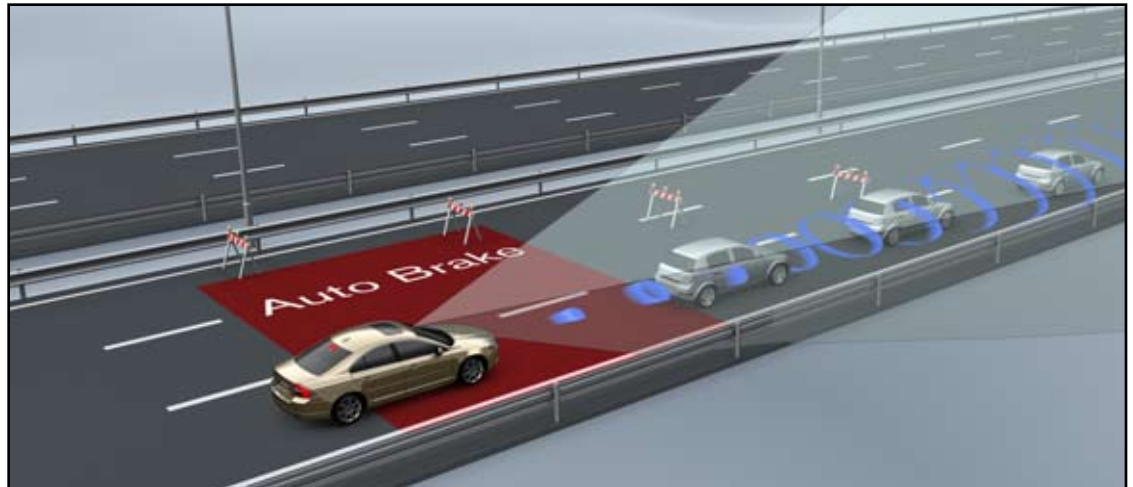


Collision warning and auto braking *made simple*

By Allan Lamb and Bob McHugh

It probably won't come as a surprise, but studies show that driver distraction is a factor in upwards of 90 per cent of all traffic collisions. We eat, drink, talk, use cellphones and surround ourselves with a variety of audio and other electronic gadgets that take our attention away from the real job at hand – driving!



Okay, you never take your hands off the steering wheel and diligently focus your eyes on the road ahead at all times, but what about that guy

behind? If for some reason you have to stop suddenly, will the car behind rear-end collision is imminent. It then autonomously engages the braking system, if the driver does not act.

With Auto Brake, when a driver approaches a vehicle in front too quickly and a crash is imminent and can no longer be avoided by braking or steering, the car starts to brake automatically.

First introduced in the 2007 S80 sedan, it will also be available in the Volvo V70 and new XC70, in the 2008 calendar year. The CWAB system is in an option package that will cost about \$1,500 and also includes Adaptive Cruise Control, as it shares the same hardware.



Rear impacts represent a third of all reported collisions, according to Volvo, and in more than 50 per cent of the cases, the driver didn't brake at all. Never even tried to stop!

This brings us to an interesting and mildly controversial system from Volvo called Collision Warning and Auto Brake (CWAB). This system first alerts the driver to act when a

Data Fusion technology is used by CWAB to combine information from both radar and a camera, to detect and identify vehicles in its path. Radar monitors an area 150 metres in front of the vehicle and the camera has a range of 55 metres.

When a CWAB-equipped Volvo approaches a vehicle too quickly, a heads-up display projects a flashing red warning light onto the windscreen in front of the driver. At the same time, it pre-charges the brake system and gives the driver an audible warning signal to react to the situation.

The driver gets to choose from three sensitivity settings for the CWAB

Drive to Save Lives

Driving is a complex activity. Don't let distractions take your attention away from driving.

A safety tip from the BCAA Traffic Safety Foundation





The radar sensor in this Volvo's grill is part of the Collision Warning and Auto Brake system.

system in the car settings menu. This is to adapt the warning system to different driving conditions and to allow it to match individual driving styles.

Pre-charging the brake system shortens reaction time by moving the brake pads against the discs. Braking pressure is also reinforced hydraulically, which ensures effective braking even if the driver does not press hard on the brake pedal.

If the driver doesn't brake and a collision is still imminent, the brakes are activated. Auto Brake is designed to lower the impact speed as much as possible – it may not prevent a collision.

The object is to give the driver every possible opportunity to avoid a collision, before applying full braking. Even bringing the collision speed down from 60 km/h to 50 km/h reduces impact energy by

approximately 30 per cent, according to Jonas Tisell, Technical Project Manager for CWAB at Volvo. It could make the difference between a minor injury consequence and a serious one for occupants.

Auto braking only occurs if both sensor systems agree that the situation is critical. Combining information from both a radar sensor and a camera, gives Volvo a higher level of confidence in the system to make automatic braking possible, according to Tisell.

Now, you could argue that CWAB is taking away control of a vehicle from a driver, who may be aware of other factors or be able to steer and avoid a collision. Conversely, you could argue that auto braking should occur sooner to positively prevent a collision.

We would like to see CWAB on more vehicles, particularly that one in the rear-view mirror.

Allan Lamb is the Executive Director of the BCAA Traffic Safety Foundation and Bob McHugh is a freelance automotive journalist. This article was originally published in The Province newspaper.