

Testimony

Support - SB 408

Madam Chair and distinguished members of Senate Transportation:

My name is Joel Sheltroun and I currently live in Lowell, Michigan. I am a former State Representative from Northern Michigan so I am very familiar with demands and expectations of serving in the legislature. I represent two manufacturers of three-wheel vehicles, Arcimoto and the Elio Motors, and I am very familiar with three-wheel regulations and statutes, both on the state and federal level.

I am here today to speak in support of SB 408 which would amend the definition of autocycle. But first, will be necessary to introduce you to this new, innovative platform called the Arcimoto.

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The Arcimoto is:

- 1) A two-passenger electric
- 2) Partially enclosed with a roll cage and roof
- 3) 5-point seat/shoulder restraints (similar to a harness)
- 4) Manufactured in Eugene Oregon

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On the next page of the handout, is a photo of the Arcimoto. Please notice the 5-point seat belts attached to both sides of the seat back.

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The following page describes some of the Arcimoto operational characteristics. It is important here to note that the Arcimoto is front wheel drive. This is important from a handling and testing perspective, and will be explained in subsequent slides.

Page 5

The next page of the handout, shows the safety equipment installed as standard on the Arcimoto:

- 1) Space frame roll cage enclosure, including a roof
- 2) 5-Point seat belt/shoulder restraints
- 3) Anti-dive optimization

- 4) Front energy absorbing zones
- 5) Wipers-Washers

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Of course, Tourism is an exceedingly important industry in Hawaii. Arcimoto has several rental operators that want to rent these vehicles to tourists. They feel it would be a great way for visitors to tour the state, producing income for business and tax revenue to the state. However, most people do not have a motorcycle license, which currently is required to rent a motorcycle. This means that most tourist will not be able to rent these electric vehicles.

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Hawaii requires helmets for operators and passengers on motorcycles under the age of 18. This requirement is dangerous when using seat and shoulder restraints. In a frontal collision, the restraints hold the occupant torso against the seat, but the head (which adds 3-4# approximately 30-40% more weight to the average human head.) flies violently forward causing severe damage to the neck, possibly paralysis or even death. Children are especially vulnerable since their skeletal structures are not completely developed.

Video Page 8

The video shows a sled test demonstrating the need to restrain the head and helmet in a frontal collision. This test was done showing the need for a HANS device, a head and helmet restraint system that costs about 500.00 plus the cost of the helmet.

Video Page 9

This video shows a live crash during a road rally. The operator doesn't have the HANS device(which is not required anywhere on public ways) the passenger does. The operator appears to sustain injury, even though the speed of the collision was relatively minor.

From NASCAR:

"A major cause of death amongst drivers during races was through violent head movements, where the body remains in place because of the [seat belts](#) but the momentum keeps the head moving forwards, causing a [Basilar skull fracture](#) resulting in serious injury or immediate death."

Certainly race car drivers reach much higher speeds than public highways, but NASCAR officials on frontal collisions: *"You can get killed at speeds as slow as 30 MPH if you stop quickly enough".*

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Motorcycle License requirement:

- 1) The Arcimoto is front wheel drive, therefore, handles much like an automobile
- 2) It is powered by electric motors so it does not require clutching or shifting.
- 3) Braking is achieved with the use of a foot pedal.
- 4) Instructions of leaning into a curve, balancing, clutch and brake controls are not applicable.

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Looking at the current road skills test, it appears that an Arcimoto or platforms like it, can't pass the road skills test. The Arcimoto exceeds the 3X5 box for stopping (since it is over 5ft wide) It's wheel base is over a foot longer (77 ½ vs a touring bike approximately 64 ¼), which may result in difficulty passing the cone weave portion of the test. I cannot find where the state has made exceptions in the road skills test for these vehicles.

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Some will raise the issue that a motorcycle license should be necessary to operate handlebar steering vehicles. This slide shows there isn't much difficulty involved in using handlebars for steering. Handlebar steering is the norm for personal mobility vehicles, those with mobility challenges.

Page 13

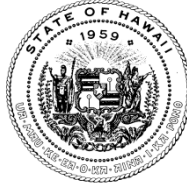
This happened recently in Northern Michigan. My 76 year old neighbor didn't care to take the long way home from Walmart. So, she decided to take I-75 expressway (it was a mile shorter on the expressway) Handlebars or no handlebars, she took to the shoulder. She didn't make it though. After a flurry of 911 calls, the MI State Police loaded up her Amigo and drove her home.

In summary:

- 1) **SB 408 will not allow any true motorcycle trikes to be considered autocycles. With the additional requirements of seat belts, it actually strengthens the disqualifications of motorcycles from the autocycle category.**
- 2) **It is important to note, SB 408 will not disqualify any current vehicle considered an autocycle from the category.**
- 3) **SB 408 will provide much help to the rental and tourism industry**

- 4) **With the addition of seat belt requirements, SB408 actually does more to protect the public over current statute.**
- 5) **Enactment of SB 408 is a clean, safe way to provide helmet and motorcycle license exemptions**
- 6) **The transportation industry is constantly changing with new innovative platforms. Government laws and regulations should not be allowed to stifle innovation or create roadblocks**

This concludes my testimony. If there are any questions, I will be happy to try to answer them at the direction of the Chair. Thank you for your time!



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STATE OF HAWAII
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February 6, 2019
1:15 PM
State Capitol, Room 225

S.B. 408
RELATING TO TRANSPORTATION

Senate Committee on Transportation

The Department of Transportation **opposes** S.B. 408.

This bill changes the definition of an autocycle to include a three-wheel motor vehicle that has a handlebar and seat belts.

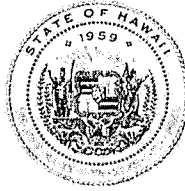
Hawaii's autocycle law was developed using the American Association of Motor Vehicle Administrators (AAMVA) "Best Practices" report. The report was developed by a working group from experts and members from various states to provide guidance to all jurisdictions on developing the type of knowledge and skills testing required for the operation of each type of three-wheel vehicle and type of driving privilege the operator should obtain. The best practices report states in part, "Autocycles operate completely differently than either two- or three-wheel motorcycles. Most autocycles operate more like passenger vehicles than motorcycles. They have a steering wheel and may have bucket seating. Acceleration and braking are typically achieved using only foot pedals as opposed to the foot and hand controls of a motorcycle."

In general, three-wheel motorcycles have less mass, and the driver has more of an influence on the stability of the vehicle. Also, with the use of a steering wheel and higher mass, turning an autocycle is more like turning a car than turning a motorcycle. Three-wheel motorcycles with handlebars depending on the mass, will require a different skill in maneuvering on turns and curves than an autocycle with a steering wheel.

The bill would include a three-wheel vehicle motorcycle with handlebar and seat belts as an autocycle. This will make it possible for a three-wheel motorcycle with a handlebar to be classified as an autocycle even though this type of motorcycle may not have gas and brake pedals but hand controls for acceleration or braking. This is another fundamental difference that must be considered when operating the vehicle.

The AAMVA “Best Practices” report recommends that “the differences between these types of vehicles mean they should have different operator licensing requirements. A regular passenger car license should be required to operate an **autocycle**, and the operator of three-wheel motorcycle should continue to have a motorcycle endorsement or license.”

Thank you for the opportunity to provide testimony.



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