

Proposed Model Legislation

Excessively Raised Vehicles

April 2007

(Developed by the Altered Height Vehicle Working Group)

BACKGROUND:

In 1988, the Motor Vehicle Manufacturers Association (MVMA) recommended maximum bumper and frame heights for passenger vehicles. The same year, the American Association of Motor Vehicle Administrators (AAMVA) established a policy to encourage jurisdictions to adopt the maximum bumper heights recommended by the MVMA. Ten years later in December 1998, AAMVA assembled the Altered-Height Vehicle Working Group (“the *Working Group*”) to address safety concerns expressed by several jurisdictions about passenger vehicles equipped with aftermarket body/suspension lift kits and/or oversize replacement tires (“raised vehicles”). Modifications that result in an excessive increase in the ride height of raised vehicles may degrade braking performance, compromise fuel system integrity, create a mismatch in the geometric alignment of energy-absorbing structures, increase roll-over propensity, and change handling characteristics by altering the designed integration of original tires and steering, braking and suspension systems.

SUMMARY OF EFFORTS:

The *Working Group* that was created included members from eight jurisdictions from both Canada and the United States (BC, FL, MD, MO, NJ, ON, TX, VA) and representatives affiliated with the Specialty Equipment Market Association (SEMA), American Manufacturers Equipment Compliance Agency (AMECA), Hunter Engineering Inc. and Virginia Commonwealth University. The *Working Group* explored measures that could be taken through testing, research, literature review, and the involvement of stakeholders to develop non-binding model legislation for raised vehicles. AAMVA’s role in developing this model legislation is consistent with the mission of the Vehicle Safety & Inspection (VS&I) Discipline to promote uniform programs for compliance with accepted minimum standards for motor vehicle safety equipment.

Although the guiding principle for this effort is public and highway safety, there is also an interest in ensuring that the model legislation is responsible, appropriately targeted and technically-supported. To support that position, the AAMVA *Working Group* conducted low-speed brake tests to examine the effect oversize replacement tires could have on the braking performance and rollover propensity of excessively raised vehicles; perused technical literature; reviewed regulations; and petitioned comments about excessively raised vehicles from the AAMVA membership. The *Working Group* also took measures to quantify the crash risk of excessively raised vehicles and develop model legislation not in isolation, but in a collaborate effort together with organizations, manufacturers and other stakeholders with a vested interest in automotive equipment and highway safety. Those who participated in discussions to develop the model legislation were affiliated with law enforcement, motor vehicle administration, vehicle regulation, casualty insurance, and aftermarket tire and motor vehicle manufacturing industries. The efforts of the *Working Group* have been supported by AAMVA staff.

Proposed Model Legislation

Excessively Raised Vehicles

April 2007

(Developed by the Altered Height Vehicle Working Group)

There are two aspects to the proposed model legislation which include: **(a)** Excessively Raised Vehicle Safety Act, and **(b)** Regulation Concerning Excessively Raised Vehicles. The model legislation, if adopted by a jurisdiction, would allow the original ride height on passenger vehicles to be raised to a certain extent but within specific limits. These limitations would specifically restrict the size of oversize replacement tires, maximum bumper heights and frame heights. There are also provisions within the proposed model legislation addressing modifications which could affect characteristics and maximum tolerances and dimensions of the braking, lighting, suspension, steering and fuel systems of raised vehicles. The proposed model legislation can be incorporated into a periodic inspection program or augment out-of-service criteria to assist make an objective determination about whether a raised vehicle should pass or fail a cursory roadside inspection.

The proposed model legislation is intended to assist jurisdictions who have an interest in refining current statutes or introduce new standards for regulating the excessive ride height of raised vehicles equipped with aftermarket body/suspension lift kits and/or oversize replacement tires. This proposed legislation has been reviewed and approved by the AAMVA Legal Services Discipline as required by the International Standing Committee Administrative procedures. It has also been posted on the AAMVA Website for member review and comment.

RECOMMENDATION:

It is recommended that the proposed model legislation (copy attached) be approved by the AAMVA Board of Directors.

Model Legislation for Excessively Raised Vehicles

Section 1. Short Title. This Act may be cited as the Excessively Raised Motor Vehicle Safety Act.

Section 2. Statement of Intent and Purpose. The purpose of this Act is to prohibit the operation on any public highway of a motor vehicle that has been altered to excessively increase the original height of its frame or bumper, or that has been equipped with oversized replacement tires to a degree that creates safety hazards to the occupants of such vehicle and to other motor vehicles using the public highway. The Act further directs the [title of chief motor vehicle official] not to issue or renew a motor vehicle registration that authorizes the highway operation of an unsafe, excessively raised vehicle, as defined in the Act.

Section 3. Statement of Findings. [This *Section* to be completed by jurisdictions that require legislation to include a factual statement of findings, concerning the basis and the need for the creation of new legal rights, remedies or obligations contained in the Act]/

Section 4. Definitions. As used in this Act, the following words and phrases have the following meanings:

(a) “Bumper” means the horizontal assembly made of aluminum, metal, rubber or plastic that is fastened to the front and rear of a vehicle and extends as a shield away from and across the full width of the vehicle body;

(b) “Bumper height” means the vertical distance between the ground and the lowest point at the bottom of an original bumper manufactured entirely of metal measured when the vehicle is unladen on a flat surface with the tires at the proper tire inflation pressure. If the bumper is absent, or if a section of the bumper is composed of rubber or plastic material, or if the original bumper has been modified, or if the vehicle has been equipped with an aftermarket bumper then the bumper height shall be measured with the vehicle on a level surface from the ground to the bottom of the frame at the most forward or rearward points of the frame rail;

(c) “Excessively raised vehicle” means a raised motor vehicle, as defined in *sub-Section (m)* of this *Section*, to which modifications have been made that could degrade braking performance, compromise fuel system integrity, create a mismatch in the geometric alignment of energy-absorbing structures between excessively raised vehicles and multi-purpose vehicles and passenger vehicles, increase roll-over propensity, and change handling characteristics by altering the designed integration of the original tires, and the steering, braking and suspension systems, to an extent determined by reference to the standards contained in *Section 8* of this Act, and as may be further specified in regulations adopted pursuant to the authority granted by *Section 7* of this Act.

(d) “Frame” means the main longitudinal structural members of the chassis of the vehicle or, for vehicles with unitized body construction, the lowest main longitudinal structural members of the body of the vehicle;

(e) “Frame height” means the vertical distance between the ground and the bottom of the frame at the most forward or rearward points of the longitudinal frame rail with the vehicle unladen on a level surface with the tires at the proper inflation pressure. The measurement on vehicles with unitized body/frame construction shall be taken at the lowest point of the front jacking location as manufactured;

(f) “Gross vehicle weight rating” means the value specified by the manufacturer as the maximum loaded weight of the motor vehicle as it appears on the manufacturer’s certificate of origin and/or on the federal motor vehicle safety certification label;

(g) “Loaded static tire diameter” means the maximum overall diameter when measured horizontally at the wheel hub and adjacent to the outboard sidewall of a tire/wheel assembly with the vehicle unladen on a level surface and the tires at the proper tire inflation pressure;

(h) “Multipurpose passenger vehicle” means a motor vehicle with motive power, except a trailer, designed to carry 10 or fewer persons which is constructed either on a truck chassis or with special features for occasional off-road operation;

(i) “Oversize replacement tire/wheel assembly” means tires or wheels that differ in overall diameter, width and height of original tires and wheels or optional tires or wheels recommended by the original equipment manufacturer;

(j) “Passenger car” means a motor vehicle with motive power, except a multipurpose passenger vehicle, motorcycle, or trailer designed for carrying 10 or fewer persons;

(k) “Primary frontal energy-absorbing structure height” means the distance between the ground and bottom of the frame;

(l) “Public highway” means any state or other highway, limited access highway, road, street, avenue, alley, driveway, parkway or place, under the control of the state or province or any political subdivision of the state or province, dedicated, appropriated or open to public travel or other use.¹

(m) “Raised motor vehicle” means a multipurpose passenger vehicle, passenger car, truck as these types of motor vehicles are defined in this *Section*,² with a gross vehicle weight rating (GVWR) of less than 11, 500 pounds (5,216 kg) in which the original equipment has been modified, augmented or replaced by the installation of aftermarket parts or materials, including lift kits and oversize replacement tires, that increase its ride height, including the original height of its bumpers, frame, loaded static tire diameter and lighting equipment;

(n) “Ride Height” means the measured distance between the ground and a fixed reference point on the vehicle;

(o) “Truck” means a motor vehicle with motive power, except a trailer, designed primarily for the transportation of property or special purpose equipment.

¹ A jurisdiction may wish to reference its existing definition of highway or public highway as contained in its motor vehicle code.

² These definitions are identical to those found in Title 49, Section 571.3 of the U.S. Code of Federal Regulations, which apply to the Federal Motor Vehicle Safety Standards (FMVSS).

Section 5. Operation prohibited. No person shall operate an excessively raised vehicle on any public highway of this state.

Section 6. Registration not permitted. The [title of chief motor vehicle official] shall not issue or renew a registration that authorizes the operation of a motor vehicle on a public highway if such motor vehicle is known to be an excessively raised vehicle.

Section 7. Inspection standards. The [title of chief motor vehicle official] is authorized to adopt regulations to implement any of the provisions of this Act, including regulations that contain inspections standards, guidelines and criteria, to determine if, during the course of performing any administrative safety inspection, authorized by [reference to statute that establishes inspection program] or any inspection performed by a law enforcement officer, as authorized by [reference to statute that authorizes roadside or other inspections by law enforcement personnel] the motor vehicle is an excessively raised vehicle, or otherwise fails to comply with any provision of [reference to statutory sections or part of State's motor vehicle code that contains standards for required equipment and condition for highway use and operation].

Section 8. Excessively Raised Vehicles, Description and Measurements. A motor vehicle is deemed to be an excessively raised vehicle for the purpose of this Act if it meets the definition contained in *Section 4* of this Act, and is observed to have any of the characteristics, or to exceed any of the tolerances or dimensions described in regulations adopted pursuant to the authority granted in *Section 7* of this Act. The regulations address the vehicle characteristics of body lift, brake system, bumpers, bumper height, frame height, fuel system, lighting equipment, tire/wheel assembly, steering system, and suspension system.³

- (a) With respect to body lift;
- (b) With respect to the brake system;
- (c) With respect to bumpers;
- (d) With respect to bumper height;
- (e) With respect to frame height;
- (f) With respect to the fuel system;
- (g) With respect to lighting equipment;
- (h) With respect to tire/wheel assembly;
- (i) With respect to the steering system;
- (j) With respect to the suspension system.

³ A model regulation is attached to the model law, which contains the standards for these vehicle characteristics.

Section 9. Penalties for Violation. Any person who operates an excessively raised vehicle on a public highway in violation of this act notwithstanding that the vehicle is currently registered by [type in jurisdiction] shall be guilty of [category of offense] and shall be fined in an amount not to exceed \$____. Any person who commits a second or subsequent violation of this act shall be guilty of [category of offense] and shall be fined not more than \$____, or imprisoned not more than ____ days, or both. In any case where the [name of motor vehicle agency] receives a report of a conviction under this *Section*, the [name of chief motor vehicle official] may require that the motor vehicle involved be presented for an official inspection. If the motor vehicle is not presented within the time required, or if it fails inspection, the registration shall be suspended, and no new registration shall be issued until such time as the owner demonstrates that the motor vehicle is in compliance with the standards of this Act.

Section 10. Warning of Violation. In any case in which a law enforcement officer has reason to believe that a motor vehicle operated on a public highway is an excessively raised vehicle, in apparent violation of *Section 9* of this Act, but circumstances do not permit an inspection to be performed with sufficient detail or accuracy to make a determination of compliance or noncompliance with the standards adopted pursuant to *Section 7 and 8* of this Act, such law enforcement officer may issue a written warning to the operator of such motor vehicle. The warning shall be in such form and contain such information as shall be prescribed by the [name of chief motor vehicle official], and shall contain a notice to the operator that the motor vehicle is required to be presented for an official inspection by the [name of motor vehicle agency]. If such motor vehicle is not presented for inspection within the time required by the notice, or if such motor vehicle fails such inspection, the registration shall be suspended, and no new registration shall be issued until such time as the owner demonstrates that the motor vehicle is in compliance with the standards of this Act.

Section 11. Right to Bring Civil Action. Any person who claims to have suffered bodily injury or to have sustained property damage in an amount in excess of \$____ as a result of any collision on any public highway with an excessively raised vehicle may bring a civil action in the [name of trial court of primary jurisdiction] for the [name of county or other geographical area] where such person resides against the operator or the owner, or both, of such excessively raised vehicle to recover actual damages, statutory damages of not more than \$____, court costs, and reasonable attorney's fees. If the owner is not the operator of the excessively raised vehicle, the liability imposed by the provisions of this *Section* shall be joint and several. It shall not be an affirmative defense to any action brought under this *Section* that the collision was caused by the negligence of the plaintiff, but such negligence, if determined to exist by the trier-of-fact, shall be considered to reduce the amount of actual damages, court costs and attorney's fees that the plaintiff is entitled to recover."

Section 12. Effective Date.

Regulation Concerning Excessively Raised Motor Vehicles

The following is adopted as an official regulation of [name of agency or department] by [title of chief motor vehicle official].

Section 1. Characteristics and Maximum Tolerances and Dimensions for Raised Motor Vehicles.

(a) With respect to body lift,

- (i) a body that has been elevated more than 3 inches (76mm) above the frame,
- or (ii) a body with unitized body construction that has been elevated above the frame, regardless of the amount of elevation;
- or (iii) a body that has been elevated by the use of multiple spacers, regardless of the amount of elevation;
- or (iv) aftermarket materials and fasteners that are not equivalent or greater in quality than original equipment (i.e. diameter, strength, grade of bolt);
- or (v) alterations that interfere or displace the safety features of the energy-absorbing steering column; affect the operation of the transmission, clutch, or accelerator controls; or mitigate the effectiveness of occupant restraint systems.

(b) With respect to the brake system,

- (i) brake lines do not display a DOT marking symbol (49 C.F.R. 571.106) or which are not contained in the Handbook of Automotive Safety Devices published by the Automotive Manufacturers Equipment Compliance Agency;
- or (ii) brake lines do not accommodate the full extension of the suspension without binding or being stretched;
- or (iii) brake lines and hoses that are not protected from excessive heat and vibration, chafing and undue wear, stress or unintentional disconnection during operation of the vehicle;
- or (iv) loss of brake fluid;
- or (v) minimum stopping distance requirement cannot be achieved in jurisdictions that conduct dynamic braking tests with the aid of a portable decelerometer or performance-based brake testing equipment.

(c) With respect to the bumper,

- (i) absence of the front or rear bumper with the exception of when a recognized vehicle manufacturer did not supply and install a rear bumper as original equipment;
- or (ii) bumpers that are not oriented or fastened in the original mounted position;
- or (iii) aftermarket bumpers that do not provide equivalent or superior protection as the original bumper;
- or (iv) bumpers with sharp or unwarranted protruding edges,

(d) With respect to bumper height,⁴

- (i) if the original bumper is not composed entirely of steel and the vehicle frame exceeds the frame heights denoted in *Section (1)(e)(i)* of this regulation.
- or (ii) when the FRONT bumper height of vehicles manufactured through September 30, 2009 is greater than 22 inches (559 mm) for passenger cars; 24 inches (610 mm) for vehicles with a gross vehicle weight rating 4,500 pounds (2,041 kg) or less; 27 inches (686 mm) for vehicles with a gross vehicle weight rating between 4,501 pounds (2,042 kg) and 7,500 pounds (3,402 kg); 28 inches (711 mm) for vehicles with a gross vehicle weight rating between 7,501 pounds (3,403 kg) and 11,500 pounds (5,216 kg);
- or (iii) when the REAR bumper height of vehicles is greater than 22 inches (559 mm) for passenger cars; 26 inches (660 mm) for vehicles with a gross vehicle weight rating less than 4,500 pounds (2,041 kg); 29 inches (737 mm) for vehicles with a gross vehicle weight rating between 4,501 pounds (2,042 kg) and 7,500 pounds (3,402 kg); 30 inches (762 mm) for vehicles with a gross vehicle weight rating between 7,501 pounds (3,403 kg) and 11,500 pounds (5,216 kg);,
- or (iv) when the height of the primary frontal energy-absorbing structure of vehicles manufactured after October 1, 2009 exceeds 18 inches (457 mm) from the ground or the lower edge of a secondary energy-absorbing structure is greater than 16 inches (406 mm) from the ground.

(e) With respect to frame height,⁵

- (i) shall not exceed:
 - 22 inches (559 mm) for passenger cars;
 - or (ii) 24 inches (610 mm) for vehicles with a gross vehicle weight rating of less than 4,500 pounds (2,041 kg);
 - or (ii) 26 inches (660 mm) for vehicles with a gross vehicle weight rating between 4,501 pounds (2,042 kg) and 7,500 pounds (3,402 kg);
 - or (iii) 28 inches (711 mm) for vehicles with a gross vehicle weight rating between 7,501 pounds (3,403 kg) and less than 10,000 pounds (4,536 kg);
 - or (iv) 29 inches (737 mm) for vehicles with a gross vehicle weight rating between 10,001 pounds (4,537 kg) and less than 11,500 pounds (5,216 kg).
- or (ii) if a raised vehicle manufactured after October 1, 2009 does not comply with Option 1 or Option 2 of the Vehicle Compatibility Commitment for enhancing the geometric alignment of front energy-absorbing structures of light trucks with passenger cars.⁶

4 "Bumper height" means the vertical distance between the ground and the lowest point at the bottom of an original bumper manufactured entirely of steel measured when the vehicle is unladen on a flat surface with the tires at the proper tire inflation pressure. If the bumper is absent, or if a section of the bumper is composed of rubber or plastic material, or if the original bumper has been modified, or if the vehicle has been equipped with an aftermarket bumper then the bumper height shall be measured with the vehicle on a level surface from the ground to the bottom of the frame at the most forward or rearward points of the frame rail.

5 "Frame height" means the vertical distance between the ground and the bottom of the frame at the most forward or rearward points of the longitudinal frame rail with the vehicle unladen on a level surface with the tires at the proper inflation pressure. The measurement on vehicles with unitized body/frame construction shall be taken at the lowest point of the front jacking location as manufactured.

6 OPTION 1: The light truck's primary frontal energy -absorbing structure (frame rails) shall overlap at least 50 percent of the 49 C.F.R. Part 581 zone AND at least 50 percent of the light truck's primary frontal energy -absorbing structure shall overlap the 49 C.F.R. Part 581 zone if the primary frontal energy -absorbing structure of the light truck is greater than 8 inches tall, engagement with the entire 49 C.F.R. Part 581 zone is required, OR OPTION 2: there must be a secondary energy -absorbing structure, connected to the primary structure, whose lower edge shall be no higher than the bottom of the 49 C.F.R. Part 581 zone.

(f) With respect to the fuel system,

- (i) loss of flammable liquid;
- or (ii) fuel filler hose is loose, damaged or excessively extended or retracted;
- or (iii) fuel tank from aftermarket modifications or a change in original location makes it more exposed and susceptible to being punctured in a crash;
- or (iv) the fuel tank/s is loose or not equipped with fasteners, mounts or straps that are equivalent or greater in strength as original equipment (i.e. diameter, strength or grade of material).

(g) With respect to lighting equipment,

- (i) maximum height of headlamps exceeds 54 inches (1,370 mm) when measured from the ground to the center of the lamp;
- or (ii) alignment of headlamps do not conform to the specifications of the Registrar;
- or (iii) maximum height of tail lamps is more than 72 inches (1,830 mm) when measured from the ground to the center of the lamp.

(h) With respect to tire/wheel assembly,

- (i) absence of tire information placard installed by the original equipment manufacturer;
- or (ii) mud flaps do not extend across the full width of oversize replacement tire/wheel assembly;
- or (iii) aftermarket fender flares do not extend beyond the full width of oversize replacement tire/wheel assembly;
- or (iv) loaded static tire diameter of an oversize replacement tire/wheel assembly exceeds 34 inches (864 mm) when measured horizontally at the wheel hub.

(i) With respect to the steering system,

- (i) steering wheel is smaller in diameter than the steering wheel installed by original equipment manufacturer;
- or (ii) caster, camber, toe-in and toe-out settings do not conform to original specifications or those recommended by the aftermarket lift kit manufacturer;
- or (iii) steering components bind, interfere, or come into contact with any part of the vehicle (except a steering stop) when the steering wheel is turned full right or full left;
- or (iv) the complete "full" engagement of threads cannot be observed on bolts that are used to fasten or connect steering components.

(j) With respect to the suspension system,

- (i) aftermarket spring shackles are longer than four inches (102 mm);,
- or (ii) lift blocks were installed on the front axle;
- or (iii) height of aftermarket spacer blocks on the rear axle exceed 6 inches (152 mm);
- or (iv) rear spacer block on rear axle is comprised of multiple spacers and not a single component;

- or (v) original suspension was reconfigured, dismantled or permanently disconnected or removed and replaced with aftermarket components that are not equivalent or exceed the strength of original equipment;
- or (vi) original leaf springs were repositioned from below the axle to above the axle;
- or (vii) shock absorbers are leaking oil or could be damaged by the full extension of the suspension travel;
- or (viii) bump stops were removed or mounted at a different location than originally intended;
- or (ix) a warning label is not attached on the left door jamb or visible within the occupant compartment to inform drivers that the original suspension has been modified and may change the handling characteristics of the raised vehicle;
- or (x) warning label does not contain the following statement: **“WARNING** – The suspension of this vehicle has been modified. As a result, this vehicle may handle differently than that of a factory-equipped vehicle. As with any vehicle, Extreme Care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive this vehicle safely may result in serious injury or death. Do not drive this vehicle unless you are familiar with its unique handling characteristics and confident of your ability to maintain control under all driving conditions. Some modifications (and combination of modifications) are not recommended”;
- or (xi) suspension travel is restricted or binds;
- or (xii) suspension components contact other vehicle components;
- or (xiii) aftermarket materials and fasteners are not equivalent or greater in quality than original equipment (i.e. diameter, strength, grade of bolt);
- or (xiv) the complete “full” engagement of threads cannot be observed on bolts that are used to fasten or connect suspension components.

Section 2. Effective Date Provision.