

North Carolina

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Elio Motors Autocycle

Elio Motors www.eliomotors.com is manufacturing a two passenger with tandem seating, front wheel drive, 3 wheel, gasoline powered, fully enclosed vehicle (technically considered a motorcycle by NHTSA). The vehicle will retail for an expected \$6800.00 with an estimated 84 MPG Highway/49 City.

The Elio has been engineered to meet or exceed the highest available safety standards. It includes the Elio Safety Management System which consists of a high strength roll cage (similar to a race car), front and side curtain airbags, 3 point safety restraints, ABS, Stability Control, Traction Control, and other safety enhancement equipment that you would normally find on an automobile. AC, Power Locks and Power Windows, and a Radio w/Aux In are also included as standard equipment. It is 90% North American content and will be manufactured in Shreveport, LA next year. It has a top speed of over 100 MPH and 0-60 in the mid 9's.



P4 Prototype

Over 38,000 Presold Reservations



P4 Interior



Size Comparison

72" front tread width 13'6" Long



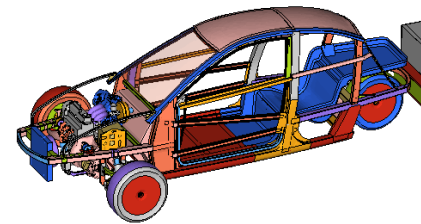
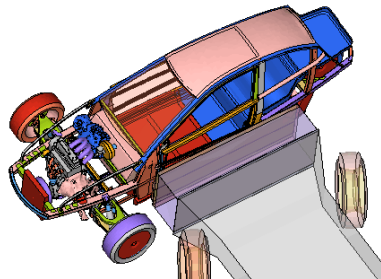
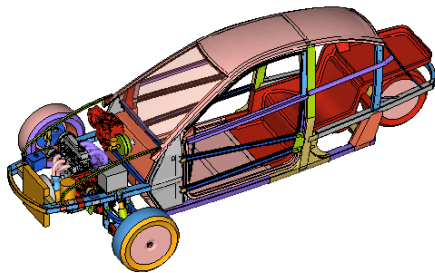
Highly Engineered

Safety – After substantial simulation Elio Motors and it's safety system supplier Takata believe that this vehicle has been designed and engineered to the highest safety standards

Aero Dynamics – Through relentless effort Elio's CdA is 0.246

Handling – achieves .85 lateral g's and performs very well in aggressive high speed

Fit and Finish – Using current manufacturing techniques Elio will have world class fit and finish



Helmet Requirement Issue

NHTSA will certify our 3 wheel vehicle as a motorcycle. Considering the motorcycle certification, there are only a few states that technically will require helmets to be worn inside the Elio Motors autocycle even though the Elio is completely enclosed with a high strength roll cage, front and side curtain airbags, has 3 point safety restraints and is engineered and designed to highest standards of automotive safety. Requiring helmets for vehicles like ours compromises the safety of our vehicle and puts operators and passengers in jeopardy:

- 1) Wearing a helmet in a completely enclosed vehicle makes it difficult to hear emergency vehicle sirens, and other warning horns, bells, etc.
- 2) Wearing a helmet reduces vision and can create blind spots.
- 3) Our vehicle, as well as all other motor vehicles on the road today, are not designed for helmet use. Airbag deployment requires sensitive calibrations. Adding a helmet (3 – 4 lbs) adds 30 to 40% more weight to the head. *No automobile manufacturer considers helmets when calibrating airbag deployment.* The extra weight of a helmet will actually *lower* our Safety Rating because of neck elongation, one of the measurements considered in NHTSA Star Rating Crash Tests.
- 4) The use of a helmet with 3 point safety restraints puts the operator and passenger in a dangerous situation. The 3 point restraints hold the body against the seat, but the head (with the extra weight of a helmet), will be pulled violently forward in a frontal collision. To avoid the significant injuries resulting from this action, NASCAR drivers are using the HANS device. Of course race cars travel much faster than we do on public highways but according to NASCAR and automotive engineers, one can expect serious injury or death with speeds as slow as 30 MPH if you stop quickly enough.



Motorcycle Endorsement /Registration Issue

Because of NHTSA certification as a motorcycle, current NC statute technically would require a motorcycle license for residents and those travelling through the state.

- 1) Many states don't require motorcycle endorsements for 3 wheel enclosed vehicles. Therefore, people without motorcycle endorsements traveling in or through NC from other states could receive a traffic citation and have their vehicle impounded.
- 2) Our vehicle is far too wide(72") and far too long(13'6") to pass the road test. It is impossible to drive through the cones without running over them or hitting the white lines.
- 3) Autocycles have automotive controls, handle like an automobile and do not have any motorcycle equipment. Instructions as to "maintaining balance" or "leaning into the curve" do not have any value to autocycle operators.
- 4) AAMVA (American Association of Motor Vehicle Administrators) mission is to recommend "best practices" for states to follow in these situations. After over a year of investigation, AAMVA "strongly urges" states to provide exemptions for "consistency across all jurisdictions." AAMVA concluded:
 - a) Autocycles are completely enclosed and have automotive controls, not motorcycle controls.
 - b) Autocycles handle like automobiles, not motorcycles so only a automobile driver's license should be required to operate.
 - c) Autocycles should not be used for driver's license road tests.
 - d) A 7"X 4" license plate should be used.
 - e) Put "autocycle" in statute definitions.

It is my understanding that NC will register our vehicle according to MCO and NHTSA certification.



Recommendation

- Put “autocycle” in definition as: *“autocycle” means a three wheeled motorcycle on which the drivers and passengers ride in a completely enclosed, tandem seating area that is equipped with a roll cage, safety belts for each occupant and antilock brakes, air bag protection and is designed to be controlled with a steering wheel and pedals* (This definition would provide the most protection of the public, and wouldn't create a loophole for unsafe vehicles)
- Then use “autocycle” to exempt from motorcycle helmet and equipment requirements and motorcycle endorsements.
- Registration fees, plate size(7X4), title, insurance and NHTSA certification would be those currently required of motorcycles since an autocycle is a type of motorcycle.

Representative Torbett has ordered legislation and will be sponsoring this common sense change. NC DMV support will be greatly appreciated.





Thank you for your help in making this common sense change.



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