MOTORCYCLE SAFETY FOUNDATION

RIDER EDUCATION AND TRAINING SYSTEM

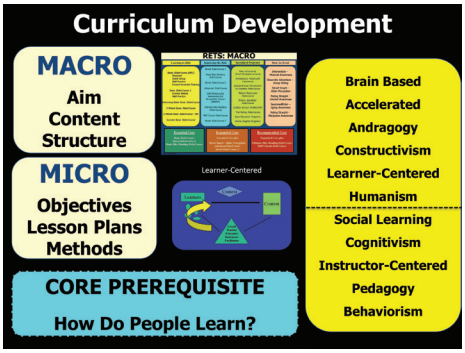
UNCOMPROMISING QUALITY FOR POSITIVE RIDER OUTCOMES: LEARNING AND IMPROVING THE RIDE SINCE 1973

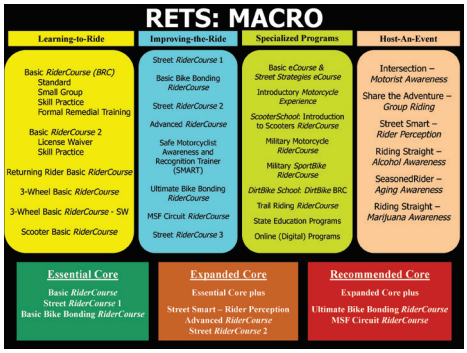
The Motorcycle Safety Foundation (MSF) has been designing novice and advanced rider training curricula since 1973. MSF released its 4th generation learn-to-ride safety curriculum in 2001, the Basic *RiderCourse*SM (BRC), which is considered the gold standard due to its elegant design and positive rider outcomes. Its release created a sea change in the rider education and training community due to (1) use of modern, systemic curriculum development processes, (2) shifting from instructor-centered to learner-centered teaching-learning processes, (3) honoring the principles of safety, learning and motor skills development through the use of both invested and divested subject matter experts, (4) expanding the breadth and depth of curriculum for lifelong learning opportunities from novice to performance-oriented enthusiast riders, and (5) instituting a change process to maintain relevancy, innovation and excellence. Over the next decade, MSF reinvented its entire curricula by developing a Rider Education and Training System (RETS) consisting of over 20 *RiderCourses,* ancillary educational programs and related certification processes. In 2014, MSF was able to seize upon the modern technology of online learning to update its 2001 BRC curriculum and provide basic knowledge and terminology on an individualized basis prior to formal instruction. The use of online learning provided the capability to provide additional breadth and depth of content during regular classroom instruction, particularly related to the behavioral processes of self-assessment and evaluation, perception development, risk management and crash avoidance strategies.

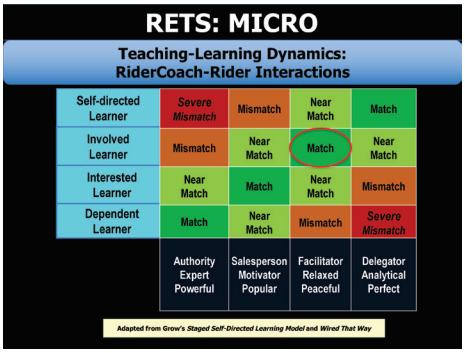
In some areas of the country, old-school skeptics were slow to adopt the 2001 BRC. Most of this resistance ended when RiderCoach surveys conducted in 2003 and 2005 demonstrated that the BRC was a significant improvement (40 to 75 percent) over the former curriculum in intermediate measures including: (1) novices gaining control of the motorcycle sooner, (2) a reduction of training incidents, (3) a reduction in participant stress during the course, (4) RiderCoach satisfaction in teaching the course, and (5) novice readiness to begin on-street riding. Similarly, in 2014 some jurisdictions were unsure of the ease of implementing an online e*Course* component; this has since waned with the success of several states in implementing the Basic e*Course* and Street Strategies e*Course*.

Not all learn-to-ride courses are the same, and the BRC transcends a simple skills-training program. As can be seen in the images (figures 1-3), the MSF curriculum development process considered (1) the macro perspective of using multiple courses from decision-to-ride and learn-to-ride to more technical riding programs with multiple entry points, and (2) the micro perspective of specific objectives for each course with structured lesson plans and flexible delivery options that matched involved learners with facilitating RiderCoaches. This was framed by contemporary learning theory and modern educational practices related to adult learning and brain-based learning principles, which are important not only for curriculum development but for implementation of courses that result in positive rider outcomes both during instruction and for post-course riding after licensing.

Figures 1-3

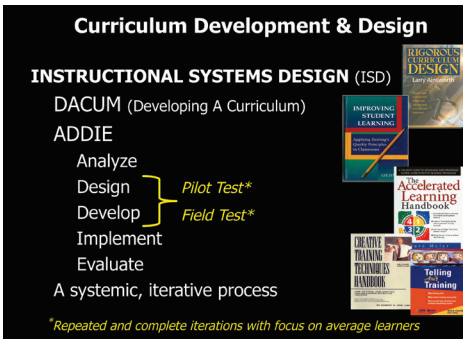


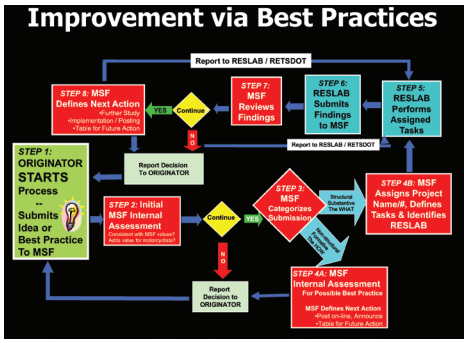




MSF uses an instructional systems design (ISD) curriculum development process that includes DACUM (Developing a Curriculum) and ADDIE (Analyze, Design, Develop, Implement, Evaluate). The former has subject matter experts use a storyboard for initial course design and development; the latter provides the framework for pilot- and field-testing via a systemic, iterative process, which means repeated pilot and field tests using the whole curriculum, not just parts of it, until it is fully proven and ready for public release. Further, MSF incorporates a formal Change Process to ensure constant improvement and utilization of creative practices. This Change Process enhances the learning environment by providing teacher-learner interactions that transcend rigid, one-size-fits-all instruction that can inhibit favorable results for all course participants. The Change Process provides for RiderCoach feedback and a vetting process (using a research laboratory setting as needed) that promotes a multitude of learner-centered techniques and a variety of delivery options (figures 4-6).

Figures 4-6





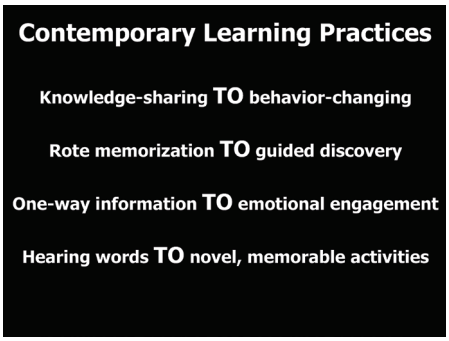
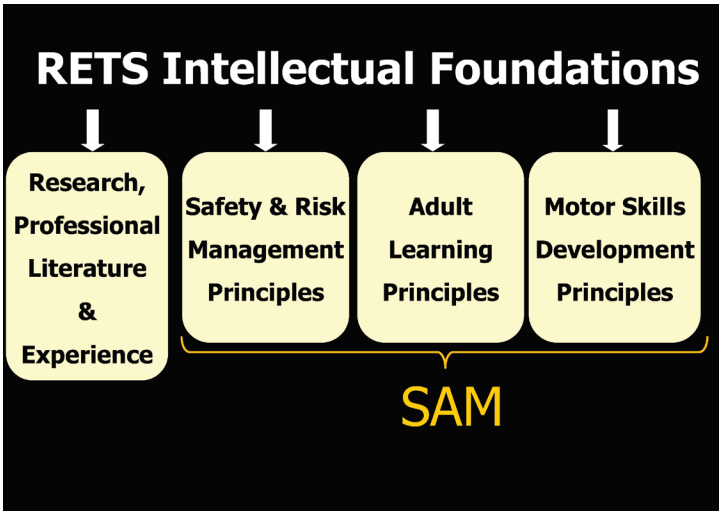


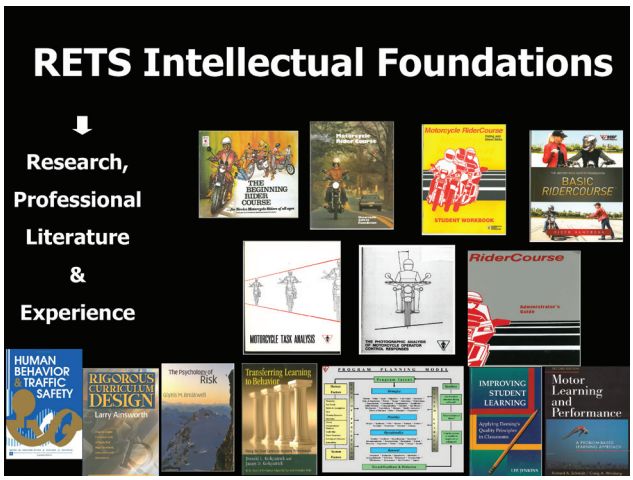
Figure 7

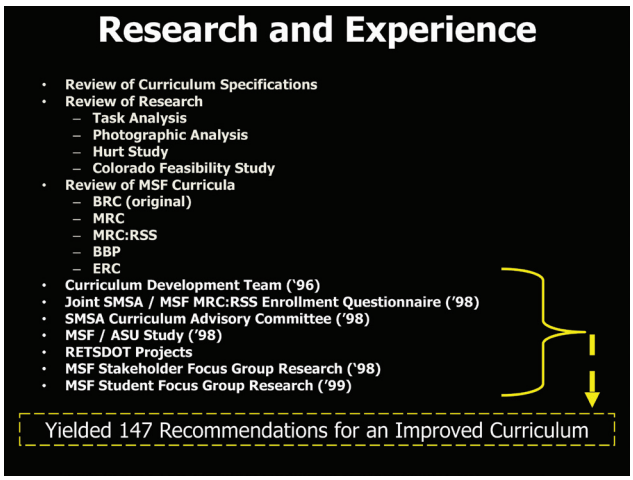


The intellectual foundations of RETS include four areas with academic, professional and research-based inquiry. These include (1) experience and research in both rider training and in education theory and practice, (2) safety education and risk management principles, (3) adult and accelerated learning principles, and (4) motor skills development principles (see figure 7). Content for the latter three, which became known as the "principles of SAM" (Safety, Adult learning and Motor skills), were drawn from an extensive professional literature review and in consultation with subject matter experts who were both invested specifically in rider education as well as divested with expertise external to the rider education and training community.

Per figures 8 and 9, the research, professional literature review and decades of experience from previous MSF education and training programs provided the basis for developing and implementing RETS. Motorcycle-specific research from the early 1970s, funded by MSF as well as the National Highway Traffic Safety Administration (NHTSA) and including MSF-specific surveys of stakeholders, provided a clear way forward for comprehensive programming.

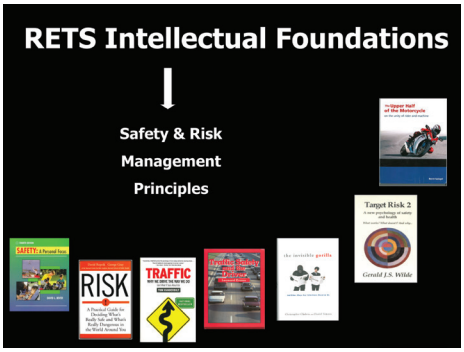
Figures 8 & 9

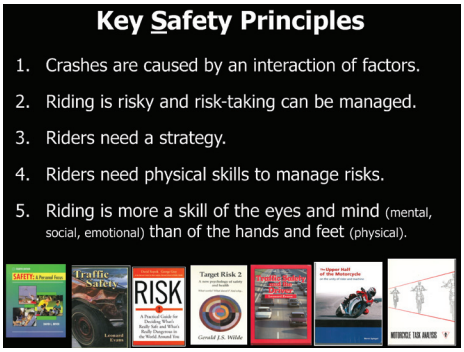


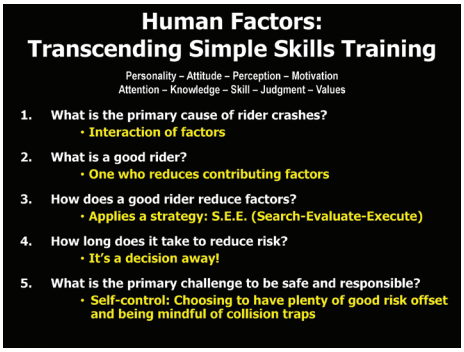


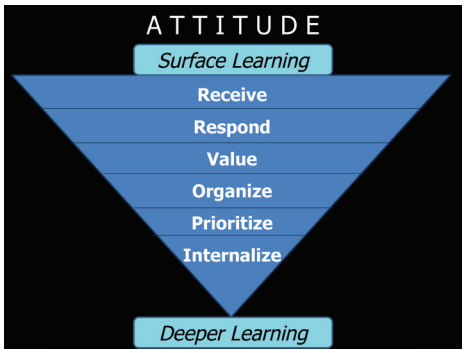
Per figures 10 to 14, safety and risk mangement principles provided the foundation for program development. It was important to identify a theoretical construct for all of RETS so as to transcend simple skills training by delving deeper into the cognitive and attitudinal learning domains. This led to developing multiple learning activities to enhance self-assessment related to effective decision-making and positive safety attitudes. A general goal is to produce riders of good character who make safety a high priority. It is important to address a rider's execution function, the brain's prioritizing and valuing mechanism, to ensure safety-oriented choices.

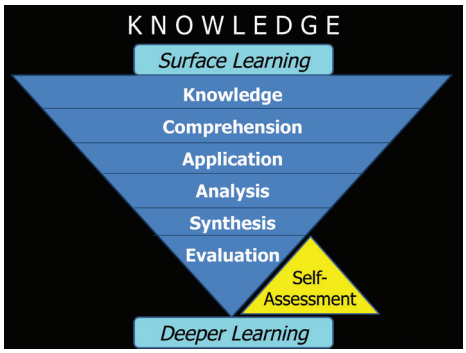
Figures 10 - 14





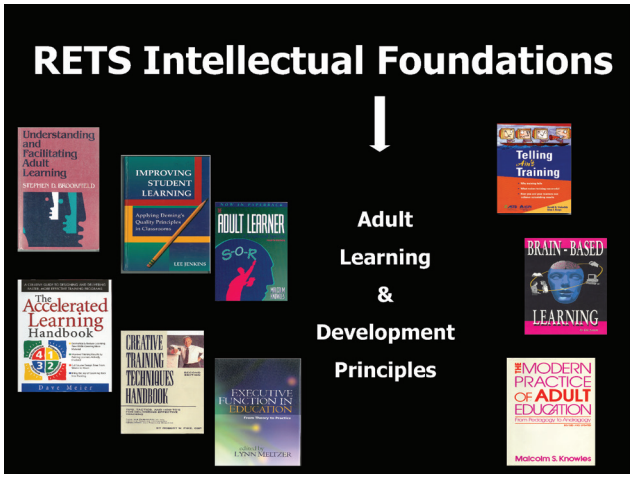


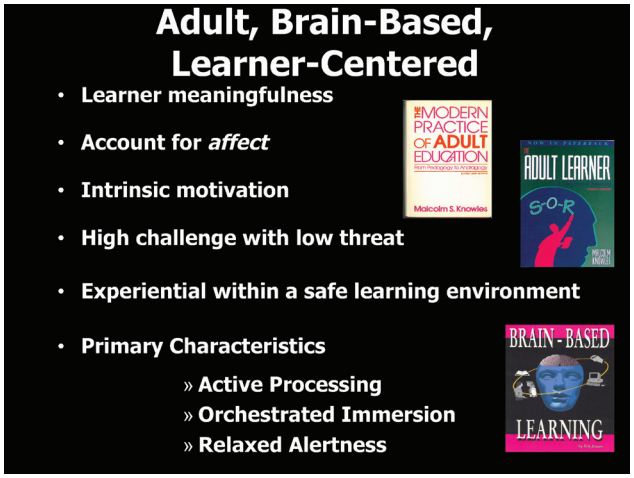




Adult, brain-based and learner-centered principles, per the figures below, are the core methodology used for participant learning activities. Bypassed are the rigid, old behavioral methods of lecture and rote memory, and embraced are the tenets of subject matter meaningfulness to the participant, active processing of content, orchestrated immersion into the practical application of content (the *why's* and *so what's*), and a learning environment devoid of condescension and judgment and characterized by relaxed alertness. This is important to ensure learning occurs within the program and later transfers to a real-world traffic environment (see figures 15 and 16).

Figures 15 & 16

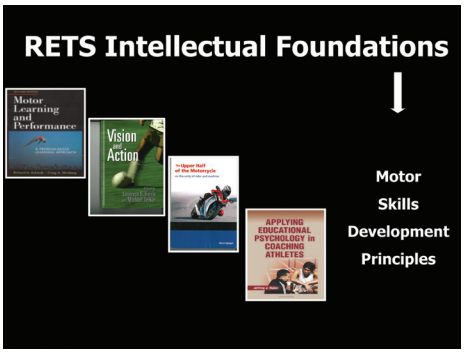


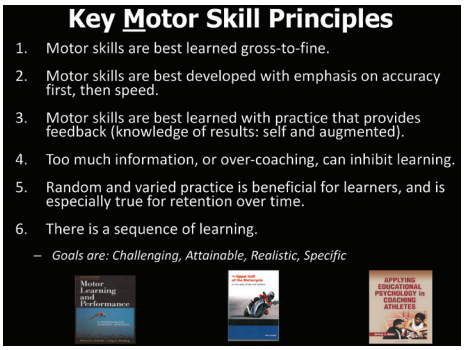


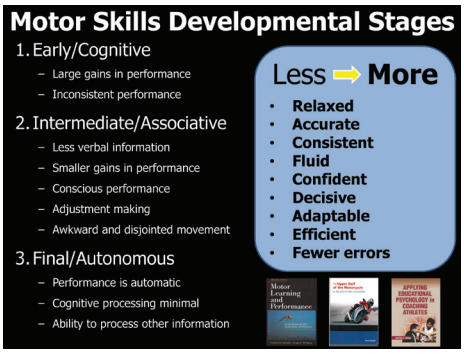
Motor skill development principles, as shown below and reflected in professional literature (see figures 17-19), embrace the three-stage development process of (1) early or cognitive, (2) intermediate or associative, and (3) integrated or automated. It is important for skill development to move from simple-to-complex activities, and to ensure riders are provided feedback not only from the results of their performance but also effectively augmented by a well-prepared and motivated RiderCoach. Ensuring a low-risk environment is of utmost importance, and supervision with rider-specific coaching encourages rider excellence.

One of the features of a high-quality learn-to-ride course conducted in on off-roadway environment is to maximize the degree of transferring learning to actual on-street operation. As such, MSF chose to incorporate the phenomenon of contextual interference effect into its riding exercises (versus single-skill exercises). Research has documented the value of such methodology in providing successful novices the best chance to continue their learning in a real-world environment (see Jeffrey J. Huber, *Applying Educational Psychology in Coaching Athletes* [2013]). Also, MSF developed its Street *RiderCourse* to allow riders, if they choose, to have their first on-street experience while under the watchful supervision of a specially certified RiderCoach.

Figures 17 - 19



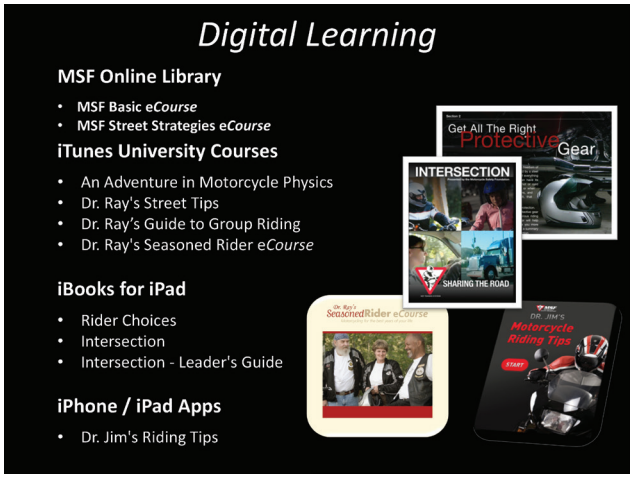


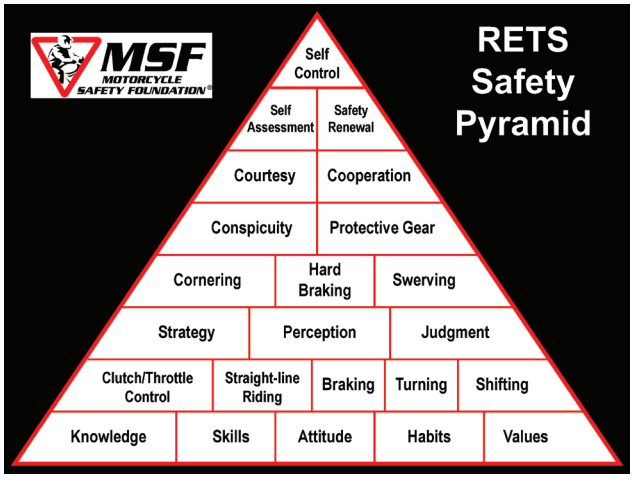


The RETS includes digital learning opportunities as noted in figure 20 below. Integral to the BRC is the MSF Basic e*Course*, which provides online learning for the general public as well as MSF course participants. This e*Course* mirrors the content of the BRC Rider Handbook, and serves as the basis for the Street Strategies e*Course* used for riders who already possess basic skills. These e*Courses* are available 24/7 and are device-agnostic as they can be accessed with "smart" technology.

Use of MSF's courses in iTunes University and motorcyclist-specific mobile applications provides myriad lifelong learning opportunities. In figure 21 below – the RETS Safety Pyramid – depicts the progressive simple-to-complex, basic-to-advanced content within RETS. All aspects are addressed in the BRC, but complementary coursework delves deeper into the concepts of and strategies for safe and efficient motorcycle use.

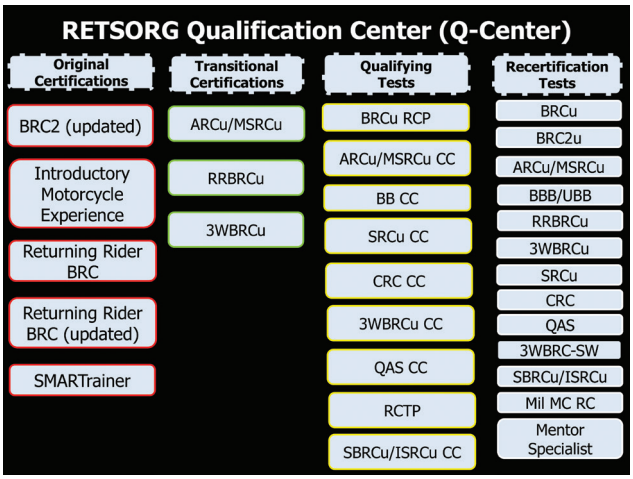
Figures 20 & 21





RiderCoaches who are certified by MSF to conduct its *RiderCourses* are key to program effectiveness and positive rider outcomes. Initial RiderCoach certification, as depicted in figure 22, is a robust, minimum 7-day preparation course that includes preliminary assignments and several rounds of peer teaching, and finishes with candidates being evaluated while teaching novice riders in a BRC. Besides the Rider Handbook, the curriculum package includes a RiderCoach Guide, range cards, and a DVD with course materials and presentation aids. RiderCoach Candidates are evaluated with the supervising support of an MSF-certified RiderCoach Trainer. Just as for riders, the learning for RiderCoaches never stops. They are required to conduct a minimum number of courses to be recertified and must complete professional development activities, many of which are in the Rider Education Training System Online Resource Guide (RETSORG) (see figure 23 below).

Figures 22 & 23



An effective learn-to-ride course is the cornerstone for a complete training/educational system and only the beginning of ensuring a lifetime of positive outcomes. Besides re-certification requirements and online professional development opportunities, MSF provides regional Rider Education Training System Workshops (rRETS) and the annual, premier International Rider Education Training System Workshop (IRETS) around the country. These events target RiderCoach development to renew commitment and enthusiam as well as to enhance course delivery and outcomes.

MSF will continue to improve its programs via extensive literature reviews as well as primary and secondary research. For example, MSF funded the world's first large-scale motorcyclist naturalistic study in collaboration with Virginia Technical Transportation Institute (VTTI), a leader in this type of research. In addition, MSF has implemented a Quality Assurance Specialist program to help jurisdictions maintain and improve the overall quality of their programs.

Be sure to visit the MSF website at msf-usa.org. It has an extensive library of information for all riders. For further information about MSF education and training programs, contact Ray Ochs, Ed.D. at MSF Training Systems at rochs@msf-usa.org.

A CALL TO ACTION

Motorcycling in the United States was a niche activity for the first half of the 20th century. Although there are nearly 9 million motorcycles registered for street use today, fewer than 600,000 bikes were registered annually before 1960. The decade of the 1960s witnessed the introduction in America of smaller, lightweight, affordable Japanese-made motorcycles. Led by Honda and followed by other new entrants, and fueled by a wave of Baby Boomers reaching license age, motorcycling went mainstream, and registration figures soared, reaching 2.8 million by 1970 and 5.5 million by 1975.

Unfortunately, along with the rise in use came a rise in crashes, injuries and deaths. However, in the 1960s there was little in the way of motorcycle crash research or accident countermeasures. The initial government reaction to the problem came in 1967 from the Department of Transportation, which for motorcycles simply focused on the use of protective gear.

At that time few states required any special license or examination of those who wished to operate a motorcycle on public roads. Typically, if one held a valid automobile operator's license it would simply be endorsed by state authorities for motorcycle operation as well. Whereas enthusiasts and safety professionals in other countries had begun to formalize the training process by writing step-by-step training curricula so experienced motorcyclists could assume the role of instructor, in the late 1960s most American riders learned from their friends or siblings or by trial-and-error.

In 1972, representatives of BSA, Harley-Davidson, Honda, Kawasaki, Suzuki, and Yamaha, acting through the Motorcycle Industry Council (a not-for-profit, national trade association that had existed under various names since 1914), proposed a cooperative effort to create broad-based programs to improve motorcycle operator competence, and established the Motorcycle Industry Council Safety and Education Foundation, Inc. (MICSEF). The MICSEF's five primary program areas were:

1. Determination of motorcycle operator tasks, knowledge and skills
2. Implementation of novice safety education and training
3. Operator improvement
4. Operator licensing
5. Non-motorcyclist safety education

MICSEF engaged the Human Resources Research Organization (HumRRO) to develop a plan to accomplish these objectives. The resulting "Motorcycle Safety Plan" was a blueprint for a comprehensive motorcycle safety program focused primarily on human factors.

Tasks included working with federal, state and local safety officials, educational institutions, professional and technical associations, motorcycle clubs and other motorcycle safety-oriented entities (including American Automobile Association, American Association of Motor Vehicle Administrators, and the National Highway Traffic Safety Administration); producing instructional materials and audio-visual aids; establishing uniform operating practices; and developing maintenance and inspection training programs.

Upon acceptance of this Motorcycle Safety Plan, MICSEF set about changing the face of motorcycle education in the U.S.

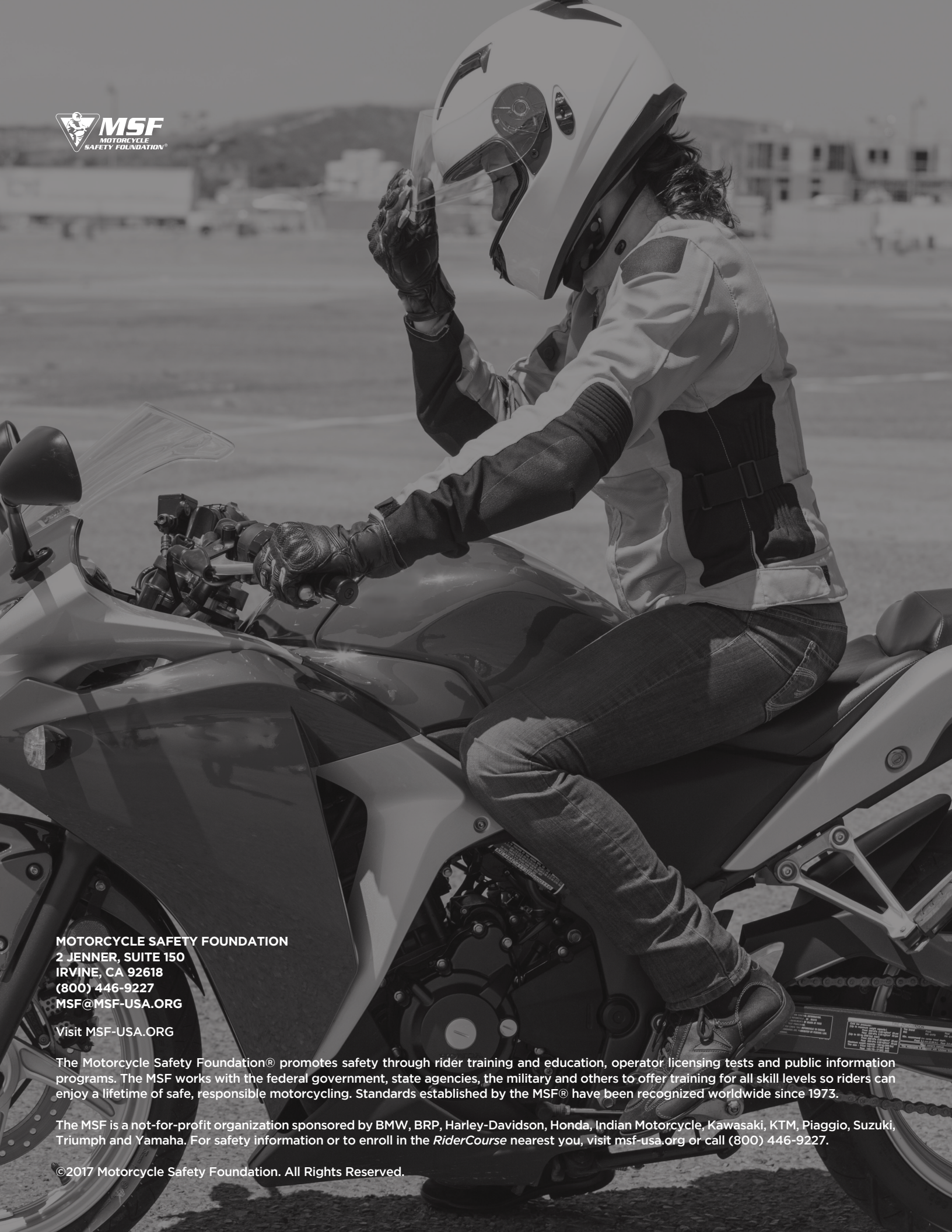
Along with a name change to the Motorcycle Safety Foundation, in 1973 MSF became a completely separate corporation from MIC, with its own board of trustees, membership, mission, and over 25 full-time dedicated staff who worked solely for the MSF. From the very beginning, MSF's mission had been to promote, foster, and encourage the safety of riders and provide high-quality, research-based education and training consistent with the public interest.

Among the foundation's major program areas, education has received the greatest emphasis since day one. Motorcycle accident data indicated that a substantial portion involved riders with limited experience (roughly several months to one year). Education was seen as the best opportunity to reduce risk to the operator, particularly during the early months of operation. This strategy was later confirmed by the "Motorcycle Accident Cause Factors and Identification of Countermeasures" study from 1981 (also known as the Hurt Report), which showed that trained riders were under-represented in crash fatalities.

MSF also employs field-based experimental research to examine the effectiveness of new curricular programs, as well as refinements in current curriculum strategies and procedures. Combined with MSF's institutional knowledge and subject-matter expertise, these research efforts are being applied toward the real-world goal of improving student outcomes through contemporary rider education programs.

Fast forward to today: in the MSF 100 Motorcyclists Naturalistic Study, MSF partnered with the Virginia Tech Transportation Institute on the world's first large-scale, naturalistic motorcycle riding study. The 3.5-year study began by collecting data from instruments installed on motorcycles owned by study participants in Virginia, California, Florida and Arizona as the bikes were ridden in normal day-to-day use. Sensors and video cameras recorded all motorcycle operator inputs such as steering, acceleration, braking and lean, as well as recording all motions of the motorcycle, current riding conditions and the actions of surrounding traffic. The motorcycle instrumentation was designed to be as inconspicuous as possible so that participant-riders would forget their rides were being monitored. The data collected will be a rich source of insight for years to come on a wide range of questions and points of interest for an international array of rider safety professionals.

The MSF has established itself as a world leader in motorcyclist training and education with certification standards, recognized both within the U.S. and internationally, technical assistance for training and licensing, and active participation in government relations, research, quality-assurance and public awareness programs. The MSF also works in partnership with other motorcycling and public and private sector safety-related entities, both U.S. and international, such as the American Association of Motor Vehicle Administrators, the National Highway Traffic Safety Administration, the U.S. Transportation Research Board, the U.S. Department of Defense, state governments, the Governors Highway Safety Association, the National Safety Council, AAA, the International Association of Chiefs of Police, and the Institut für Zweiradsicherheit (German Institute for Motorcycle Safety).



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The Motorcycle Safety Foundation® promotes safety through rider training and education, operator licensing tests and public information programs. The MSF works with the federal government, state agencies, the military and others to offer training for all skill levels so riders can enjoy a lifetime of safe, responsible motorcycling. Standards established by the MSF® have been recognized worldwide since 1973.

The MSF is a not-for-profit organization sponsored by BMW, BRP, Harley-Davidson, Honda, Indian Motorcycle, Kawasaki, KTM, Piaggio, Suzuki, Triumph and Yamaha. For safety information or to enroll in the *RiderCourse* nearest you, visit msf-usa.org or call (800) 446-9227.