



Flexibility for Jurisdictions and Opportunities for Riders

The New **MSF CORE**



Continuum of Learning

Learning to Ride	Improving the Ride	Specialized Programs	Host-An-Event
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Essential Core
BRC1
SRC1
BBBRC

Expanded Core
Essential Core +
SSRP
ARC-ST
SRC 2

Recommended Core
Expanded Core +
UBBRC
KSRC

New MSF Courses

Recently released or near release:

Rider Perception

SMARTrainer

Basic Bike-Bonding *RiderCourse*

Street *RiderCourse*

3-Wheel Basic *RiderCourse*

Scooter Basic *RiderCourse*

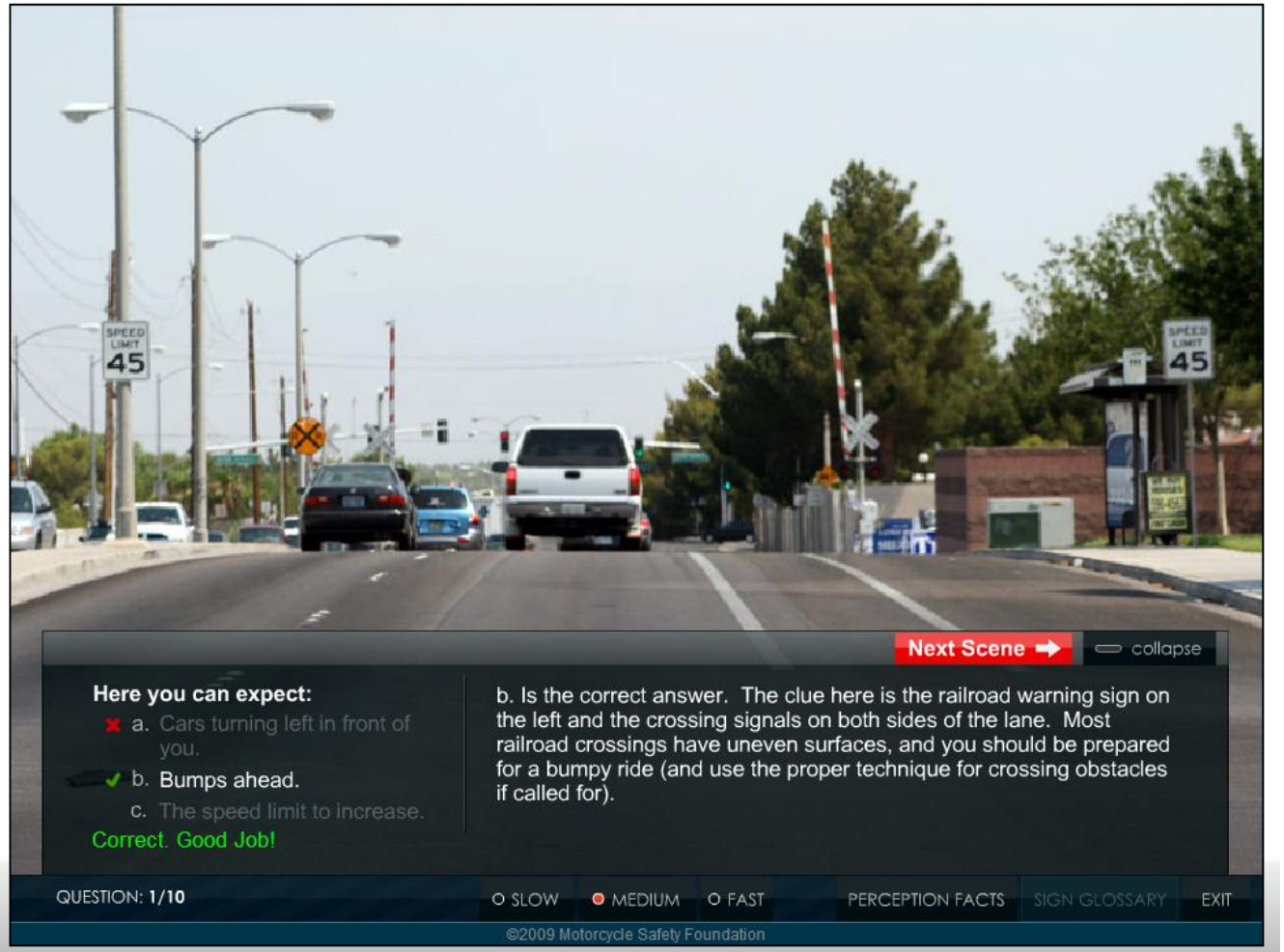
Ultimate Bike-Bonding *RiderCourse*

Military Sportbike *RiderCourse*

Rider Perception

Modern visual technology

Improves rider's perceptual skills



SMARTrainer

Control familiarity

Hazard perception

Risk management

Basic Bike-Bonding *RiderCourse*

Drills on skills

Slow speed focus

Fine motor skills

Street *RiderCourse* ***(SRC 1)***

Light residential riding

Light suburban traffic

Complex traffic situations

3-Wheel Basic *RiderCourse*

Same concepts as Basic *RiderCourse*, now applied to 3-wheel motorcycles

Scooter Basic *RiderCourse*

Same concepts as Basic *RiderCourse*, now applied to scooters

Ultimate Bike-Bonding *RiderCourse*

Patterned after police training courses

Advanced version of the Basic Bike-Bonding *RiderCourse*

Military *SportBike RiderCourse*

U.S. Navy helped pilot

60% enrolled

61% reduction in Navy motorcycle-related fatalities

MSF Ready-To-Use Kits

Intersection – All Roadway Users

Share the Adventure – Group Riding

StreetSmart – Rider Perception

Riding Straight – Alcohol Awareness

Seasoned Rider – Aging Awareness

MSF Support Tools ***and Infrastructure***

Support tools that fully support all MSF curricular programs

- Rider Support and Public Information (www.msf-usa.org)
- Leadership Programs & Partnerships
- Technical Assistance for Training & Licensing
- Government Relations
- Certification Standards
- Professional Development
- Research & Quality Assurance

Thanks to a great network of training providers…

- 9,499 certified *RiderCoaches*
- 238 certified *RiderCoach* Trainers
- Over 10,000 certifications
- 1,070 RERP Sponsors managing 2,505 sites
- State, Military, Other Administrators

Safety Renewal Applies to RiderCoaches and RiderCoach Trainers, too

- Rigorous initial certification process
- Professional code of conduct
- Minimum activity standards
- Held to high standards
- Serve as role models within the system

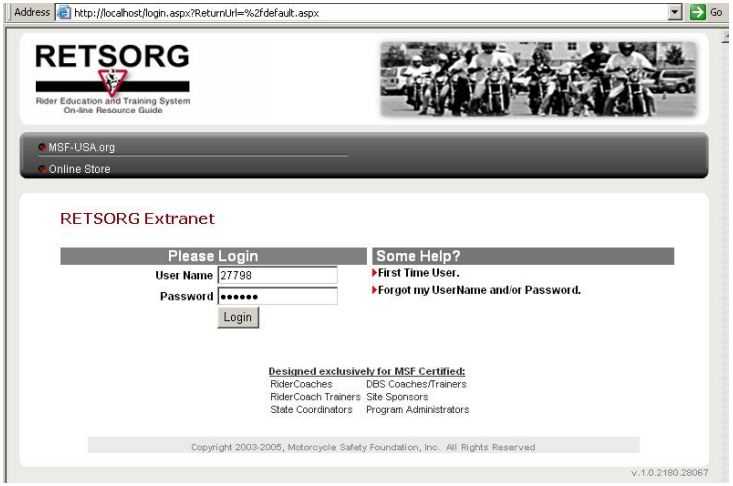
Continuing Professional Development

- Promotes student safety on the range
- Maintains integrity of the curricular programs & quality of the delivery structure
- Communications include RETSORG, *MSF eNews*, Learning Centers, RiderCoach Trainer Clinics, and staff presentations at state updates and conferences

Quality Assurance Module (QAM)

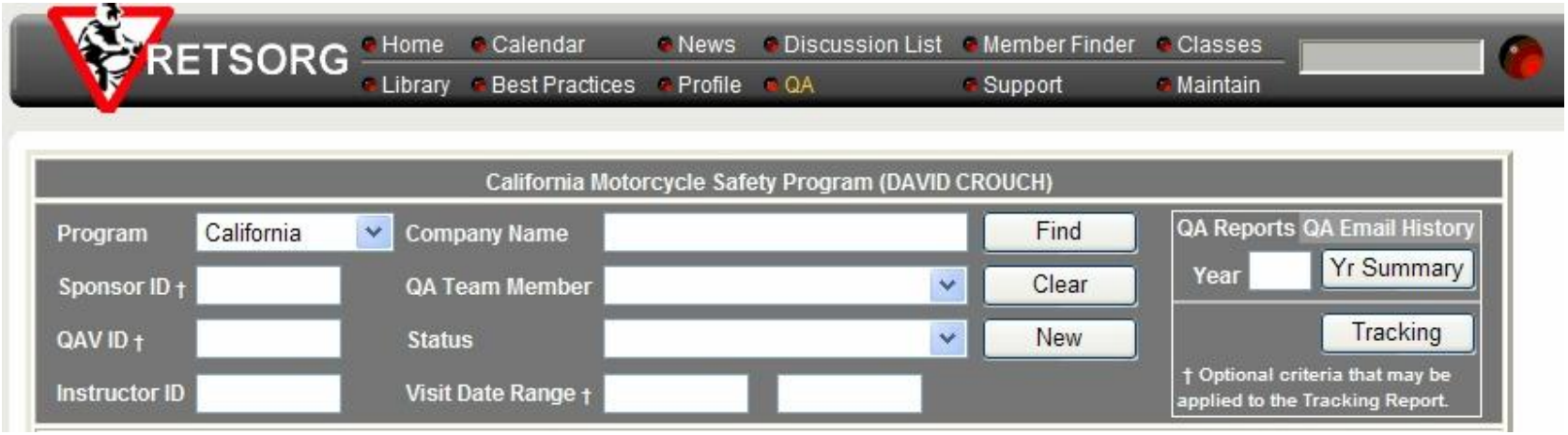
- Research-based, easy-to-use online evaluation system for training sites
- Provides Continuous Loop Improvement
- Offered at the site level regardless of sponsoring agency

QAM Overview



- Electronic, web-based
- Hosted on RETSORG
- Secure Server
- Linked “real time” to main MSF database
- Complete assessment of administrative, classroom, range, & learning environment
- Password-protected access based on individual’s role as determined by group coordinator

QAM Overview



- Yearly progress tracking/compliance issue tracking by site
- Copies e-mailed & saved via PDF – encourages feedback
- Data exported via Excel and text file

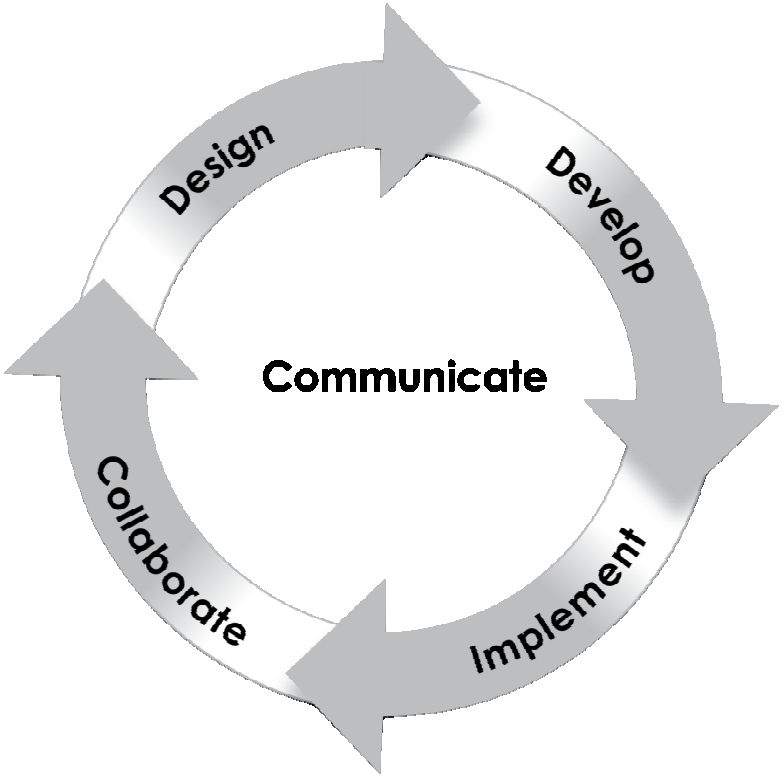
Quality Assurance Module (QAM)

- MSF provides formal training to assist teams with QAM processes
- To date, 22 U.S. entities have adopted the MSF QAM

Research:
… to Prove
…or ***Improve?***

MSF Research/Evaluation

Ongoing research offers MSF opportunities for "continuous loop improvement"



- License Test Validation w/ Pacific Institute for Research and Evaluation (PIRE)
- Cornering Study w/ Virginia Tech Transportation Institute (VTTI)

MSF Research/Evaluation

In 2009 alone, MSF conducted over 35 formal field tests to develop and revise five new curricular programs.

Recent:

- Capacity Survey w/ Irwin Broh
- University of North Carolina – HSRC
- The Discovery Project w/ NHTSA
- Awareness campaign w/ Purdue University
- Cal State University, Fullerton
  College of Health & Human Development,
  Dept. of Kinesiology

The MSF
Naturalistic Study of Motorcyclists

The MSF Naturalistic Study of Motorcyclists

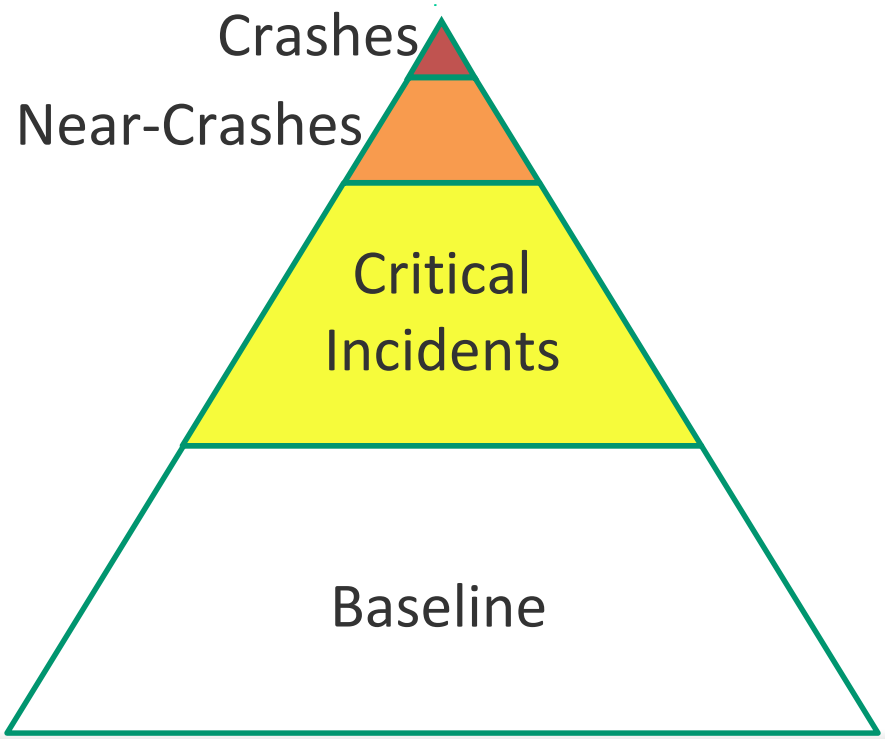
MSF, its members, and VTTI will be conducting the first ever, Naturalistic Motorcycle Riding Study.

- 100+ motorcyclists
- Two or three markets
- Newest technology as of Q3 2010
- Data collection 2011 and 2012
- Preliminary observations in one year
- MSF will collaborate worldwide to allow use

Method and Need

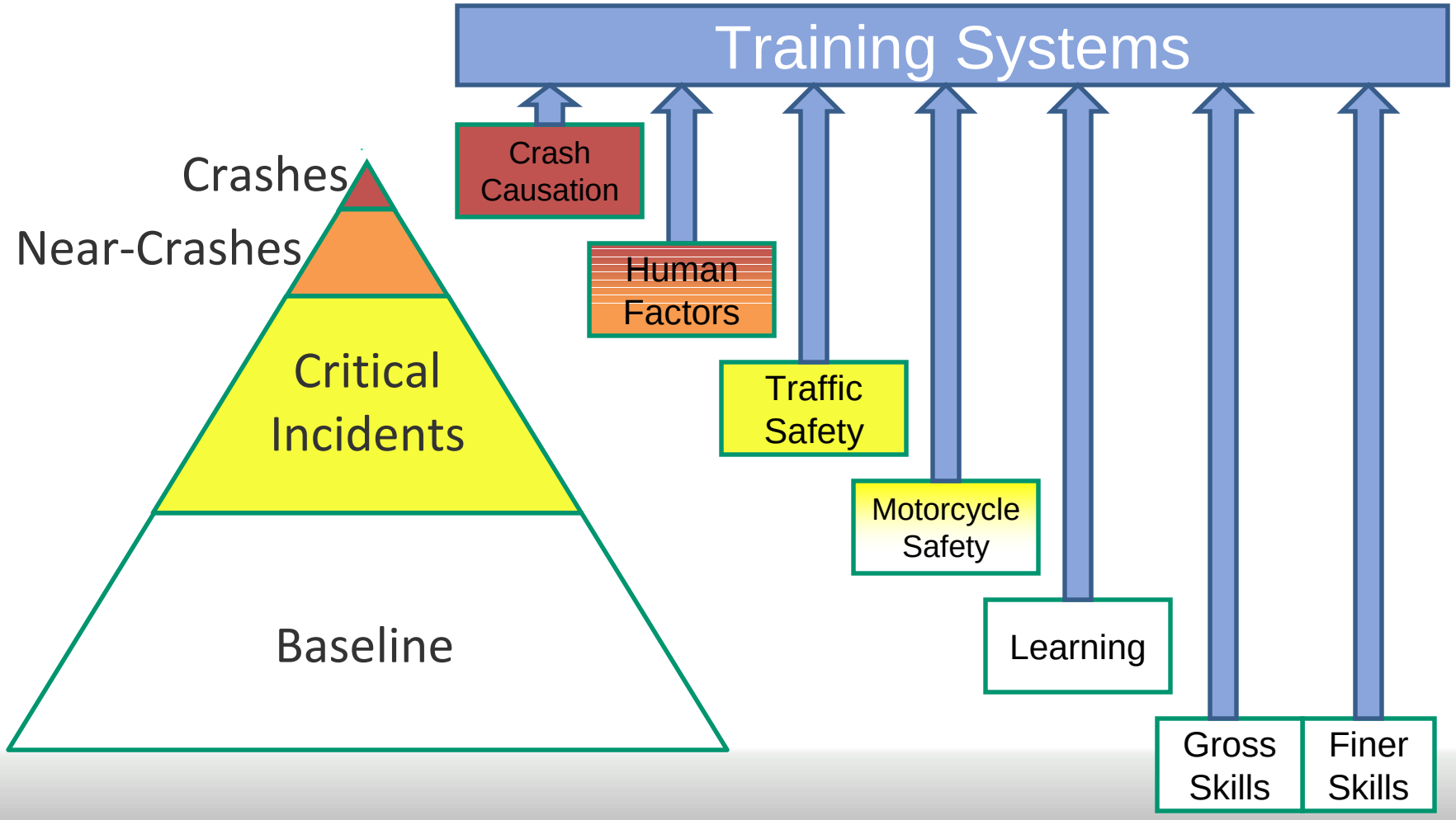
- The power of the naturalistic method is being utilized for light vehicles and heavy vehicles across various driver populations.
- The feasibility of these methods has been proven, but not implemented, on motorcycles.
- There is a research gap that will be addressed by obtaining this highly capable data on motorcycle riding such as:
  - Interaction of rider attributes, behaviors, roadway, adjacent vehicles, and environment as well as their relationship to crash prevalence and severity
  - Sequence of events and factors in the instants prior to the crash as well as in the minutes, days, weeks, and months prior to the crash
  - Differences between successful and unsuccessful evasive maneuvers
  - Attributes and habits of safe riders
  - Detailed exposure data across numerous factors

Naturalistic Method



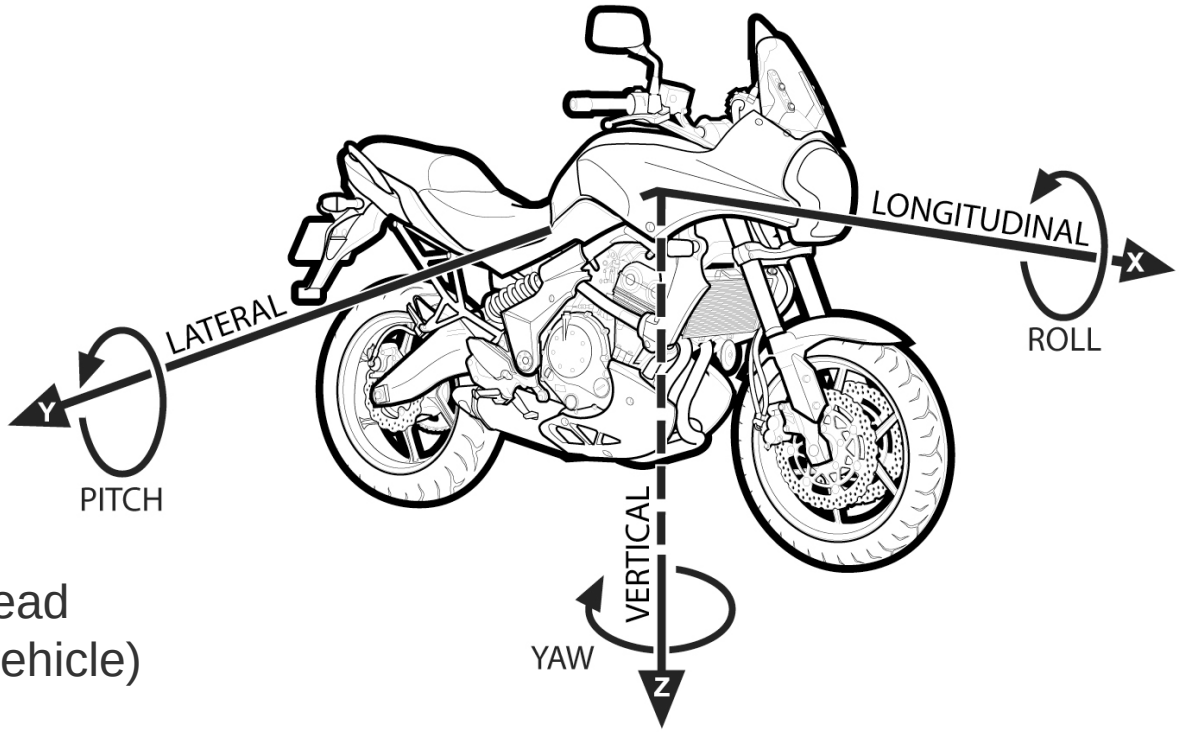
- Identifies factors in crashes using time-series video and numeric data.
- Reveals factors not detectable through crash investigation.
- Compares crash-involved rider to himself / herself at all other times.
- Provides pre-event data.
- Permits study of how crashes are successfully avoided.
- Permits quantification of rider performance and behavior in non-critical and critical riding.
- Provides flexible and accurate analysis of risk exposure.
- Permits systems development and testing with real-world data.
- Can be used to answer research questions that arise in the future.

Training Systems Development



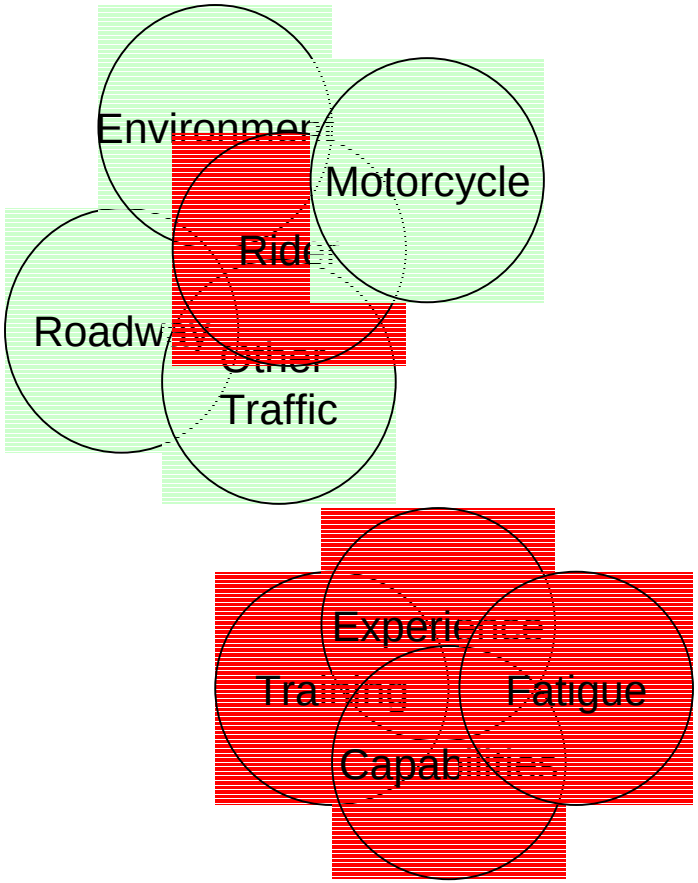
Example of possible instrumentation

- Video cameras
- Lane tracking
- Helmet / Gaze tracking
- Front and rear brake
- Accelerometers (3 axes)
- Gyro (3 axes)
- Speed
- Turn signals
- GPS
- Forward radar (speed to lead vehicle; distance to lead vehicle)
- Continuous collection
- 8-12 month capacity
- Expandable measures



The Value of Video

- Provides “perfect witness.”
- Documents rider, vehicle, roadway, and environmental variables sufficiently to support a wide range of investigations.
- Numerous variables can be identified post-collection based on new research questions or observation.
- Accurately records the sequence of many rapidly occurring actions.
- Captures factors that do not leave a physical record or may not be accessible in witness recall.



New Capabilities

- Naturalistic data provide pre-crash data not available in current approaches.
- Human factors, vehicle factors, and environmental factors are captured during events and throughout everyday riding.
- Continuous data with greater detail will enable countermeasure development in all cells of the Haddon matrix.

Haddon Matrix Adapted to Motorcycles

Naturalistic Collections Provide Data for ALL Elements of the Matrix

		Human Factors	Vehicle Role	Environmental Conditions
Crash Prevention (pre-event)	Baseline	Skills, Learning, Traffic Safety, Strategy, Perception, Judgement, Experience, Fatigue, Capabilities	Rider / Bike Interactions, Advanced System Development and Testing	Exposure to: road type, weather, traffic, lighting, intersections, curves, guardrails, etc.
	Near-Crashes	Rider Education, Licensing, Impaired Riding, Motorist Awareness, State Safety Programs	Brakes, Tires, Controls, Lighting, Visibility, Compliance Testing and Investigations	Roadway design, Construction, Operations and Preservation, Maintenance
Injury Mitigation (crash)	Crashes	Loss of control sequence, precise injury mechanisms	Rider support systems, collision warning systems, etc	Interaction with roadside elements
		Use of protective gear	Occupant Protection	Roadside Design, Construction and Preservation
Emergency Response (post-event)			Automatic crash notification	Education, Bystander Car, Training for Law Enforcement, Data collection & Analysis

The MSF
Naturalistic Study of Motorcyclists

Rider training is most valuable when riders develop sound skills and maintain an attitude that leads to wise choices.

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