

APPENDIX 3: NARRATIVE FOR THE TRAINING VIDEOS

INTRODUCTION

Each driver who took part in this experiment was shown a videotape containing introductory material and experimental instructions. Two different versions of the video were produced: one for the group of drivers who drove with the intelligent vehicle systems, the other for the drivers in the control group.

VIDEOTAPE #2.1

This was used for the drivers who drove with the intelligent vehicle systems.

[A. Introduction]

[Camera position #1]

Passage A.1: The study in which you are about to participate is part of an ongoing investigation of advanced automobile technology. We are conducting the investigation for the FHWA, the Federal Highway Administration. The FHWA is responsible for safety and travel effectiveness on our highways. In this investigation, the FHWA is trying to determine whether newly developed technology will help to reduce congestion and to increase highway safety. We are conducting a series of studies using the Iowa Driving Simulator. We will determine how well the advanced technology might work, and how easy it is for drivers to use. The data provided by you, and others, will aid us in making accurate and responsible recommendations about how advanced automobile technology should be designed and used. This is a test of the technology, not a test of you or your driving skills. We will maintain your privacy—your data will never be presented with your name attached.

[Camera position #2]

Passage A.2: The car that you will drive in the simulator has been equipped with two advanced technology systems. The first is a Speed, Steering, and Gap Control System that will maintain whatever speed you set, keep your car in the lane you choose, and maintain the distance from the vehicle ahead. The second system is a Collision Warning System that will warn you if you approach the vehicle ahead of you too fast.

[B. The Speed, Steering, and Gap Control System]

[Camera position #2]

Passage B.1: Let me explain how the Speed, Steering, and Gap Control System works. When you first switch on the system, it will automatically maintain the speed at which your car is currently moving. It will also keep you as far from the vehicle ahead of you as you are when you turn on the system—with two exceptions. The exceptions are that if the vehicle ahead is far away from you, the system will set the gap to the maximum; and if you are too close to the vehicle, the system will set the gap to the minimum. The system will maintain whatever speed you set, keep your car in the lane you choose, and maintain the distance from the vehicle ahead.

[Camera position #2]

Passage B.2: If the vehicle ahead is traveling slower than you are, you will gradually catch up to it. As long as the distance between you and the vehicle ahead is greater than the gap that you selected, you will continue to get closer to that vehicle. When the distance between you and the vehicle ahead is equal to the gap you selected, your car will slow down and maintain the selected gap.

[C. Switching on the Speed, Steering, and Gap Control System]

[Camera position #2]

Passage C.1: A control panel is used to switch on both systems. It will be located to your right in the car.

[Camera position #2]

Passage C.2: At the top of the control panel you will see a message display. Below the message display, there are two sets of controls. The controls to the right are for the collision warning system—we will talk about them later. The controls located to the left of the control panel are marked *Speed*, *Steering*, and *Gap*.

[Camera position #2]

Passage C.3: To switch on the speed, steering, and gap controls, you press the *Set* key. As soon as the *Set* key is pressed, the Speed, Steering, and Gap control systems will be activated. You will know that they are switched on because the *Systems-on* indicator will be illuminated and, on the display above the controls, you will see a message informing you that the automated systems are on.

[D. Setting the Speed]

[Camera position #2]

Passage D.1: When you switch the system on, a speed and gap will automatically be set—the speed and gap setting are indicated on the message display. The speed of your car at the time you turn on the system will be the initial speed setting.

[Camera position #2]

Passage D.2: You can select a different speed setting by using the rocker switch marked *Speed*. To increase the speed setting, you press the top of the rocker switch, where there is an arrow pointing upward. To decrease the speed setting, you press the bottom of the rocker switch, where there is an arrow pointing downward. The speed setting that you select will be indicated on the message display. The minimum speed setting is 30 miles an hour.

[E. Setting the Gap]

[Camera position #2]

Passage E.1: When you switch on the system, the gap as well as the speed will be set automatically. Usually, the gap will be set at the current distance between you and the vehicle ahead. But, if you are less than 0.5 seconds away, the gap will be set at 0.5 seconds; and, if you are more than 5 seconds away, the gap will be set at 5 seconds.

[Camera position #2]

Passage E.2: You can also change the gap setting. By doing this you will change the distance at which your car will follow a vehicle in the lane ahead of you.

[Camera position #2]

Passage E.3: You can select a different gap setting by using the rocker switch marked *Gap*. To reduce the gap setting—and travel closer to the vehicle ahead—you press the bottom of the rocker switch, where there is an arrow pointing downward. To increase the gap setting—so that you increase the distance to the vehicle ahead—you press the top of the rocker switch, where there is an arrow pointing upward. The gap setting that you select will be indicated on the message display. The maximum gap setting is 5 seconds, the minimum is 0.5 seconds.

[F. Disengaging the Speed, Steering, and Gap Control System]

[Camera position #2]

Passage F.1: You will disengage the speed, steering, and gap control system if you press the accelerator or brake pedal, or if you move the steering wheel as you would to change lanes. In each case, you will regain control of the speed and the steering, and you will hear the following message:

["System off. You must steer and control your speed."]

[G. Re-engaging the Speed, Steering, and Gap Control System]

[Camera position #2]

Passage G.1: You may choose to disengage the speed, steering, and gap control system for various reasons—for example, because you are changing lanes or overtaking another vehicle. Once the maneuver is complete, you may wish to re-engage the system and keep the same speed and gap settings that you had before the maneuver—to do this you must press the *Resume* key.

[Camera position #2]

Passage G.2: After the maneuver is complete, you may want to re-engage the system, but with different speed and gap settings. There are two ways of doing this: you can either press the *Resume* key, and use the *Speed* and *Gap* rocker switches to make the changes; or, before switching the system back on, you can get to the new speed and gap that you want, and then press the *Set* key

[H. Activating the Collision Warning System]

[Camera position #2]

Passage H.1: You can operate the Collision Warning System by using the controls on the right of the control panel.

[Camera position #2]

Passage H.2: To switch on the Collision Warning System, you press the *Collision Warning* key. The system will be activated and the *Collision Warning* indicator will be illuminated.

[Camera position #2]

Passage H.3: When this system is operating, if you are approaching the vehicle ahead of you in your lane so rapidly that you are in danger of colliding with it, the accelerator pedal

will automatically push up against your foot. If you feel the accelerator pedal pushing against your foot, you should slow down immediately.

[I. Activating the Collision Warning System]

[Camera position #2]

Passage H.3: If you wish to disengage the Collision Warning System, you should press the *Collision Warning* key. When it is pressed the system will go off.

VIDEOTAPE #2.2

This was used for the drivers in the control group.

[A. Introduction]

[Camera position #1]

Passage A.1: The study in which you are about to participate is part of an ongoing investigation that we are conducting for the FHWA, the Federal Highway Administration. The FHWA is responsible for safety and travel effectiveness on our highways. In this investigation, the FHWA is trying to determine how to design our future highways in order to reduce congestion and to increase highway safety. We are conducting a series of studies using the Iowa Driving Simulator. The data provided by you, and others, will aid us in making accurate and responsible recommendations about how to design and operate new highway systems. This is a test of future highway systems, not a test of you or your driving skills. We will maintain your privacy—your data will never be presented with your name attached.

[B. Driving on the Freeway]

[Camera position #2]

Passage B.1: Today we will ask you to drive for an extended time in a three-lane freeway. At the start of the drive, your car will be parked on a freeway entrance ramp. You will drive from the entrance ramp into the right lane.

[Camera position #2]

Passage B.2: While you are in the freeway, you will drive among vehicles that will behave in the way that traffic usually behaves on a freeway. The speed limit is 55 miles per hour.