

Presidential limousine

On January 20, 2009, **Barack Obama was sworn in** as the 44th President of the United States of America. In addition to millions of people who watched the historic moment on television, citizens from around the world had made the trip to Washington, D.C., to witness **the event**. Not only did the large crowds bring a wave of excitement to the festivities, but they also presented a host of logistical issues and safety concerns for security personnel to consider.

The efforts to keep President Obama safe have resulted in a new presidential limousine, complete with state-of-the-art technology and security measures, many of which are the **products of chemistry** (the average automobile contains nearly \$2,450 worth of chemical processing and products). The Presidential State Car, informally dubbed "Cadillac One," is a completely new design, succeeding the previous limousine that debuted in 2004.

For optimal outward visibility, the car is slightly more upright than its predecessor, though it occupies approximately the same overall footprint on the road, with a similar size and proportions.

The rear passenger area includes an extensive executive compartment with ample seating space, outward visibility, and useful mobile office features. President Obama's seat features a foldaway desktop, notebook computer with wireless fidelity (Wi-Fi) connectivity, satellite phone, and direct line to the Vice-President and the Pentagon. The rear compartment also seats four passengers and features a glass partition that can only be lowered by a switch President Obama controls. A panic button has also been installed for the President to use to summon for help if necessary.

Other features include an armor-plated gas tank protected by a specially designed foam that prevents it from exploding even after a direct hit. The trunk holds a supply of oxygen and a firefighting system. The doors are also armor-plated and eight inches thick, featuring the same heavy-duty construction as a Boeing 757 jet cabin door. The vehicle is equipped with night vision cameras, pump-action shotguns, and tear gas cannons. Bottles of the president's blood are kept on board in case he needs an emergency transfusion.

The bodywork of the limousine is a combination of aluminum, titanium, and ceramic materials, to break up possible projectiles. Other materials have not been disclosed, due to necessary confidentiality regulations.



The vehicle's Goodyear tires are shred-and puncture-resistant and reinforced with **Kevlar® fiber**, which consists of long molecular chains produced from poly-paraphenylene terephthalamide. They are actually truck tires—necessary due to the limousine's extra load that includes a heavy-duty chassis, extended length, and armored material. The rims use a run-flat device that enables the car to be driven even with zero air pressure in all four tires.

The driver's windows are tough enough to withstand armor-piercing bullets. The only window that opens, by just 2.75 inches, lets the driver pay a toll or talk with secret service agents running alongside. The driver's compartment includes a standard steering wheel and a dashboard that contains a communications center and Global Positioning System (GPS) connectivity.

An embroidered presidential seal is positioned in the center of the rear seat back panel, as well as on each rear door trim panel. The U.S. and presidential standard flags are placed on the right and left front fenders and illuminated at night by light-emitting diode (LED) spotlights.

The vehicle was designed, developed, and tested by specialists who subjected it to an extreme regimen to guarantee performance would meet precise functional requirements. Security provisions were undertaken during development to ensure the car's full functional capabilities were preserved and confidential.

Price: \$545,000

Length: 18 feet

Height: Six feet

Engine: 1.7-gallon diesel

Maximum speed: 62 miles per hour

Fuel Consumption: About eight gallons per 62 miles