

NOTE: The cover page of this standard has been changed for administrative reasons. There are no other changes to this document.

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SAFETY STANDARDS FOR MILITARY GROUND VEHICLES



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DEPARTMENT OF DEFENSE  
WASHINGTON, DC 20301

SAFETY STANDARDS FOR MILITARY GROUND VEHICLES

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## FOREWORD

Although vehicles and equipment manufactured for, and sold directly to, the Armed Forces of the United States in conformity with contractual specifications are specifically exempted from the provisions of the Federal Motor Vehicle Safety Standards (FMVSS), it is the established policy of the Army to comply with the intent of those standards as long as compliance does not degrade essential military characteristics. With the same limitation, compliance with applicable provisions of (Federal) Motor Carrier Safety Regulations (MCSR) is an Army requirement.

This military standard provides guidance to assure proper safety characteristics associated with FMVSS are designed into military vehicles in a consistent manner. In establishing this standard, full consideration has been given to the following constraints listed in order of precedence:

- (a) Military mission requirements.
- (b) Federal Motor Vehicle Safety Standards and Motor Carrier Safety Regulations.
- (c) Requirements of friendly nations within whose borders US vehicles are operated by DoD personnel.

Individual requirements are identified to correspond with comparable FMVSS numbers and the applicable provisions of MCSR are as specified in the detailed requirements.

CONTENTS

		<u>Page</u>
Paragraph 1.	SCOPE.....	1
1.1	Scope.....	1
1.2	Purpose.....	1
2.	REFERENCED DOCUMENTS.....	2
2.1	Applicable documents.....	2
2.2	Order of precedence.....	2
3.	DEFINITIONS.....	3
3.1	Wheeled vehicles.....	3
3.1.1	Tactical standard wheeled vehicles.....	3
3.1.2	High mobility tactical wheeled vehicles.....	3
3.1.3	Tactical support wheeled vehicles.....	3
3.1.4	Combat wheeled vehicles.....	3
3.1.5	Trailers.....	3
3.2	Tracked vehicles.....	3
3.2.1	Tactical tracked vehicles.....	3
3.2.2	Combat tracked vehicles.....	3
3.3	Construction equipment and material handling equipment vehicles (CE/MHE).....	4
3.4	Military motorcycles.....	4
3.5	Administrative vehicles.....	4
4.	GENERAL REQUIREMENTS.....	5
4.1	Application.....	5
4.2	Recycled, virgin, and reclaimed materials.....	5
5.	DETAILED REQUIREMENTS.....	6
5.1	Safety devices.....	6
5.2	Military ground vehicle safety requirements.....	6
5.2.1	Type I.....	6
5.2.2	Type II.....	6
5.2.3	Type III.....	6
5.3	Individual safety requirements.....	6
5.4	Application of FMVSS.....	6

## 1. SCOPE

1.1 Scope. This standard applies to military ground vehicles listed in table I. Administrative vehicles and construction equipment/material handling equipment acquired by the Department of Defense are not included in this military standard since they are usually built to the manufacturer commercial specifications and are required to meet all applicable standards.

1.2 Purpose. The purpose of this standard is to establish uniform requirements for incorporating Federal Motor Vehicle Safety Standards into military ground vehicles consistent with their military characteristics. This standard establishes uniform requirements which satisfy the intent of, and are identifiable with comparable Federal Motor Vehicle Safety Standards. The provisions of this standard shall not be construed to be the only safety requirements applicable to military ground vehicles.

TABLE I. Classification of military ground vehicles.

Type	Nomenclature
I	<u>Wheeled vehicles</u> Tactical standard High mobility tactical Tactical support Combat Trailers
II	<u>Tracked vehicles</u> Tactical Combat
III	<u>Military motorcycles</u>

2. REFERENCED DOCUMENTS

2.1 Applicable documents. The applicable documents are contained in each individual requirement for reference therein.

2.2 Order of precedence. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence.

### 3. DEFINITIONS

#### 3.1 Wheeled vehicles.

3.1.1 Tactical standard wheeled vehicles. Tactical standard wheeled vehicles are built to Government specifications. They are generally characterized by multiple drive axles, 4 x 4, 6 x 6, 8 x 8, etc., and are capable of off-road operation over fairly rough terrain. Most of these vehicles have deep-water fording capabilities. They are designed to overcome ditches and obstacles in operation, and are also capable of operating on public highways at normal highway speeds, in most cases without escort.

3.1.2 High mobility tactical wheeled vehicles. High mobility tactical wheeled vehicles are expressly designed and built to Government specifications for the purpose of handling cargo while negotiating very rough terrain. All axles are driven and, generally, the vehicles are amphibious. They are capable of operating in deep mud or snow, are often articulated, and are seldom capable of maintaining normal highway speeds. They are usually operated in convoy on public highways. The relatively few high mobility vehicles capable of highway speeds and operated without escort comply with the same Basic Issue Items (BII) regulations as do limited mobility vehicles. An example is the M656, 8 x 8, high mobility, 5-ton truck.

3.1.3 Tactical support wheeled vehicles. Tactical support wheeled vehicles are commercial vehicles designed and built by a manufacturer that usually incorporate modifications to the standard commercial version to satisfy specific military requirements. These vehicles are intended to be used to the brigade rear and operate on public highways without escort.

3.1.4 Combat wheeled vehicles. Combat wheeled vehicles are lightly armed, armored, and operate on public highways under extreme emergencies. They are primarily used for riot control.

3.1.5 Trailers. Trailers are unpowered wheeled vehicles incapable of independent operation but are capable of hauling large loads when attached to a prime mover. They generally operate on highways but may operate off road under good conditions.

#### 3.2 Tracked vehicles.

3.2.1 Tactical tracked vehicles. Tactical tracked vehicles are cargo type vehicles designed for very rough terrain operation, they are usually unarmed, unarmored, and too slow for unescorted highway use.

3.2.2 Combat tracked vehicles. Combat tracked vehicles are characterized by armor plating, armament, and considerable weight. They are not designed as cargo carriers and seldom operate alone on public highways in peacetime.

3.3 Construction equipment and material handling equipment vehicles (CE/MHE). The CE/MHE class of vehicles is characterized by an automotive chassis being utilized to transport special-purpose equipment. These vehicles are designed for highway travel. This class includes mobile cranes, dumpsters, distributors, and other special-purpose vehicles. Equipment designed for off-highway usage such as bulldozers, earthmoving equipment, graders, and fork lifts will comply with the applicable Federal regulations that cover such equipment.

3.4 Military motorcycle. Military motorcycles are vehicles designed for either off- or on-road operation. These vehicles are characterized as having a seat or saddle for the rider and designed to travel on two or three wheels.

3.5 Administrative vehicles. Administrative vehicles are primarily of commercial design and built to a manufacturer's commercial specification, such as sedans, station wagons, vans, trucks, and buses. They are often characterized by a single drive axle and are used in support of general transportation services, facility and equipment maintenance functions not directly connected with combat or tactical operations. They are primarily designed for highway operation and normally acquired for post, camp, and station use. With the exception of color and identification markings, administrative vehicles supplied to the Department of Defense are identical to those sold to private individuals.



## 4. GENERAL REQUIREMENTS

4.1 Application. All military ground vehicles, delineated in vehicle specifications, shall be equipped with safety devices as specified herein. The provisions of this standard shall not be construed to prohibit any agency of the Federal Government from prescribing safety standards with requirements greater than those prescribed in this standard. Specific elements of these standards may be waived when the acquisition activity, in coordination with the combat development and user communities, determines that application would degrade essential military characteristics.

4.2 Recycled, virgin, and reclaimed materials. The use of recycled materials which meet the requirements of the applicable item or part without jeopardizing its intended use shall be encouraged.

5. DETAILED REQUIREMENTS

5.1 Safety devices. Particular safety devices shall comply with the requirements as specified in the detailed requirements covering such devices. The applicable individual requirements are as listed in the issue of this standard in effect on date of invitation for bids or request for proposals.

5.2 Military ground vehicle safety requirements.

5.2.1 Type I. All military wheeled ground vehicles shall comply with the safety requirements specified in table II.

5.2.2 Type II. All military tracked ground vehicles shall comply with the safety requirements specified in table III.

5.2.3 Type III. All military motorcycles shall comply with the safety requirements specified in table IV.

5.3 Individual safety requirements. Individual safety requirements follow section 6.

5.4 Application of FMVSS. The application of specific requirements within the FMVSS's, military wheeled vehicles designed to (a) carry 10 passengers or less and (b) have a gross vehicle weight rating (GVWR) of less than 10 000 pounds, shall comply with those requirements which apply to "passenger cars". Military wheeled vehicles designed to carry more than 10 passengers, shall comply with those requirements which apply to "buses". Military wheeled vehicles which have a GVWR equal to or greater than 10 000 pounds, shall comply with those requirements which apply to "trucks".

TABLE II. Safety requirements for military wheeled ground vehicles (type I).

Rqmt. no.	Title	Vehicle Rqmt. application			Referenced documents					SAE No.	
		1/	2/	3/	FMVSS No.	MCSR Part	FED-SPEC No.	MIL-SPEC No.	MIL-STD No.		
101.1	Controls and displays	X	X		101				1472		
102.1	Transmission shift lever sequence, starter interlock and transmission braking effect	X	X		102						
103.1	Windshield defrosting and defogging systems	X			103						J381 J382 J198
104.1	Windshield wiping and washing systems	X			104	393					
105.1	Hydraulic brake systems	X		X	105	393					
106.1	Brake hoses	X		X	106			H-3992 H-13719 C-46168 C-52798	193		
107.1	Reflective surfaces for components in the driver's field of view	X	X	X							
108.1	Lamps, reflective devices and associated equipment	X	X	X					1179		
111.1	Rearview mirrors	X	X		111						
113.1	Hood latch systems	X	X		113						
116.1	Hydraulic brake fluids	X	X	X							
119.1	New pneumatic tires	X	X	X	119						
120.1	Tire and rim selection for motor vehicles	X	X	X	120		VV-B-680	B-46176 T-12459			
121.1	Air brake systems	X	X	X	121						
124.1	Accelerator control systems	X	X	X	124						
125.1	Warning devices	X					RR-W-1817				

TABLE II. Safety requirements for military wheeled ground vehicles (type I) - Continued.

Rqmt. no.	Title	Vehicle Rqmt. application				FMVSS No.	MCSR Part	Referenced documents			SAIC No.
		1/	2/	3/				FED-SPEC No.	MIL-SPEC No.	MIL-STD No.	
201.1	Occupant protection in interior impact	X				201					
203.1	Impact protection for the driver from the steering control system	X				203					
204.1	Steering control rearward displacement	X				204					
205.1	Glazing materials	X				205					
206.1	Door locks and door retention components	X				206					
207.1	Seating systems	X				207					
208.1	Occupant crash protection	X	X			208					
209.1	Seatbelt assemblies	X	X		4/	209					1472
210.1	Seatbelt assembly anchorages	X	X		4/	210					
219.1	Windshield zone intrusion	X				219					
301.1	Fuel system integrity	X	X			301	393				
302.1	Flammability of interior materials	X	X			302		CCC-C-419			

NOTE: 1/ Tactical standard, high mobility tactical, and tactical support wheeled vehicles.  
 2/ Combat wheeled vehicles.  
 3/ Trailers.  
 4/ When specified by the acquisition activity.

TABLE III. Safety requirements for military tracked vehicles (type II).

Rqmt. no.	Title	Vehicle Rqmt. application		Referenced documents					SAE No.
		1/	2/	FMVSS No.	MCSR Part	FED-SPEC No.	MIL-SPEC No.	MIL-STD No.	
101.1	Controls and displays Transmission shift lever sequence, starter interlock and and transmission braking effect	X	X	101				1472	J381 J382
102.1		X		102					
103.1	Windshield defrosting and defogging systems	X		103					
104.1	Windshield wiping and washing systems	X		104	393				
107.1	Reflective surfaces for components in the driver's field of view	X	X				C-46168 C-52798	193	
108.1	Lamps, reflective devices and associated equipment	X	X					1179	
111.1	Rearview mirrors	X	X	111					
124.1	Accelerator control systems	X	X	124					
205.1	Glazing materials	X		205					
208.1	Occupant crash protection	3/		208					
209.1	Seatbelt assemblies	3/		209					
210.1	Seatbelt assembly anchorage	3/		210				1472	
301.1	Fuel system integrity	X		301	393				
302.1	Flammability of interior materials	X		302		CCC-C-419			

NOTE: 1/ Tactical tracked vehicles.

2/ Combat tracked vehicles.

3/ When specified by the acquisition activity.

TABLE IV. Safety requirements for military motorcycles (type III).

Rqmt. no.	Title	Referenced documents					SAE No.
		FMVSS No.	MCSR Part	FED-SPEC No.	MIL-SPEC No.	MIL-STD No.	
106.1	Brake hoses	106			H-3992 H-13719 C-46168 C-52798	193	
107.1	Reflective surfaces for components in the driver's field of view						
108.1	Lamps, reflective devices and associated equipment	108					
111.1	Rearview mirrors	111					
116.1	Hydraulic brake fluids			VV-B-680			
119.1	New pneumatic tires	119			B-46176 T-12459		
120.1	Tire and rim selection for motor vehicles	120					
122.1	Motorcycle brake systems	122					
123.1	Motorcycle controls and displays	123					
124.1	Accelerator control systems	124					
205.1	Glazing materials	205					
302.1	Flammability of interior materials	302		CCC-C-419			

## 6. NOTES

6.1 Cross-reference. Table V provides a cross-reference for classification between this standard and the previous revision (see 1.2).

TABLE V. Classification cross-reference.

Previous type designation	Nomenclature	Present type designation
I	Tactical standard wheeled vehicles	I
II	High mobility tactical wheeled vehicles	I
III	Trailers	I
IV	Combat vehicles	II
V	Tactical tracked vehicles	II
VI	Construction and material handling vehicle	deleted
VII	Tactical support wheeled vehicles	I
VIII	Military motorcycles	III

6.2 Subject term (key word) listing.

Military ground vehicles safety standards.  
Standard safety requirements for military ground vehicles.

6.3 Changes from previous issue. Asterisks or vertical lines are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.