Motorcycle Industry Council
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MEMBER SPOTLIGHT

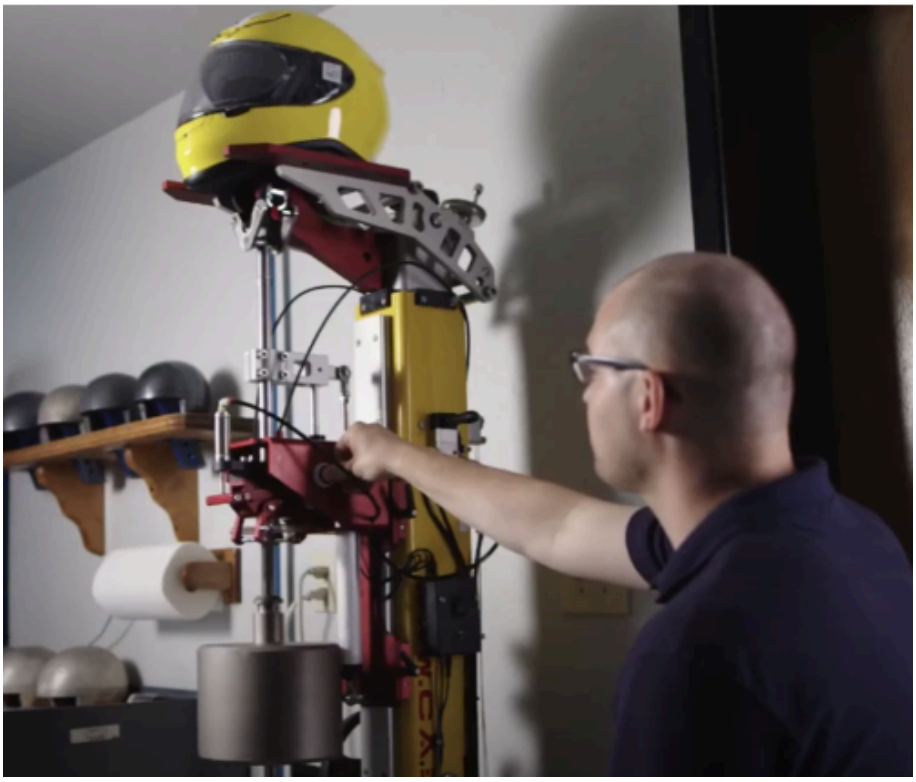
The Snell Foundation Is Revolutionizing Helmet Testing

The Snell Foundation has always insisted that real protection isn't a matter of trust or marketing, it's something that must be tested, challenged, and earned. And to earn Snell's approval, helmets continue to be evaluated with ever-evolving standards, including the latest M2025 standard, developed to include oblique impact evaluation alongside Snell's already rigorous testing protocols.

"This has been nearly 30 years in the making," said Hong Zhang, Snell Foundation's Director of Education.

Unlike traditional standards that only measure linear impact – the kind of direct, head-on collisions that produce a single spike in force – the M2025 also evaluates how a helmet responds to glancing blows and angular forces. These types of impacts are more likely to cause the brain to rotate within the skull, a motion associated with concussions and other serious injuries.

The need for this kind of evaluation has long been evident, but for decades, the tools didn't exist.



"Finally in 2015 Snell led an international conference in Lyon, France, attended by researchers in biomechanics, mechanical engineering, and accident study from 20 countries to discuss specific test lab issues related to methodology and equipment for angular acceleration measurement in helmet evaluation," said Zhang. "At that time, everyone agreed there is no way to do it, because nobody knew how to measure it in an object that's in rotational motion. So Snell began working on it."

What followed was a long-term research effort that eventually led to the development of wireless test head forms equipped with gyroscopes and motion sensors. These instruments now allow Snell to detect rotational movement across multiple axes with scientific precision – and to hold helmets to a higher bar as a result.

"I think with this change, there will be more helmets that pass the Snell standards in the market...and we'll see whether the injury and fatality numbers over the years will change," Zhang said. "Because that's the only way we can really tell."

Zhang noted that while all helmets used on U.S. public roads must meet the Department of Transportation's minimum requirements, Snell's approach goes further.

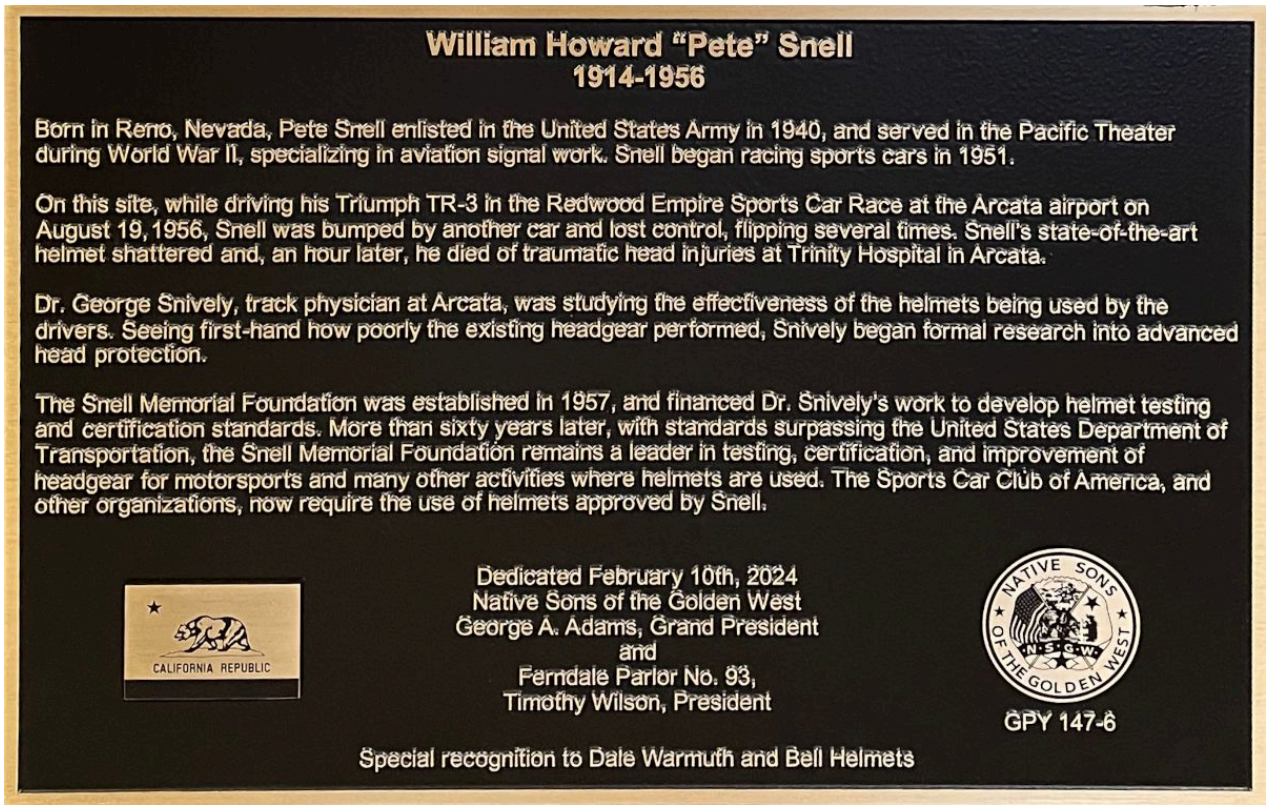

William "Pete" Snell (left) and Dr. George Snively (right).

For more than 65 years, Snell has remained steadfast in its mission to reduce head injuries by advancing the science of helmet safety. As a nonprofit, Snell operates independently from manufacturers and maintains strict testing protocols that go beyond initial certification. The Snell lab tests thousands of helmets each year, not only for various Snell standard certifications but also through random sampling of helmets already in the market to ensure they still meet Snell standards. The Foundation's California lab is accredited by the American Association for Laboratory Accreditation, confirming the consistency and scientific validity of its methods. That ongoing scrutiny – combined with public transparency – has helped make the Snell name a recognized mark of trust among riders, racers, and safety professionals alike.

Since its inception, the Snell Foundation has played a pivotal role in improving helmet safety across a wide range of activities. With each new standard, the Foundation either expands into new areas of risk or raises the bar for protective capability in existing use cases. Its board of directors – with expertise in biomechanics, neurology, engineering, and other related fields – collaborates with professionals worldwide to develop every Snell Standard. The goal is always the same: to encourage the development and manufacture of the most protective headgear that current technology can deliver.

Founded in 1957 by Dr. George Snively in the aftermath of racecar driver William "Pete" Snell's fatal head injury, the organization was created to help prevent similar tragedies. That mission

continues through a range of focused efforts, including scientific and medical research, standards development, helmet testing, and public education.



Another priority for the Foundation is improving standards around modular helmets. While popular for their convenience, modular designs have historically struggled to meet Snell's stringent full-face requirements, particularly the expectation that the chin bar remain locked under impact.

"For many years, we have been testing the modular helmet as if it's a full-face helmet," Zhang explained. "The chin bar had to pass the same impact tests, and if it opened automatically, that was a failure. That strict standard likely discouraged manufacturers from submitting modular designs for testing."

That may soon change. A recent survey of Snell Ambassadors – helmet-savvy riders who help promote and educate on helmet safety – found many would prefer a Snell-certified modular option, even if the criteria were slightly different. That input helped shape the Foundation's decision to move forward with a new research project on performance-based certification criteria specifically for modular helmets. The Foundation is developing a standard to identify modular helmets with higher levels of protective capability.

Recognizing the need to meet riders where they are – not just in helmet design, but in understanding – the Foundation has expanded its outreach efforts. It regularly appears at events such as Cycle Gear's Bike Nights and contributes to safety conferences. In May, Zhang

gave the keynote address at the Texas Motorcycle Safety Forum.

That push to connect more directly with riders was a key reason Snell joined the Motorcycle Industry Council.

The Snell Foundation regularly attends powersports events and motorcycle meetups to promote helmet safety.

"We would [like to] understand more about the user, which is the motorcyclist." Zhang said. "MIC member companies serve this market of consumers. They have information we don't have. We have very concentrated expertise. We don't do anything else other than just try to understand injury to the brain, what caused these head injuries, and what can be done through a device to really minimize such injury risks."

Snell's work has always been rooted in rigorous science – but today, it's also about outreach, education, and engagement. Through these evolving efforts, the Foundation is stepping even further into the powersports community, helping riders understand not just what makes a helmet safe, but why it matters.

"Choosing a Snell-certified helmet means you're getting the premium, best head protection," Zhang said. "So you can forget about whether you have the best protection and just enjoy what you do."