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Top 20 Mercedes-Benz Assistance Programs

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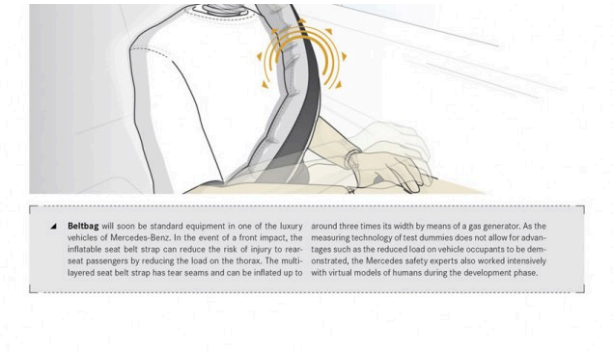
WE'VE COMPILED A LIST OF THE TOP NEW ASSISTANCE PROGRAMS AND THEIR PURPOSE TO KEEP YOU UP TO SPEED ON THE NEW TERMS



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19 November 2012 | JClark

Over the last couple of weeks, Mercedes has been offering up bits and pieces of information regarding the all-new, 2013 S-Class. With the launch of the new S-Class comes quite a few new, never before seen safety features; and with those new features comes quite a a large amount of questions regarding the new terminology (namely, what exactly are the assistance programs and what do they do?) To make reading future press releases easier on you, we've compiled a list of the top new assistance programs to keep you up to speed on the new terms, some of which are seen only on the S-Class and some of which are available brand wide.

Adaptive Highbeam Assist PLUS: permanent main beam with no dazzling. If the camera-based Adaptive Highbeam Assist PLUS picks up oncoming traffic or vehicles ahead, it adapts the light distribution according to the specific situation when the main beam is on. A mechanism in the headlamp module masks the portion of the LED headlamps' cone of light where there are other vehicles to prevent their drivers being dazzled. Possible backglare caused by increased use of the main beam and highly reflective signs at the side of the road is also detected and eliminated by dimming the headlamps accordingly. Consequently, the driver can simply leave the main-beam headlamps on at all times and use their full range without irritating or even endangering other road users. The system is active at speeds above 30 km/h when travelling in the dark on roads without street lighting.

Active seat-belt buckle: comfort and safety. An electric motor extends and retracts the belt buckle automatically. In this way, any belt slack in the area of the pelvis and thorax can be reduced so that passengers are secured more firmly in both the sideways and the lengthways direction. Fastening seat belts in the rear has also been made simpler: the seat belt buckle emerges from the upholstery when the rear doors are opened and is provided with an illuminated insertion slot.

Active Parking Assist: automatic manoeuvring into and out of parallel and perpendicular parking spaces. The Active Parking Assist is designed for automated parking with active steering and brake control in both parallel and end-on spaces. The driver moves the vehicle by manually pressing the accelerator or releasing the brake. What's more, the system is now also able to manoeuvre out of parallel parking spaces again all by itself with automatic steering and brake control, assuming the vehicle was parked there automatically previously.

Active Lane Keeping Assist: intervention to correct unintentional lane changes even with a broken line. The new improved version of the Active Lane Keeping Assist is now also able to intervene should the driver inadvertently cross a broken line when there is a risk of a collision. The system uses the information from the radar system to detect when the adjacent lane is not clear. The radar system has been supplemented by a sensor at the rear, which works in unison with the other sensors in the front and rear bumpers. The Active Lane Keeping Assist is not only capable of recognising critical situations such as overtaking vehicles, parallel traffic and parking vehicles, it can also respond effectively to oncoming traffic. If the system detects the risk of a collision, not only does it cause the steering wheel to vibrate in pulses as a haptic warning for the driver, it intervenes with lane-correcting single-sided braking via the ESP®. It thereby forms the ideal complement to the Active Blind Spot Assist.

Active Blind Spot Assist: warning for lane changes. This radar-based system alerts the driver if it detects another vehicle in the blind spot when changing lanes. If the driver ignores the system's warnings and comes dangerously close to the vehicle in the adjacent lane, Active Blind Spot Assist intervenes by applying the brakes at the wheels on the opposite side of the vehicle to create a yawing movement that can avert a collision.

BAS PLUS with Cross-Traffic Assist: braking assistance also for crossing traffic. For the first time, the Brake Assist system BAS PLUS with Cross-Traffic Assist can help to avoid not just rear-end collisions with vehicles directly in front, but also imminent crashes with cross traffic at junctions. If the anticipatory system detects a hazardous situation of this type based on the amalgamated data from the new stereo camera and the radar sensor system, it prompts the driver to start emergency braking by activating visual and acoustic warnings. If the driver presses the brake pedal too tentatively, as is often the case, BAS PLUS will step in by automatically boosting brake pressure for effective emergency braking, even applying the brakes at full power if necessary. The Cross-Traffic Assist is active at speeds up to 72 km/h.

BAS PLUS and PRE-SAFE® Brake: preventing traffic accidents with pedestrians and vehicles in front. Pedestrian detection has been added to the BAS PLUS and PRE-SAFE® Brake functions, while autonomous braking for vehicles in front has undergone a major advance. By fusing the data from the stereo camera and radar sensors, it is now possible to detect pedestrians in front of the vehicle. Visual and acoustic warnings are given when a hazard is spotted. If the driver then reacts by braking, the braking power will be boosted by BAS PLUS as the situation requires, right up to a full brake application. Should the driver fail to react, the PRE-SAFE® Brake will trigger autonomous vehicle braking. The pedestrian detection is active up to approx. 72 km/h, and is able to prevent collisions with pedestrians from an initial speed of up to 50 km/h. The operating range of the autonomous braking function for stationary vehicles has been optimised so that rear-end collisions can likewise be avoided at speeds of up to 50 km/h now.

Beltbag: reduces the risk of injury to passengers in the rear. This inflatable seat-belt strap is able to reduce the risk of injury to passengers in the rear in a head-on collision by lessening the strain placed on the ribcage. Should the crash sensors detect a severe frontal impact, the airbag control unit will trigger deployment and inflation of the beltbag. A gas generator then inflates the multi-layered belt strap with Velcro seams to nearly three times its normal width. The resulting larger surface area is able to better distribute the force acting on the seat occupant, thereby reducing the risk of injury.

Data fusion: amalgamation for reliable operation. Highly sophisticated sensors and the necessary networked algorithms provide the foundation for innovative new functions. Data fusion enables the algorithms for the varying systems to amalgamate the visual information from the stereo camera with the readings from the radar sensors. Many of the assistance systems from Mercedes-Benz work in this way, fusing multiple or complementary data sources to ensure reliable operation.

DISTRONIC PLUS with Steering Assist: comfort-enhancing assistance with lateral lane guidance. The DISTRONIC PLUS proximity control system is a driver aid designed to keep the vehicle at the desired distance from another vehicle in front, even in stop & go traffic. This basic radar-based function has now been enhanced by the addition of a Steering Assist, which helps drivers to stay centred in their lane by generating the appropriate steering torque when travelling on a straight road and even in gentle bends. The stereo camera recognises lane markings as well as a vehicle driving ahead, and relays this information to the electric steering assistance system. When driving at slow speeds, e.g. in congested traffic, the Steering Assist can use the vehicle ahead as a means of orientation, even when there are no clear lane markings visible.

The system's design is so refined that the sensors can detect whether the driver's hands are actually on the steering wheel. If they are not, a visual warning is issued first. Should the driver fail to react, a warning signal sounds and lateral lane guidance is deactivated.

The system can be activated at speeds up to 200 km/h. A green steering wheel symbol appears in the instrument cluster to indicate when the Steering Assist is operating while DISTRONIC PLUS is activated.

Infrared headlamps: two separate light sources in the headlamp assemblies light up the road ahead with invisible infrared light. Used for the Night View Assist PLUS.

Far-infrared camera: detects relevant objects (pedestrians and animals such as deer, horses, cattle) at a distance of up to 160 m as a thermal image, enabling it to control the warning function. Used for the Night View Assist PLUS.

Multi-level functionality: dazzle protection for following traffic. The intensity of the brake lights is reduced at night-time or while waiting at traffic lights out of consideration for any road users behind.

Night View Assist PLUS: alerting to pedestrians and animals. The new Night View Assist PLUS is capable of detecting pedestrians and animals in potentially hazardous positions in front of the vehicle. It automatically switches the instrument cluster display from the speedometer to a crystal-sharp night view image to alert the driver in unlit areas. Pedestrians or animals detected ahead are clearly highlighted in colour in this image. The spotlight function is additionally used to repeatedly flash pedestrians in the warning zone by means of a special module in the front headlamps. This attracts the driver's attention to the source of the danger at the same time as warning the person on the side of the road. These functions are now available in urban areas, too. Infrared headlamps, a long-range infrared camera, a short-range infrared camera and a spotlight function are used to provide the various functions.

Near infrared camera: shows a sharp greyscale image of the area in front of the vehicle in the instrument cluster display. Used for the Night View Assist PLUS.

PRE-SAFE® Impulse: at an early phase of the crash, before the resulting deceleration starts to increase, the front occupants are pulled away from the direction of impact and deeper into their seats by their seat belts. By the time the accident enters the phase when loads peak, the extra distance they are retracted by can be used while dissipating energy in a controlled fashion. Pre-acceleration and force limitation allow the occupants to be temporarily isolated from the effects of the crash, significantly reducing the risk and severity of injuries in a frontal collision. With PRE-SAFE® Impulse, the seat belt strap can be retracted by pyrotechnic means at all three belt anchorage points, and released again with controlled force. The fundamental difference compared to conventional belt tensioners is that the force for retracting the belt strap is maintained for a much longer time. The deployment logic fires the seat belt system's belt tensioners progressively depending on the seriousness of the accident. In this way, the tensioning force can be adapted as required.

PRE-SAFE® PLUS: occupant protection for an imminent impact from the rear. PRE-SAFE® PLUS offers an extension of the familiar occupant protection measures in situations where traffic behind poses a danger. A radar sensor in the rear bumper monitors the traffic behind the vehicle and can detect the risk of a rear-end collision. The system warns the driver of the vehicle behind by activating the rear hazard warning lights at a higher frequency than normal. Apart from this, the PRE-SAFE® anticipatory occupant protection measures, including the reversible belt tensioners, are also deployed. If the vehicle is stationary, PRE-SAFE® PLUS will keep it firmly braked. Minimising the forward jolt in this way can greatly reduce the strain placed on the occupants, such as the risk of whiplash injuries. Firmly applying the vehicle's brakes can help to prevent secondary accidents too, such as running into a vehicle in front, for example, or colliding with pedestrians or other road users at junctions.

Radar: sensor technology for picking up relevant obstacles. New improved versions of the short-range and long-range radars combine with a new multi-mode radar to detect relevant obstacles such as vehicles or people in defined areas in front of, next to and, now, behind the vehicle, too. The system employs 2 x short-range radars at the front (range 30 m, opening angle 80°), 1 x long-range radar at the front (200 m, 18°) with mid-range scan (60 m, 60°), 2 x short-range radars on the sides at the rear (30 m, 80°) and 1 x multi-mode radar at the rear (30 m, 80° and 80 m, 16°).The algorithms for the varying systems amalgamate (data fusion) the radar readings with the visual information from the stereo camera. Many of the assistance systems from Mercedes-Benz work in this way, fusing complementary data sources to ensure reliable operation.

Spotlight function in the front headlamps: flashes pedestrians detected with the help of the controllable main beam module. Used for the Night View Assist PLUS.

Stereo Multi-Purpose Camera (SMPC, stereo camera for short): 3D vision. Just like the Multi-Purpose Camera (MPC) fitted previously, the stereo camera is positioned behind the windscreen in the vicinity of the rear-view mirror. However, the camera features two "eyes" that produce a 3D view of the area up to around 50 metres in front of the vehicle while monitoring the overall situation ahead for a range of up to 500 metres. In this way, the camera is able to provide data for processing by various systems. Intelligent algorithms perform a visual evaluation of this three-dimensional information in order to detect and carry out spatial classification of both vehicles that are driving ahead, oncoming or crossing, as well as pedestrians and a variety of traffic signs within a large field of vision. Used for example for BAS PLUS with Cross-Traffic Assist and DISTRONIC PLUS with Steering Assist.

Traffic Sign Assist: now recognises no-overtaking zones and access restrictions, too. The new Traffic Sign Assist, which builds on the capabilities of the previous Speed Limit Assist, represents yet another contribution to accident prevention from Mercedes-Benz. The system is now also able to recognise no-overtaking zones and alert drivers to access restrictions. The camera on the inside of the windscreen continues to pick up speed limit signs, including those on overhead gantries and in roadworks, for example. The camera's data is cross-referenced against the information in the navigation system and can be displayed in both the instrument cluster and the map view. If the camera fails to spot

any road signs showing a speed limit or a speed limit is lifted, the legal speed limits based on the navigation data are shown instead, such as a maximum speed of 100 km/h on country roads in Germany or 50 km/h in built-up areas. No-overtaking zones and the signs signalling their end are also registered and displayed, while in the case of signs imposing access restrictions, an acoustic warning is additionally emitted together with a visual warning in the instrument cluster.

Photo Gallery

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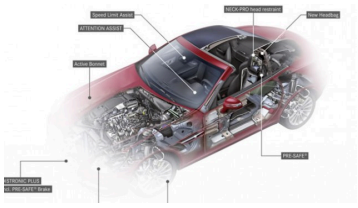

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