

BRDrivingSim, BRDrivingSimEX, and BRDrivingSimEXM

Driving Simulators for Training and Testing

The BRDrivingSim is a 3-D driving simulator software program combined steering wheel pedal set designed as a desktop, driver testing and training tool. The PC driving simulator software consists of 28 driving scenarios and 2 driving tests which expose the driver to a wide variety of driving situations in urban and rural environments. These include traffic following, passing large trucks, confronting road hazards, diagonal and parallel parking, left turn into oncoming traffic, emergency braking, driving in heavy urban traffic, night driving, freeway entry and exit, driving in fog, driving on ice, construction hazards and others. The BRDrivingSim series driving simulators are used in a variety of school, hospital, university, and research settings. The BRDrivingSimEX model has recently been purchased by the Ohio State University's CARTEENS program which provides each of 38 Ohio counties with its own driving simulator in support of teen driver education and evaluation with emphasis on driver distraction training.

BRDrivingSim models simulate a passenger car with carcab, automatic transmission, rear view mirror, instruments and turn signals. Engine, turn signal, horn and other sound effects are also provided. Instrument panel includes tachometer and speedometer as well as turn signals and gear setting. Lesson messages and performance measurements are also displayed. A help page provides information on controls and other elements of the software and a continually updated user page provides an online user manual.



Driving Scenarios

The 28 driving scenarios and two driving tests are designed to expose drivers to the full range of driving Activities. Scenarios can be run in any order through a selection window.

1. Getting Started: Urban roadways and steering pad to familiarize driver with vehicle performance, controls and simulator features.
2. Following: A task requiring precise vehicle following on an open highway a varying speeds. Feedback for following to close or lagging too far behind are provided
3. Passing, No Oncoming Traffic: Passing of slow passenger car vehicles on the open highway with no opposing traffic. Practice safe entrance and exit from passing lane.
4. Passing, Oncoming Traffic: Passing of slow passenger car vehicles on the open highway with opposing traffic. Practice judging closure rate of oncoming vehicles and time required to safely pass.
5. Passing Large Trucks: Passing large, semi-trucks on a two-lane open highway with opposing traffic. Practice passing large vehicles which restrict view of oncoming traffic and require greater time to pass than smaller vehicles.
6. Left Turn, Light Traffic: Practice judging distance of oncoming traffic when turning left on a two-way

rural road.

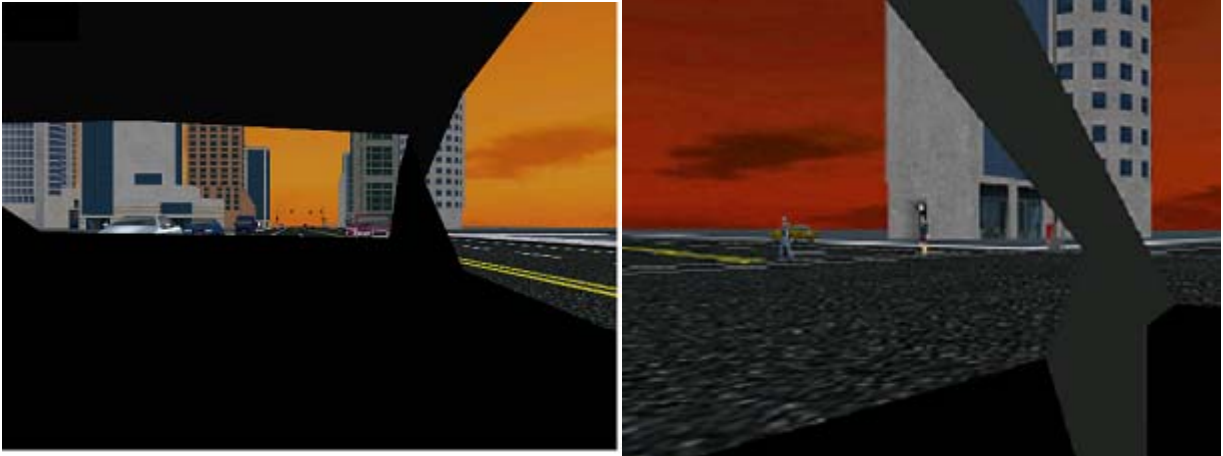
7. Left Turn, Heavy Traffic: Practice judging distance of oncoming traffic when turning left on a two-way rural road when heavy, high speed traffic is present. Driver must judge how quickly a turn can be made in front of traffic while moving or from a dead stop.
8. Parking, Diagonal: Practice parking diagonally in a parking lot. Driver must watch for traffic while backing out of the parking space.
9. Parking, Parallel: Practice parking parallel in a parking lot. No traffic.
10. Construction Hazard: Avoid pedestrians and vehicles around an urban roadway construction hazard.
11. Slow Vehicle: Deal with a very slow vehicle in driver lane of an urban street. Practice passing vehicle while avoiding oncoming traffic from the rear.
12. Road Hazards: Avoid hazards appearing from road side of an urban street. Practice emergency braking.
13. Left Turn Urban Mid Block: A potentially hazardous crossing of multiple lanes of urban traffic into a parking lot that requires finding a safe gap between two lanes of oncoming traffic of varying traffic density.
14. Left Urban Intersection Turn: A complex left turn at a multi-lane urban intersection with oncoming traffic and unpredictable crossing behavior of several pedestrians.
15. Traffic Jam: Multi-lane urban traffic jam through an intersection. Scenarios requires driver to avoid being trapped in intersection by stopped traffic and not crossing into intersection until adequate space is available on the other side.
16. Right Urban Intersection Turn: Turning right into a multi-lane street where an apparent accident has halted traffic in the right lane. Maneuvering through traffic requires awareness of possible vehicle and pedestrian hazards leaving the accident site.
17. Parking in Urban Traffic: Practice quick turn into and out of parking spaces on a busy urban street. Practice estimating parking space sizes,
18. Parallel Parking in Traffic: Practice parallel parking in urban traffic. Avoid traffic from rear while parking parallel.
19. Left Turn, Fog: Practice left turn into heavy, rural traffic on two-lane road with fog obscuring oncoming traffic.
20. Passing, Oncoming Traffic, Fog: Practice passing slow traffic with oncoming traffic in fog.
21. Freeway Entry: Practice entering freeway with light traffic. Practice estimating traffic speed and merging with traffic, and lane change from slow to fast lane.
22. Freeway Entry, Heavy Traffic: Practice entering freeway and changing lanes with heavy traffic.
23. Freeway Exit: Practice planning and exiting freeway from slow lane in traffic.
24. Freeway Exit, Fast Lane: Practice planning and exiting multi-lane freeway from fast lane in traffic.
25. Freeway Entry, Fog: Practicing entering freeway with heavy traffic under foggy conditions.
26. Freeway Exit, Fog: Practicing exiting freeway with heavy traffic under foggy conditions.
27. Night Driving, Rural: Practice driving in night conditions using low and high beams.
28. Ice and Snow: Practice driving on "black ice", loss of braking and steering in undetectable road ice.
29. Driving Test, Rural: A test of multiple problems and hazards in rural driving.
30. Driving Test, Urban: A test of multiple problems and hazards in urban driving.

Performance Measurements

Collisions, speed exceedances, failure to use turn signals, following too close and brake reaction time are recorded continuously and displayed on the instrument panel (see above). These measures are also stored on the PC hard disk with the driver name and I.D. and time/date stamp for each scenario. The stored data can be displayed and printed by any word processing program and analyzed with a spreadsheet or similar program.

360 degree Viewing

Since BRDrivingSim is designed for use on a single monitor, a View Hat control on the steering wheel has been provided to allow for 360 degree viewing. This allows the driver to quickly view roadway areas to the side and in the blind spot areas to check for traffic.



Steering Wheel and Pedal Set

The BRDrivingSim comes equipped with a steering wheel and pedal set. The set provides force feedback to the steering wheel as well as a view control, drive/reverse button, horn, and turn signals. Steering wheel brake and accelerator paddles are provided for those who cannot reach the pedals. BRDrivingSim comes with the Thrustmaster™ RG PRO Clutch Edition wheel/pedal set. The BRDrivingSimEX model comes with the Logitech™ G27 wheel/pedal set (see below). The latter is recommended for driving schools where higher realism in driver steering and pedal controls is desired.



BRDrivingSim Wheel/Pedal Set BRDrivingSimEX Wheel/Pedal Set

Models

The BRDrivingSim consists of driving simulator software simulating a passenger car with automatic transmission and Thrustmaster™ RG PRO Clutch Edition wheel/pedal set. The BRDrivingSimEX uses the same basic software as the BRDrivingSim, but has been modified to use the Logitech™ G27 wheel/pedal. The additional capabilities afforded by the Logitech™ G27 wheel/pedal set allows the BRDrivingSimEX to be utilized without need of a keyboard. The BRDrivingSimEXM model uses the same software and wheel/pedal set as the BRDrivingSimEX, but has added the option of a manual (6-speed) transmission along with the automatic and the option of driving a commercial delivery truck comparable to commercial courier trucks in the 16000 lb weight class. Choice among a combination of four unique transmission and vehicle types is provided.

Minimum System Requirements

Windows™ XP™ (SP 2 or later), VISTA™, or Windows 7™

1.7 GHz Processor

256 MB Video Card

1 GB RAM

1024 x 768 Resolution Monitor

PC Audio System

CD-ROM Player

Product ships to U.S. and Canada only.

Purchase the BRDrivingSim, BRDrivingSimEX, and BRDrivingSimEXM safely online with PayPal™ at <http://www.beta-research.com/brdrivingsim.html>