

1 Warnings

Start here 1 Brainstorm with the whole class. What car safety systems have you heard about? Which ones (a) take control from the driver and (b) only warn the driver but do not take control?

Reading 2 Read this article and answer the questions below.

LANE KEEPING ASSIST

a warning system that helps drivers stay in lane

Lane Keeping Assist (LKA) systems help a driver to keep their vehicle in its lane. There are two main types:

- systems which give the driver an audible or visible warning if the vehicle drifts out of its lane.
- 5 Alternatively, they give feedback such as vibrating the steering wheel.
- systems which also take remedial action after giving a warning. For instance, if the driver ignores the warning, the system automatically corrects the steering so that the vehicle maintains its position in the lane.

Some cars made by Volvo, BMW, GM and Mercedes-Benz, for example, use the warning only system. Using cameras that monitor road markings, the system can
15 detect when a car departs from its lane.

The system can also decide if the driver leaves the lane intentionally. It gives no warning if the driver accelerates before overtaking, brakes heavily, activates the indicators, steers into a bend, or returns the car to its lane.



20 However, if the system decides that the driver is moving the car out of its lane unintentionally, it activates a motor, which vibrates the steering wheel. This gives gentle tactile feedback, and usually makes the driver counter-steer until the car regains its position in the lane.

25 Some Toyota LKA systems, however, intervene if the driver ignores a warning. For example, it may apply some pressure on the brakes or some torque on the steering column to bring the vehicle back into the lane.

- 1 Can you think of examples of (a) *audible* (line 3), (b) *visible* (4) and (c) *tactile* (23) warnings?
- 2 Which make of car takes corrective action if the driver does not respond to a warning?
- 3 If a driver uses the car's indicators and then crosses into another lane, what action, if any, does the warning system take?
- 4 Find words in the text that mean (a) *corrective* (b) *check continuously* (c) *discover* (d) *on purpose* (e) *steer in the opposite direction* (f) *twisting motion*

Vocabulary 3 Find six more phrases in the text which express the meanings in the table (two for each meaning).

remain in correct lane	leave the lane	go back into lane
stay in lane	drifts out of its lane	returns the car to its lane

Listening

4 14 Listen to this phone conversation and answer the questions.

- 1 What is Max's *main* purpose for phoning Tom?
- 2 What topics do they talk about *before* and *after* discussing the main purpose of the call?
- 3 After this call, do you think Max and Tom's working relationship is (a) worse (b) the same or (c) better than before? Why do you think this?

5 15 Listen to this meeting and answer the questions.

- 1 What is the purpose of the meeting?
- 2 Which (a) sensor and (b) warning system do they agree on?

6 Listen again and answer these questions.

- 1 What type of sensor was suggested but not agreed on?
- 2 What *four* types of warning were suggested but not agreed on?
- 3 Why does Tom not like safety systems which take control of the car?



7 Complete these extracts from the discussion with the words and phrases in the box.

by the way in other words alternatively you have a point anyway for instance

- 1 Yes, I agree, _____ there ...
- 2 ... the controller can give a warning. _____, you could have a flashing light ...
- 3 We shouldn't use a SatNav voice. _____, I had a very bad experience with a SatNav last week ...
- 4 _____, let's keep to our main discussion.
- 5 ... we should use normal feedback signals, _____, signals from the real world.
- 6 It could make him ... press the brakes too hard. _____, he might counter-steer too much ...

8 Listen again, and check your answers to 7.

9 Match the language functions 1–6 with the words and phrases in 7.

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|----------------------------------|----------------------------|
| 1 give an example | 4 agree with someone |
| 2 change the subject | 5 give another possibility |
| 3 say the same thing differently | 6 return to the main point |

Speaking

10 Work with the whole class. Discuss the question 'Are cars too safe?' The class should divide into two groups with opposite points of view.

Group A: Your job is to design automatic safety devices (such as anti-lock braking devices and air bags). Your view is that everything possible should be done to protect drivers, passengers and other road users by developing automatic safety devices in cars.

Group B: Your job is to advise car manufacturers on driver behaviour in safety matters (similar to Tom's job in audio 14 and 15). Your view is that too many automatic safety devices in a car take away the driver's responsibility. They make the driver feel too safe and protected, which is dangerous. You prefer feedback systems which warn the driver about dangers.