Driverless Cars

"After a lifetime of driving, repairing, and studying automobiles, I have come to an unavoidable conclusion— we are the weakest link in a car."

—Peter Cheney, Automotive Journalist

Pre-Reading

A. Warm-Up Questions

1. What is more dangerous, a human driving a car or a car driving without a human?

2. What reasons are there for developing self-driving technology?

3. Will driverless cars be able to share the roads with manual drivers?

B. Vocabulary Preview

Match the words on the left with the correct meanings on the right.

____	1.	autonomous	a)	leftover bits of material or objects
____	2.	fleet	b)	to bump into the back of someone's vehicle
____	3.	sensor	c)	a group of vehicles with a single purpose and ownership
____	4.	distracted	d)	a test model
____	5.	rear-end (verb)	e)	a device that responds to its surroundings
____	6.	sideswipe (verb)	f)	acting or working on one's own, without help
____	7.	prototype	g)	a person who is inside or residing in something
____	8.	debris	h)	to not be excited or happy about something
____	9.	not crazy about	i)	to strike the side of someone's vehicle
____	10.	occupant	j)	not focused on what is important

Reading

DRIVERLESS CARS
Get your hands off the wheel

1. **Autonomous** driving technology is evolving at high speeds. Google has been testing a self-driving **fleet** for a few years, and the Ford Motor Company says it will start selling driverless cars by 2025. A number of US states have legalized the testing of autonomous vehicles, and the safety data is starting to come in.

2. In the US, driver error is blamed for up to 94% of car accidents. Self-driving vehicles rely on **sensors** to make smart decisions. They drive at a safe speed and slow down to avoid accidents. Unlike humans, autonomous vehicles are always sober, and they never get **distracted**.

3. You will likely never get **rear-ended** by a self-driving car, but could you get **sideswiped**? Like all computers, self-driving cars do have limitations. Early **prototypes** cannot detect a police officer doing hand signals at the side of the road. These test vehicles also have trouble differentiating between harmless **debris** such as shopping bags and dangerous objects such as truck tires.

4. **Not** everyone is **crazy about** the idea of hands-free driving. Some people feel uncomfortable giving up control just as they do when boarding a plane. Others have no interest in the price tag that will likely come with driverless technology. Perhaps low insurance rates and self-park features will convince everyone to hand over their keys.

5. Will autonomous vehicles have difficulty sharing the road with manual drivers? Will a licensed driver always have to be on board? Who will be at fault if a vehicle gets in an accident without an **occupant**?

Comprehension

Discuss these questions in pairs, and write the answers in your notebook.

1. What is the article mainly about?
2. Why does the report mention Google?
3. What do the early prototypes have difficulty with?
4. Why does the report mention an airplane?
5. What does the author imply about car insurance?

Vocabulary Review

Which word from page 1 is described in the sentence?
You may need to make the word plural or change the word form.
More than one option may be possible.

#	Sentence	Word
1	I didn't check my blind spot, and I hit the side of a car in the left lane.	
2	The car will beep if there is an object behind you.	
3	After the accident, there was twisted metal all over the highway.	
4	I turned away from the road to see who was calling.	
5	We own ten taxis in this city.	
6	I don't really like the idea of a *No Homework Policy*.	
7	You have to have three people in the vehicle to drive in that lane.	
8	Some modern cars already have driverless features like cruise control.	
9	The concept car is not road-worthy yet.	
10	My back license plate fell off after the accident.	

Grammar Review

A. Reference

In English, it is common to use the verb *get* in the passive voice. This form is used to show that an action takes place by someone or something else. This is a common construction to use when talking about issues related to cars and driving.

get + past participle

- get sideswiped
- get rear-ended
- get passed
- get pulled over
- get distracted
- get broken into
- get stolen

Note:

When using this construction, it is optional whether or not to include who or what did the action. You may or may not know *who is to blame* or *who is at fault*.

- My bike got stolen.
- My car got sideswiped.
- I got distracted by my crying baby.

B. Practice

Now practice asking a classmate some questions. Use the examples above to explain what happened. Then switch roles.

1. Why did you put an alarm in your car?
2. What happened to your driver's side mirror?
3. Why did you buy a new GPS?
4. Why did you drive to the side of the road?
5. What happened to your back bumper?
6. Why did you move to the slow lane?
7. Why did you run a red light?

Example:

Q: Why did you drive to the side of the road?

A: I got pulled over by the police.

Discussion Questions

1. Do you watch the road closely when you are a passenger?
    Do you think you would do the same in a driverless vehicle?

2. What would you do with your extra time if you did not have to
    drive a vehicle? If you don't drive, what do you think commuters
    will do with their free time in a driverless vehicle?

3. Will driverless vehicles have trouble sharing the road with
    manual vehicles? Which will be more problematic to the other?

4. Will traffic jams still exist when all vehicles are driverless?

Critical Thinking

IN PAIRS OR SMALL GROUPS

One thing humans may be better at than robots is prioritizing. What will
self-driving cars do in the case of an unavoidable accident? For example,
a human driver knows to drive into a garbage can rather than to run over
a mother with her stroller. Will/should cars be programmed to sacrifice
the occupant's life to save other lives when these are the only two options?

Listening – Gap Fill

🎙 http://blog.esllibrary.com/2016/09/28/podcast-driverless-cars/

Fill in the blanks as you listen to the recording.

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   autonomous vehicles, and the safety data is starting to come in.

2. In the US, driver error is blamed for up to 94% of car accidents.
   Self-driving vehicles rely on _____ to make
   smart decisions. They drive at a safe speed and slow down to
   avoid accidents. Unlike humans, autonomous vehicles are always
   sober, and they never get _____ .

3. You will likely never get _____ by a self-driving car,
   but could you get _____ ? Like all computers, self-
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   drivers? Will a licensed driver always have to be on board? Who will
   be at _____ if a vehicle gets in an accident without
   an _____ ?

ANSWERS:

1. Autonomous, fleet
2. sensors, distracted
3. rear-ended, sideswiped, prototypes, debris
4. crazy about, insurance
5. fault, occupant