

A Partial Listing of Risk Factors

Here are 223 risk factors — a partial listing of all risk factors we may be subjected to. A risk factor is something that can, or does, contribute to a crash. There are always multiple factors that contribute to a crash. *I have investigated thousands of collisions; most involved at least nine risk factors!*

Activity from Page 2	Factors = Different Ways to Crash
<p>Compare your numbers with the listed risk factors. Cross out all the risk factors that you guarantee will never be present while you're driving. Then, look at the chart to the right to see which level of risk you would be in. Look how the crash potential reduces with each risk factor that is eliminated.</p>	<p>1 = 223 2 = 24,753 3 = 1,823,471 4 = 100,290,905 5 = 4,392,741,639 6 = 159,602,946,217 9 = 3,191,260,909,915 12 = 23,362,408,798,288,057,173</p>
<p>More risk factors = more crashes!</p>	

Vehicle Generated Risk Factors

A. Handling Characteristics

1. improper loading of vehicle
2. mix of radial and bias-ply tires
3. occupants in the back seat
4. over-sized tires
5. seat not adjusted properly
6. short wheelbase

B. Malfunctions

7. air conditioner broken
8. brake fade
9. broken fan belt
10. broken motor mount
11. broken power steering belt
12. broken radiator hose
13. broken steering system
14. broken suspension system
15. broken windshield
16. defroster not working
17. engine stalls
18. fire in engine compartment
19. fire under dashboard
20. flat tire
21. fuel leak
22. headlight inoperative
23. stuck accelerator
24. stuck cruise control
25. tire blowout
26. water pump leak

C. Structural Design

27. blind spot in mirrors
28. long wheel base
29. no air bag
30. no collapsible steering column

31. no safety belts
32. body has little crash protection
33. short wheelbase
34. motorcycle

D. Performance

35. cold engine
36. doors not locked
37. engine idling fast
38. no headlights on
39. speed excessive
40. windows fogged

E. Preventative Maintenance

41. bald tire
42. brakes improperly adjusted
43. dirty windshield
44. hole in exhaust system
45. hole in radiator
46. leaking muffler
47. loose seat anchor
48. low power steering fluid
49. low tire pressure
50. no catalytic converter shield
51. no washer fluid
52. pitted windshield
53. play in steering wheel
54. signal lights inoperative
55. smoke film on windshield
56. worn brake pedal cover
57. worn shocks
58. worn steering system
59. worn tires
60. worn wiper blades

F. Other

61. body rot
62. rusted frame

Driver/ Pedestrian Generated Risk Factors

Driver/ Pedestrian Risk Factors

A. Alcohol and other Drugs

- 63. attended keg party
- 64. consumed alcoholic drinks
- 65. designer drugs
- 66. drank booze
- 67. drinking beer
- 68. drunk
- 69. ecstasy
- 70. happy hour
- 71. high on drugs
- 72. intoxicated
- 73. methamphetamine
- 74. on medication

B. Distractions - Mental

- 75. talking on cell phone
- 76. talking to passengers
- 77. texting
- 78. thinking about things at home
- 79. thinking about a relative's death
- 80. thinking about event en route to
- 81. thinking about money problems
- 82. thinking about loved one's illness
- 83. thinking about the children
- 84. thinking about vacation plans
- 85. thinking of personal problems
- 86. thinking of tonight's social event

C. Distractions - Inside Vehicle

- 87. adjusting radio
- 88. answering cell phone call
- 89. applying make-up
- 90. changing CD/MP3 player
- 91. combing hair
- 92. coughing, sneezing
- 93. disciplining children
- 94. drinking beer
- 95. drinking coffee
- 96. dropped a lit cigarette
- 97. frolicking with passengers
- 98. lighting a cigarette
- 99. listening to radio
- 100. opening a window
- 101. putting the defroster on
- 102. putting wipers on
- 103. reading a book
- 104. reading a map
- 105. spilled hot coffee onto lap
- 106. swatting a bee

D. Distractions - Outside Vehicle

- 107. in unfamiliar area
- 108. looking at the scenery
- 109. looking for address
- 110. not familiar with surroundings
- 111. rubbernecking

E. Emotions

- 112. angry
- 113. arguing
- 114. competitive behavior
- 115. happy
- 116. late for an appointment
- 117. retaliating
- 118. sad
- 119. swearing at other driver
- 120. teaching others a "lesson"
- 121. worried

F. Fitness - Other

- 122. blurred vision
- 123. dozing off
- 124. drowsiness
- 125. eye glasses fogged
- 126. ill
- 127. on medication
- 128. sleep deprivation
- 129. tired

G. Perception

- 130. failed to see elements of scene
- 131. improper intersection search
- 132. no communication
- 133. not looking to target area
- 134. predicted improperly
- 135. surprised by other's action

H. Space Management

- 136. improper lane position
- 137. improper passing
- 138. swerved over center line
- 139. tailgating

I. Vehicle Control

- 140. took unplanned action
- 141. backing out of driveway
- 142. didn't use parking brake
- 143. excessive speed
- 144. foot slipped off brake
- 145. no safety belts used
- 146. slammed brakes on
- 147. speeding 10 mph over the limit
- 148. unattended engine left running
- 149. wearing bulky mittens
- 150. wearing large hooded coat

Roadway-Environment

Risk Factors

A. Design Features

151. crossroad intersection
152. crowned road
153. downgrade
154. elderly pedestrian crossing
155. gas station entrance
156. hill crest/LOS blockage
157. intersection on left
158. intersection on right
159. left curve in road
160. loose gravel on road
161. low bridge
162. railroad crossing
163. narrow bridge
164. narrow lane
165. narrowing of lanes
166. no highway lighting
167. no painted lane lines
168. non-divided highway
169. right curve in road
170. school zone
171. tee intersection
172. trees on side of road
173. weave pattern at exit/entrance
174. drop-off of pavement edge
175. no gates at railroad crossing

B. Environmental Conditions

176. bright sun
177. fog
178. ice on road
179. new moon
180. night time
181. raining
182. snowing
183. early in morning
184. mid-afternoon

C. LOS Blockage

185. buildings on side of road
186. disabled school bus
187. large truck stopped
188. parked ice cream vendor
189. parked truck
190. school bus stopped for children
191. vegetation growth

D. Roadway Conditions

192. construction work zone
193. dark shadows
194. debris on road
195. disabled school bus

E. Traffic Controls

196. inoperative traffic light
197. stop sign at intersection
198. traffic light changing to red

F. Traffic Patterns

199. car backing out of parking space
200. commuter traffic
201. large truck stopped for left turn
202. stopped traffic
203. traffic slow down
204. oncoming traffic

G. Other motorists

205. emergency vehicle approaching
206. vehicle drifts over center line
207. vehicle enters from left
208. vehicle enters from right
209. vehicle going through red light
210. vehicle in left-rear blind spot
211. vehicle in right-rear blind spot
212. vehicle passing on left
213. vehicle passing on right

H. Pedestrians, Bicyclists, Animals

214. bicyclist riding against traffic
215. child running into roadway
216. deer jumps into travel path
217. elderly person crossing street
218. hitchhiker
219. intoxicated pedestrian in road
220. jogger running with traffic
221. rollerblader in travel lane
222. skateboarder falls on side of road
223. squirrel running into street

10 Habits
Compensate for the
Risk Factors You
Cannot Eliminate!

Keep the **MONSTER** Caged!

Winter Driving Conditions

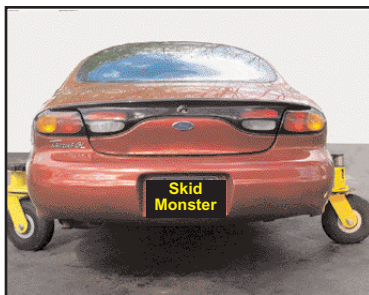
In winter conditions, temperature changes result in melting ice that freezes at random locations. This can catch a driver by surprise. The habit of beginning a braking action early—especially before steering when an icy condition is encountered—reduces the demands placed upon tire grip. When a hard braking and steering action occur at the same time during slippery conditions a skid is more likely to happen. Having good habits is especially important during winter conditions because there are many things working against you.

In winter driving, visibility is reduced. There are fogged-up and snow or ice covered windows that drivers must clear. There are also snow banks at intersections and driveways that create LOS blockages, resulting in drivers being surprised into making harsh braking or steering actions. That can result in an overloaded demand for traction. With the ten habits, problems of winter driving can be minimized by already having a set of risk-reduction habits working for you.

The Ten Habits Work for You to Meet Winter Driving Demands

- You will have vehicle readiness by clearing all snow and ice (LOS blockages) off your car before driving.
- You will plan for turns and curves early by applying the brake at least five seconds before beginning to turn the steering wheel.
- Once the brake is applied, you will keep your foot on the brake with partial pressure until at your transition peg; then accelerate.
- When you get within the 4-second danger zone of an intersection you will search the left, front and right zones to be sure space is open. When it's not, a reduction in speed will take place.
- When entering a traffic flow, a search for a hole or gap to your target area will give you extra time that is needed to get moving when there is reduced traction.
- When stopping to the rear of a car at traffic lights and other situations, you will stop to see its rear tires, which will give you sliding room.
- When moving with a car in front, you'll keep at least 4 seconds of space, which will prevent you from crashing into skidding cars ahead of you.
- Effective mirror usage will prevent skidding while lane changing.
- If a skid does occur, your eyes, mind, and hands will have as habit the behavior of steering toward your target area, which is the single most important skill needed to regain car control. Your foot stays off the pedals.

SKID Monster®



There is no better way to learn the power of the Ten Zone Control Habits than to drive the SkidMonster. It is a specially equipped car that recreates, in a safe training environment, the effects of lost of traction. It trains drivers in use of vision to control the vehicle.

For training go to:
www.SkidMonster.com

email: info@NIDB.org



About The Author

Professor Frederik R. Mottola, a traffic safety educator, scientist, inventor, and author, is recognized as a national leader in driver behavior and teacher training.

He has developed crash-reducing programs for corporations, municipalities, police, military, emergency vehicle operators, and traffic safety educators, on local, national and international levels.

He has authored several books, videos series, CD-ROM programs, and online programs which have presented methods for drivers to develop perceptual awareness.

He has been featured in national publications and has received prestigious awards in recognition of the materials he has developed to help drivers reduce and manage risk.

About This Book

What most drivers don't realize is that when a car goes out of control, it's not because a major thing has changed. It's usually a collection of little things: going a couple of miles faster, a slight downgrade, a patch of sand, someone pulling out in front of you—and when you put all these risk factors together, the car becomes a *monster*. The driver doesn't stand a chance!

This book explains and illustrates the dynamics of the Zone Control System. Drivers are able to practice into habit how to Find, Solve, and Control the Danger Zone, which is where crashes take place. These good habits put the driver in control and keep the *monster* from breaking out of its cage.



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