

Tough Love

These 2016 vehicles, equipped with the latest technologies and safety features, alleviate and even embrace challenging winter road conditions.

by PAUL RUBIO



Snow. Rain. Ice. And more snow. Winter's precipitation paints highways and side streets with potential danger, but that doesn't mean driving through white-blanketed landscapes need be a white-knuckled affair. Thanks to cutting-edge technologies, structural advancements, and safety improvements, both drivers and vehicles have more control than ever when it comes to navigating through inclement conditions. Superlative all-wheel drive powertrains seek

the ultimate balance of power while advanced anti-lock braking systems maintain supreme traction. Intelligent systems anticipate dangerous situations, enhancing stabilization and composure, warning the driver, and, in some cases, self-directing the vehicle. Ground clearance technologies and adaptive headlights guide drivers through situations of extreme snow and sleet. Here are seven 2016 vehicles and highlights of the technologically advanced elements branding them winter trailblazers. ▶

Land Rover Discovery Sport

Introduced for the 2015 model year, the Land Rover Discovery Sport (from \$37,455; landroverusa.com) entered the luxury car market as an all-terrain, versatile, compact SUV. In its sophomore year, the seven-passenger vehicle, framed by a body shell of high-strength steel and lightweight aluminum, features a nine-speed automatic transmission for quick gearshifts across challenging terrain. The fact that it was tested over 6,800 weeks in extreme conditions like deep snow and icy lakes in Sweden only adds to its winter-weather swagger.



HIGHLIGHTS

Land Rover Terrain Response® This patented technology allows drivers to choose from four terrain settings, including a Grass/Gravel/Snow mode, which tailors the vehicle's steering, stability system, gearbox, throttle response, and braking system to slippery on- and off-road conditions.

Engine Drag Torque Control This auxiliary feature of Terrain Response is especially useful in icy conditions, working to thwart lock-up under heavy engine braking by increasing torque to the affected wheels.

Extreme Wading Depth The Discovery Sport can operate in water up to a depth of 23.6 inches (about 4 inches higher than most SUVs with off-road capabilities), allowing the vehicle to traverse heavily flooded areas.

Emergency Braking The extensive technology included in the vehicle's braking system includes Emergency Brake Assist, which increases brake pressure in emergency situations, and Corner Brake Control, which seeks to help stabilize the vehicle as brakes are applied while taking corners.

Lane Departure Warning This preventive safety feature vibrates the steering wheel to warn of unintentional lane drift.

Subaru Crosstrek

The Subaru Crosstrek (from \$21,595; subaru.com), formerly known as the Subaru Crosstrek XV, is a stylish and value-conscious crossover utility vehicle, praised for its off-road capabilities, all-weather aptitude, and advanced pre-collision technology. Like all Subarus, it carries one of the top safety ratings by the Insurance Institute for Highway Safety, and sports numerous features that make it particularly suited to winter driving.

HIGHLIGHTS

Symmetrical AWD Subaru's standard symmetrical AWD is based off a flat, boxer engine—unique to Subarus and Porsches—that distributes power quickly and equitably to the front and rear wheels. By design, the engine can be mounted low in the chassis, fostering a lower center of gravity that enables the Subaru to more easily handle corners without risk of tipping.

Volvo XC90

The second generation of Volvo's original SUV, the XC90 (from \$49,800; volvocars.com), was unveiled in late 2014 with a completely redesigned chassis that underscores Volvo's new safety-centric Scalable Product Architecture (SPA) platform and one of the car industry's most comprehensive and technologically advanced safety packages. Building on this new generation of preventive and protective safety performance, the 2016 model of this slick, Scandinavian, seven-passenger midsize SUV is equipped with a number of features especially pertinent to winter conditions.



HIGHLIGHTS

Intersection Auto-Brake A world's-first technology, the vehicle brakes if you accidentally attempt to steer into oncoming traffic.

Run-Off Road Protection Another world's-first, the XC90 automatically senses when the car has left the roadway, protecting passengers by electronically tightening seatbelts. Special deformation brackets at the base of the driver and front passenger seats absorb the crash energy in the event of a run-off-road accident.

Pilot Assist Particularly handy in bumper-to-bumper winter traffic, this optional feature processes information from the behavior of the car in front, automatically accelerating, decelerating, and steering the XC90 at speeds below 30 mph.

Air-Ride Suspension With the push of a button, change your ground clearance to rise above the snow an extra 1.6 inches, for a total of 10.5 inches of ground clearance. ▷

EyeSight Driver Assist Technology

This top-rated advance collision system operates at all speeds and works off of information fed by two Subaru-developed stereo cameras, employing automatic pre-collision braking, lane departure warnings, and sway warnings when necessary.

Lane Keep Assist Activated by a switch and functional at speeds above 40 mph, this ancillary EyeSight technology automatically redirects the vehicle back into its appropriate lane if drifting, further engaging audible and visual alerts if the vehicle continues to exit the lane.

Advanced Heat System Often an add-on with its more costly counterparts, the Crosstrek's standard all-weather package includes heated seats, heated side mirrors, and heating components under the windshield wipers.

Protective Paneling To mitigate corrosion from salted roads during the winter months, the Crosstrek is layered with protective body paneling.





Cadillac Escalade

Chevrolet Suburban & Cadillac Escalade

The timing couldn't have been better for General Motors' 2015 release of the redesigned 12th generation of the Chevrolet Suburban (from \$49,700; chevrolet.com) and the fourth generation of the Cadillac Escalade (from \$72,970; cadillac.com). Low gasoline prices in tandem with growing global demand for full-size luxury sport utility vehicles that are at once handsome, spacious, tow-ready, tech-savvy, family-friendly—and safe—have translated to an unexpected sales surge. So much so, that in early August 2015 General Motors (which manufactures both models) shifted gears into overtime at its primary full-size SUV plant, boosting production by the thousands to meet demand for both the Suburban and Escalade 2016 models (each is built on the same chassis, but the Suburban carries more cargo capacity while the Escalade sports more frills like Galvano chrome detail, 142 LEDs for the exterior lighting elements, and hand-cut-and-sewn interiors). Retaining the aesthetics of the previous year, the 2016 models of both SUVs have upped the ante on interior technologies and safety



Interior Chevrolet Suburban



Chevrolet Suburban

systems, enhancing several of the same features relevant to all-weather driving. Don't expect changes conducive to wild, off-road driving—these vehicles aren't built for that. Do expect advancements for transporting the family—each accommodates up to eight passengers plus cargo room, the most for any SUV—more safely and securely during the peak frost of winter.

HIGHLIGHTS

Safety Alert Seat This advanced, pre-collision technology alerts drivers of a possible front-end or rear-end collision, employing seat vibration on both the right and left sides of the seat cushion.

Protective Design In the event an accident does occur, both vehicles are equipped with the SUV standard of six premium air bags, as well as a rare front-center air bag. In addition, each vehicle's high-strength steel framework creates a protective safety cell, with strategically placed crumple zones that seek to absorb and divert crash energy.

Automatic Locking Rear Differential This feature, standard in both SUVs, helps the wheels gain greater traction when needed, as in the case of slippery, icy roads.

Lane Keep Assist As part of the Enhanced Driver Alert Package in the Suburban and standard in the Escalade, this technology uses a stereo camera mounted on the windshield to identify lane markings and slightly directs the power steering to keep the vehicle in a designated lane if drift occurs.

Crash Imminent Braking At speeds above 2 mph, ultrasonic sensors will automatically apply the brakes when an imminent crash is detected.

Photos: (Escalade) Richard Prince; (Suburban) Roche Photo; (Jeep) A.J. Mueller.

Jeep Grand Cherokee

When the fourth generation of the Jeep Grand Cherokee (from \$29,995; jeep.com) debuted in 2011, it garnered 30 major awards for categories including safety, value, and off-road capabilities. With the 2016 model, the SUV has again tweaked its award-winning features, offering some of the market's most advanced systems for harsh winter conditions.

HIGHLIGHTS

Quadra-Lift Air Suspension Five height settings raise and lower the vehicle at the push of a button over a lift-span range of 3.8 inches, surmounting specific obstacles, enhancing ground clearance, and facilitating up to 20 inches of water-fording depth.

Selec-Terrain This traction-control technology electronically coordinates functions between 12 different powertrain, braking, and suspension systems as drivers choose various on- and off-road settings for optimum performance under five driving conditions: Sand, Mud, Auto, Snow, and Rock.

Quadra-Drive II 4WD System The latest version of this all-wheel drive system transfers between two-wheel and four-wheel drive and has a rear electronic limited-slip differential to further improve traction.

Hill-Ascent and Hill-Descent Control The vehicle's specialized Selec-Speed Control with Hill-Ascent and Hill-Descent Control eliminates the needs for throttle or brake pedals, allowing drivers to control speed on ascents and descents with the steering wheel paddle shifters—in both forward and reverse. ▶





BMW 7 Series

The 2016 BMW 7 Series (from \$82,295; bmwusa.com) marks the sixth generation of the German automaker's flagship line of full-size luxury vehicles. Currently available in three models—the 740i, the 750i Sedan, and the 750i xDrive—the 7 Series employs a groundbreaking BMW Carbon Core passenger cell, setting a new standard in lightweight design and structural strength. In addition, this new series amplifies the circa 2009 fifth generation with 25 major innovations—13 of which are not offered by any competitors in the segment—as well as a number of enhancements tailored to difficult terrain.

HIGHLIGHTS

xDrive All-Wheel Drive This intelligent all-wheel drive, found in the 750i xDrive model, actively maintains a grip on the road, splitting power between the front and rear wheels, with the ability to sense excess slip and send power to the wheel with greatest footing.

Adaptive Mode One of the coveted 13 BMW exclusives in the 7 Series, the new Adaptive mode in the Driving Dynamics Control system is suited to handle more variable road conditions (intelligently transitioning gears to go from winding roads to busy intersections, based on navigation data), adding to the existing Comfort, Sport, and Eco Pro modes. The powertrain and chassis systems are configured to match the driving style.

Adaptive Brake Lights Under heavy braking, often in conditions of fog, heavy rain, and snow, the inner portion of the tail lamps will illuminate in conjunction with the standard brake lights, alerting drivers to the rear of an eminent stop, helping prevent a rear-end collision.

Active-Driving Assistant New radar-based surface scanners replace previous camera-based sensors, now enabling the vehicle to detect lane markings and surrounding vehicles on icy and snowy surfaces as well as in normal road conditions.

Night Vision, 3D Surround View In low-visibility situations, a night vision system projects images of any heat-radiating objects such as animals and pedestrians to the Central Information Display. In addition, new headlight technology provides visibility nearly twice as far as that of conventional headlights. The new generation of the Surround View system provides top-view, 3D, and panoramic images.



HIGHLIGHTS

Extreme Off-Road Capabilities The vehicle's suspension is designed to handle challenging off-road terrain, enhanced with special AMG-calibrated coil springs and shock absorbers, while also able to ascend an 80 percent grade and withstand a 54 percent lateral slope.

4-ETS* Especially pertinent to slippery winter conditions, this proprietary 4-wheel Electronic Traction System technology maintains grip even if three wheels slip and underscores the G63's advanced all-wheel drive system. The system channels torque to the wheel (or wheels) with traction while intelligently braking those without.

Braking Advancements The vehicle's Brake Assist feature senses emergency braking and distributes extra brake power to advance the stop, while the Hill-Start Assist adaptive braking technology facilitates initial uphill climbs and prevents reverse drift.

Trailer Stability Assist This smart technology helps counteract trailer sway as soon as it starts.

2016 Mercedes AMG G63 SUV

2016 Mercedes AMG G63 SUV

From Mercedes' AMG performance racing division comes one of the fastest and sturdiest—and stylish—sports utility vehicles on the market. The 2016 Mercedes AMG G63 SUV (from \$139,900; mbusa.com) sports a slick yet vintage boxy aesthetic, true to the robust, circa 1970s military roots of Mercedes' G-Class. Today, this luxury SUV shines as a military-grade performance vehicle and one of the fastest SUVs around, with a 563-horsepower engine and the ability to accelerate from 0 to 60 mph in just 5.3 seconds. Given its military use in some of the world's most extreme locations and climes—from sand to snow—the vehicle is well equipped to surmount the toughest of winter conditions at home. ♦