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(R) SAE Child Passenger Safety Glossary		

RATIONALE

The rationale of this SAE Recommended Practice is to provide a list of terms in the field of child transportation safety including their definitions/description, common abbreviations (if any), and alternative terms that may be used in the United States and Canada. Thus, this glossary should help to clarify and standardize the terms used in the field of child transportation safety.

1. SCOPE

To harmonize and define terminology associated with occupant protection for children for vehicle manufacturers and child restraint manufacturers in the United States and Canada.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

The LATCH Manual, 2021, Using Lower Anchors and Tethers, for Children, Denise Donaldson and Katrina Rose

Glossary of Terms Related to Child Restraint Systems, Stephanie Trombello, Kathy Weber, John Stubbs, and Cheryl Kim

Child Occupant Protection Glossary, National Child Passenger Safety Board

U.S. Federal Register

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3. DEFINITIONS

Term	Definition
3-point harness, child restraint	A harness found on CRS consisting of shoulder straps coming together at a buckle in the shell or on the crotch strap.
5-point harness, child restraint	A CRS harness that has a webbing strap over each shoulder, one on each side of the pelvis, and one between the legs, with all five coming together at a common buckle.
Adjustable upper anchorage	A system built into the vehicle that raises or lowers the shoulder belt anchorage to help place and keep the belt crossing the shoulder between the neck and arm. See also shoulder belt positioner.
Advanced air bags	Supplemental restraint systems with deployment adjustments to better protect children and improperly positioned adults.
Airbag	Passive, supplemental inflatable restraint system.
Aircraft certification statement, CRS	Statement required on CRS which identifies whether the product can be used on an aircraft. CRS must pass inversion test and meet other criteria to certify for use on aircraft.
All-in-one child restraint	A child restraint intended for newborn through booster seat phase with rearward/forward facing with harness and booster modes.
Anchorage	A strong point and associated hardware in a vehicle to which a vehicle belt or LATCH/UAS attachment is secured, aka, anchor.
Anthropomorphic test device	Biofidelic test device shaped like a human, used to measure the protective capabilities of restraint systems in simulated crashes, aka, dummy; ATD.
Anti-rebound feature	Rigid bar or panel found on some rear-facing and convertible car seats to reduce the movement toward the rear of the vehicle (rebound) in the event of a frontal crash. In some cases, the carry handle can be used as an anti-rebound feature.
Back angle	The angle of the surface where a child's back will rest when the child is in a CR, aka, recline angle.
Base	Part of a CRS that attaches to the vehicle seat by means of LATCH/UAS or seatbelt and remains in the vehicle when the child seat is removed for mobility, aka, detachable base.
Belt anchor points	Fixed locations where the vehicle seat belt and buckle are anchored to the vehicle structure.
Belt path	The CRS manufacturer defined location where a vehicle belt or lower anchor belt passes through a CRS to secure it to the vehicle. Generally, a different belt path is provided for rear-facing, forward-facing, or booster modes of use, aka, belt route.
Belt/Harness stretch	Belt and harness webbing is a woven material that has a certain amount of elasticity while maintaining a required tensile strength.
Belt tightener	A device used to remove slack or tension on webbing and in some instances hold a fixed length in place, aka, belt tensioner.
Booster, backless belt-positioning seat	A child restraint system that positions a child on a vehicle seat to improve the fit of a vehicle Type 2 belt system on the child and does not have a back structure.
Booster, high back belt-positioning seat	Belt-positioning seat with a back that positions a child on a vehicle seat to improve the fit of a vehicle Type 2 belt system on the child.
Booster, shield	A type of booster, as defined by FMVSS 213, that has a seating platform and a structure in front of the child for restraint, but which is subject to crash testing using only a lap belt.
Bounding Box	Fit envelopes representing the space occupied by small, medium, and large rear-facing and forward-facing child restraints that can be used as tools for promoting compatibility between vehicles and child restraints.
Buckle, vehicle/CRS	Locking mechanism of the vehicle seat belt or car seat harness; the latch plate fits into the buckle.
Car seat	A common alternative term for child restraint system, especially when speaking with general audiences; easily confused in written material with "vehicle seat."
Carry handle	A loop that is attached to each side of an infant-only restraint and can be rotated to various positions. It is used to lift and transport the CRS.
Chest Clip	A pre-crash positioning device intended to keep harness straps in position on shoulders, aka, retainer clip, harness retainer clip.
Child restraint, backless	Backless child restraint system means a child restraint, other than a belt-positioning seat, which consists of a seating platform that does not extend up to provide a cushion for the child's back or head and has a structural element designed to restrain forward motion of the child's torso in a forward impact.

Term	Definition
Child restraint, built-in	Built-in child restraint system means a child restraint system that is designed to be an integral part of and permanently installed in a motor vehicle, aka, integrated child restraint.
Child restraint, car bed	A child restraint system designed to restrain or position a child in the supine or prone position on a continuous flat surface.
Child restraint, combination	A forward-facing CRS that has a removable harness that can also be used as a belt-positioning booster. Transition happens at various times dependent on product and the CRS manufacturer's instruction, aka, harness booster seat.
Child restraint, convertible	A child restraint that can be used rear-facing until child reaches upper height or weight limit for that mode and then turned to face forward until the child reaches the forward-facing upper weight or height limit.
Child restraint fixture	A physical model intended to represent the outside dimensions of a child restraint that is used by a vehicle manufacturer (FMVSS 225, Figure 1) to determine the space required by child restraint systems in a seating position and the location and accessibility of the lower anchorages in that position.
Child restraint, forward-facing harnessed	A child restraint that includes a harness which is installed so that the child faces the front of the vehicle.
Child restraint, harness	A combination of pelvic and upper torso restraint system made primarily of webbing designed to restrain the child without a rigid structure, aka, vest.
Child Restraint, infant-only	A restraint system that only faces the rear of the vehicle. Most infant-only restraints are sold with two parts: a base and a removable shell. The base is kept installed in the vehicle, and the shell locks into the base. Most infant-only shells can also be installed without the base using the vehicle seatbelt and, in some cases, lower anchors, aka, rear-facing only.
Child restraint, rear-facing	A restraint that is installed so that the child faces the rear of the vehicle, including infant-only, convertible child and all-in-one restraint systems. In frontal crashes, the shell supports the head and back of the child, distributing impact forces over a wide area.
Child Restraint (System)	Any device, except Type I or Type II seat belts, designed for use in a motor vehicle or aircraft to restrain, seat, or position children, aka, car seat, child safety seat, harness, vest.
CMVSS 213	Series of Canadian Motor Vehicle Safety Standards and Booster Seats Safety Regulations that establish requirements for child restraint systems and booster seats designed for use by children in both highway vehicles and aircraft.
Compliance tests	Mandatory static, dynamic, and component tests required by regulation.
CRS attachment hardware in vehicle	Hardware in a vehicle to attach a CRS to the vehicle, e.g., vehicle belt or lower anchorage and top tether anchorage.
CRS to vehicle installation tightness	The child restraint should not move from side to side or fore-aft more than 1 inch at the belt path when moderate force is applied.
Date of manufacture	The date the product was completed at the factory. Car seats and detachable bases can have different dates of manufacture.
Energy absorption	The transfer of crash energy to the permanent deformation of mechanical structures. This deformation can involve vehicle sheet metal, padding that does not bounce back (such as expanded polystyrene), or an air bag undergoing controlled deflation.
Energy absorbing material	CMVSS 213 requires that the area of a CRS contactable by the child's head be covered with energy absorbing material meeting specific compression-deflection and thickness requirements.
Energy Management System	System designed to manage energy in a crash, e.g., tucks sewn into the webbing with breakable stitching, vehicle belt pre-tensioners, and load limiters.
FMVSS 208	Title 49 CFR Part 571.208 Standard No. 208; Occupant crash protection.
FMVSS 213	Title 49 CFR Part 571.213 Standard No. 213; Child restraint systems.
FMVSS 225	Title 49 CFR Part 571.225 Standard No. 225; Child restraint anchorage systems.
Funnel guide	A device incorporated with some LATCH/UAS system lower anchorages to help the user position and guide the lower attachment connector during child restraint installation, aka, guidance fixture.
Harness	The webbing assembly attached to a CRS shell or frame that restrains the child in a crash.
Harness Strap	Section of webbing in a child restraint harness assembly.
Harness strap cover	A padded fabric sleeve that covers harness straps at the shoulders. Manufacturers may specify restrictions of use.

Term	Definition
Head excursion	The distance that the head of a child or crash dummy moves in the direction of impact or on rebound from a crash.
Head injury criterion	A calculated value indicating the likelihood of serious head injury which may or may not involve direct head impact.
ISOFIX	A system for the connection of a child restraint to a vehicle that has two lower anchorages in a vehicle seating position located near the seat bight and a means to limit the forward rotation of the child restraint, aka, LATCH, lower anchors, UAS.
Labels	Manufacturers are required to label a child restraint with the model's name or number, the date of manufacture, a statement that it "conforms to all applicable Federal motor vehicle safety standards," the weight and height limits for the child occupant, and various warnings about proper installation and use. Some of these must be visible when the CR is installed.
Lap belt	A vehicle belt that restrains the lower torso (pelvis); may be a lap-only belt or a portion of lap-shoulder belt, aka, Type I, pelvic restraint.
Lap-shoulder belt	A vehicle belt that restrains both the lower and upper torso can be used to secure a child restraint, aka, continuous loop lap/shoulder belt, Type II belt system, three-point belt.
Lap-shoulder belt, continuous loop	A three-point belt that uses one continuous strip of webbing that slides through the latch plate. It is connected at one end to the vehicle at the anchor point and the other to a retractor system.
LATCH - Lower Anchors and Tethers for Children	Child restraint anchorage system specified in FMVSS 225 and corresponding top tethers and lower attachments identified in FMVSS 213, aka, child restraint anchor system, UAS, ISOFIX.
LATCH/UAS CRS Attachment	One of two hardware assemblies on a CR with LATCH, possibly including webbing (or a single assembly with a connector at each end) that enables the CR to be securely fastened to one of two (or both) lower anchorages. Those using webbing and a manual adjuster are referred to as flexible attachments, while those built into the CR base, fixed at 280 mm (11 inches) apart, and equipped with a telescoping adjustment are called rigid attachments.
LATCH/UAS attachment adjuster, flexible	A strap attachment mechanism used on a flexible LATCH/UAS attachment that releases its hold on the webbing for the purpose of lengthening the strap; does not inhibit the strap from being shortened when the free end of the webbing is pulled. Two types: (a) Push Button (b) Tilt Lock.
LATCH/UAS Connector	Connector hardware at the end of a LATCH/UAS attachment used to secure child restraint, compatible with vehicle LATCH/UAS anchorages. Lower connectors can be either a hook-on type or a push-on type. Top tether connectors are generally hook-on type.
LATCH/UAS vehicle anchorage	Hardware in the vehicle to which a top tether or a lower attachment is connected.
Latch plate	The part of the buckle mechanism that locks or connects into the buckle. May be the part that adjusts the length of the lap portion of the belt webbing. The insertion tip is also called the buckle "tongue."
Latch plate positioning feature, vehicle lap and shoulder belt	Federal regulations require that the safety belt latch plate be in a position where it can be reached easily by the occupant. Some vehicle manufacturers keep the latch plate in this position by placing a plastic button or stitching a fold in the lap-shoulder belt webbing that keeps the latch plate from falling out of reach.
Latch plate, dynamic	Sliding vehicle latch plate that temporarily locks the lap and shoulder belt while loaded by an occupant during a crash.
Latch plate, free sliding	A latch plate on a lap-shoulder belt that allows the belt to slip easily between the lap and shoulder portions, aka, sliding latch plate.
Latch plate, locking	A latch plate on a lap-shoulder belt that, when buckled, will allow the lap portion to be pulled into the shoulder portion but will restrict its slippage back to the lap belt; a latch plate on a lap-only belt that restricts slippage once the belt is buckled and pulled tight, aka, cinching latch plate.
Latch plate, sewn	A latch plate on a lap or lap-shoulder belt that is sewn to the seat belt webbing at a fixed point, aka, latch plate, fixed.
Latch plate, switchable	A latch plate on a lap-shoulder belt that can be manually converted from a free-sliding to a locking latch plate for child restraint installation by use of a switch.
Load Leg	An adjustable structural feature of a child restraint that extends downward from the forward portion of a child restraint that is resting on the vehicle seat cushion to the vehicle floor that is intended to limit the rotation of the child restraint in frontal crashes, aka, stability leg, foot prop.

Term	Definition
Load limiter(s)	A seat belt assembly component or feature that controls tension on the seat belt to modulate the forces that are imparted to occupants restrained by the belt assembly during a crash.
Lock-off device	A mechanism attached to the CRS that is used to retain tension when installing with a vehicle seat belt to ensure a secure installation. Lock-off is used to improve pre-crash stability of CR.
Lockable lap belt requirement	A regulated feature requiring that the lap portion of a vehicle belt can be used to tightly secure a child restraint system without any device that must be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle, and shall not require any inverting, twisting or otherwise deforming of the webbing. Requirement generally applies to passenger positions beginning with the 1996 model year.
Locking clip, belt-shortening	A heavy-duty clip intended for use to shorten lap belts around a child restraint. Not to be confused with standard or light weight locking clip that comes with a child safety seat. Must be purchased or ordered from vehicle manufacturer, aka, heavy duty locking clip.
Locking clip, light weight	Metal hardware used to hold the lap portion of a lap-shoulder belt from lengthening during normal driving by clamping the webbing together next to the latch plate.
Lower anchorage	One of two horizontal rigid bars 6 mm in diameter and 25 to 40 mm long specified in FMVSS 225/CMVSS 225, installed in vehicles in or near the seat bight, and to which one of two lower attachments is connected to secure the lower part of the CRS using LATCH/UAS, aka, anchor bar.
Manufacturer's instructions	CRS manufacturers are required to provide printed instructions that outline a step-by-step installation process of their products, positioning the child, and adjusting the system to fit the child. Instructions in the vehicle owner's manual take precedence over those of the child restraint regarding appropriate seating position and the correct use of vehicle belts, lower anchors, and tether anchors.
Misuse	Any deviation from the intended use as communicated in the manufacturer instructions of a CRS or vehicle that might reduce its protective performance.
Non-Approved Product	Product, typically made and marketed by a third party, which is not approved for use with a car seat by the car seat or vehicle manufacturer, commonly referred to as after-market product or non-regulated product.
Pinch Test	Preferred method for consumers to determine tightness of harness relative to child's body. You should not be able to vertically pinch excess webbing at the shoulder once the harness is tightened.
Pretensioner	Feature or system to tighten the vehicle belt before the occupant loads it.
Retractor	A device for storing part or all of the webbing in a seat belt assembly.
Retractor, automatic locking	A vehicle belt retractor that allows the belt to be pulled out initially but locks when the pull-out action stops, and tension is again applied. The retractor keeps the belt from being pulled out farther until it is fully retracted again.
Retractor, emergency-locking	A retractor incorporating adjustment hardware by means of a locking mechanism that is activated by vehicle acceleration, webbing movement relative to the vehicle, or other automatic action during an emergency and is capable when locked of withstanding restraint forces.
Retractor, switchable	A vehicle belt retractor that can be changed from an emergency-locking retractor to an automatic-locking retractor for tight installation of a CR. In most vehicles, the retractor is switched by pulling the belt all the way out of the retractor, which causes the retractor to change into automatic-locking mode. In a few vehicles, the locking mechanism is activated with a switch located near the door, aka, combination or ALR/ELR retractor.
Retractor, webbing sensitive ELR	A type of emergency-locking retractor (ELR) that is temporarily locked by a sudden pull on the belt. When the tension on the belt is released, the belt continues to slide freely in and out of the retractor, aka, belt-sensitive retractor or occupant sensitive retractor.
Ride-down	Extending the stopping time of an occupant, during a crash or abrupt deceleration, to take full advantage of the crushing vehicle and reduce injury severity. This is achieved by coupling the occupant tightly to the vehicle, using a seat belt or installed child restraint, to take full advantage of the crushing vehicle and deployed airbags.
Seat back position, vehicle	Designated position of vehicle seat back reclines for child restraint installation.
Seat belt assembly	NHTSA Sec. 571.209 Standard No. 209; Seat belt assemblies: Seat belt assembly means any strap, webbing, or similar device designed to secure a person in a motor vehicle in order to mitigate the results of any accident, including all necessary buckles and other fasteners, and all hardware designed for installing such seat belt assembly in a motor vehicle.