



National Transportation Safety Board
Washington, D.C. 20594

Highway Accident Brief

Accident No.: HWY-03-MH-018
Accident Type: Vehicle loss of control, followed by sideswipe collisions with tractor-semitrailer
Location: Amsterdam Road (State Route 347), west of Belgrade, Montana
Date and Time: January 23, 2003, 3:20 p.m.

Vehicle 1: 1997 Oldsmobile Achieva
Owner 1: Manhattan Christian School
Operator 1: Driver education student
Operation 1: Driver education class
Injuries 1: 4 fatal

Vehicle 2: 1991 International truck tractor with 1998 Utility semitrailer
Owner 2: Food Services of America
Operator 2: Driver with a commercial driver's license
Operation 2: Local delivery route
Injuries 2: None

Accident Description

About 3:20 p.m. on January 23, 2003, a 1997 Oldsmobile Achieva driver education vehicle was westbound on Amsterdam Road near Belgrade, Montana (see figure 1). A driver education student, age 14 years, 8 months, was driving; an instructor was in the right-front passenger seat, and two other students were seated in the rear seat. About the same time, a 1991 International Truck and Engine Corporation truck tractor with a 1998 Utility Trailer Manufacturing Company semitrailer was eastbound on Amsterdam Road. The weather was clear. Snow earlier in the day had resulted in an accumulation of slush on the roadway in places shaded by patches of trees (see figure 2). The truck driver estimated that his vehicle and the Oldsmobile were traveling 35 to 45 mph. He stated that he saw the oncoming automobile from a distance of more than 100 yards and noticed no indication of a problem. Just after the tractor-semitrailer crossed a short bridge over a ditch, the truck driver said the Oldsmobile began to fishtail and veered into the eastbound lane in front of the tractor-semitrailer. The tractor-semitrailer driver said that he tried to avoid the collision by steering left, but he struck the Oldsmobile on the right side (see figure 3), causing the Oldsmobile to rotate clockwise, strike the right side of the tractor, and then slide down an embankment on the south side of the roadway. The tractor came to rest facing north, blocking both lanes of traffic (see figure 4).

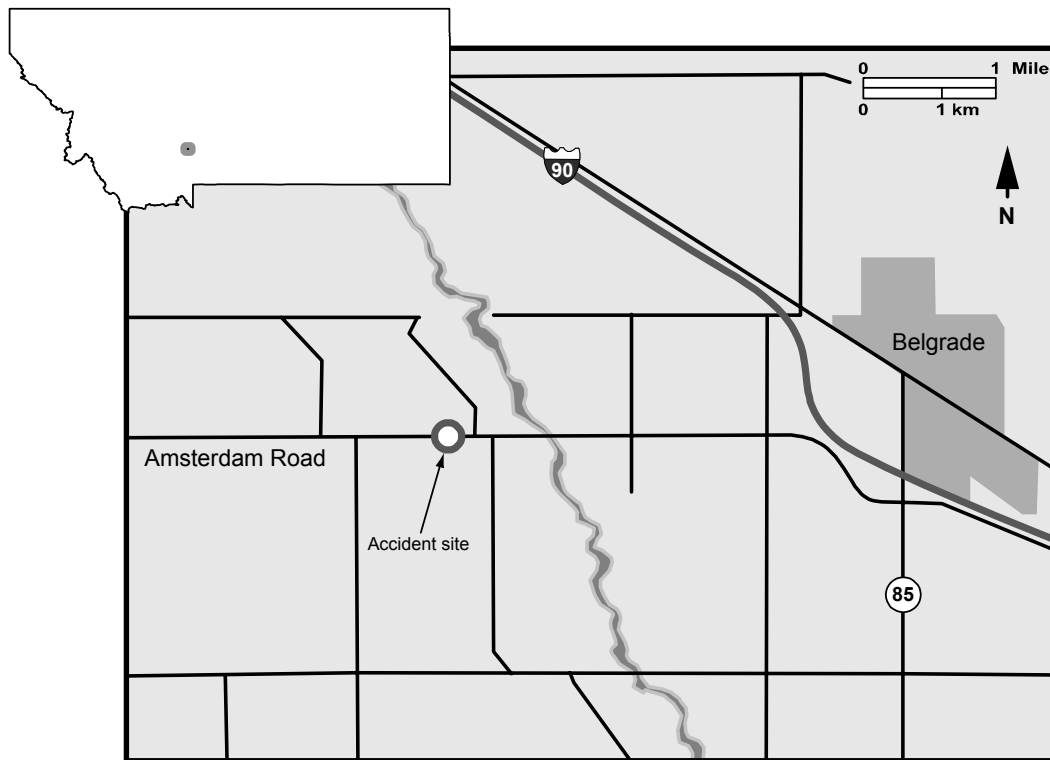


Figure 1. Accident location.



Figure 2. Roadway conditions at the accident scene. (Source: Montana Highway Patrol)



Figure 3. Vehicles aligned postcollision during accident reconstruction.



Figure 4. Vehicles at final rest. (Source: Montana Highway Patrol)

Inspections of the Oldsmobile and the tractor semitrailer did not reveal any anomalies in the braking or steering systems.

Amsterdam Road

In the vicinity of the accident site, Amsterdam Road is a straight, level, undivided roadway consisting of two 11-foot-wide lanes, variable-width shoulders, and grassy ditches sloping away from the shoulders. The road was intermittently bordered on the south by tall trees that cast shadows on the roadway. The posted speed limit was 70 mph in the daytime and 65 mph at night. Approximately 60 feet west of the accident site was a short, 22-foot-wide bridge over a ditch. The sides of the bridge consisted of W-beam barriers marked by 12-inch object markers on each end; each marker extended about 6 inches into the roadway (see figure 2).

Weather data from Bozeman, Montana, about 10 miles southeast of Belgrade, indicated temperatures on the morning of the accident were between 14° F and 25° F. Snow and mixed freezing precipitation had ended by 10:30 a.m. and were followed by mist or fog until about 11:30 a.m. At 2:56 p.m., the temperature had risen to 35.6° F with light winds and broken cloud cover.

Time sheets for the Gallatin County Road and Bridge Department, which is responsible for snow removal, included several entries on January 23 for Amsterdam Road, indicating “Scrape Ice” and “Plow and Sand.” The time of day for these entries was not noted. Postaccident photographs show an accumulation of ice, snow, and slush on the pavement edges and two clear tire ruts in the slush in each lane, slightly offset toward the center of the roadway (see figure 2). Some standing water had accumulated in puddles along the south side of the roadway.

Less than an hour before this accident, another automobile had been westbound on Amsterdam Road. The driver of that vehicle told investigators that she was traveling about 55 mph without difficulty, following the tracks in the slush. Suddenly, without warning, according to the driver, her vehicle began to fishtail. She could not regain control, crossed the eastbound lane, and came to rest in a ditch on the south side of the road, about 200 feet east of where the accident later occurred. The driver stated that, in hindsight, she believed a slower speed would have been more prudent, but she had not had any problems before the fishtail.

Drivers

The Oldsmobile driver enrolled in driver education at Manhattan Christian School. He possessed a Traffic Education Permit, issued by the driver education instructor and valid through March 15, 2003. Montana Department of Justice Motor Vehicle Division records also indicate that a Traffic Education Learner License was issued to the student and recorded on January 14, 2003, through the Cooperative Driver Testing Program (CDTP). This license allowed him to operate a motor vehicle when accompanied by a State-approved driving instructor or a licensed parent or guardian. The driver was in his third of 10 behind-the-wheel driving sessions. Previous sessions had

focused on developing general familiarity with the vehicle and basic driving maneuvers on local arterial and secondary roads, as well as practice in merging, changing lanes, maintaining appropriate speed, and exiting from the interstate. The driver's mother said he had limited experience driving the family's automobile in the company of his parents. She said he had driven the previous weekend on snow- and ice-covered roads without incident.

The 30-year-old truck driver possessed a valid Montana commercial driver's license and medical certificate and had been driving commercial vehicles since 1999. His job included regularly scheduled 4- to 12-hour days and entailed driving a truck to make deliveries and sometimes unloading the truck. He received safety training quarterly from his employer.

Both drivers tested negative for alcohol and illicit drugs.

Montana Driver Education

In Montana, a Department of Justice or CDTP-approved traffic education instructor may issue a Traffic Education Learner License to anyone age 14 years, 6 months, or older who has passed a knowledge test and vision examination. The license entitles the holder to operate a vehicle when an approved instructor or a licensed parent or guardian is in the vehicle. A Traffic Education Permit (often referred to as a Restricted Instruction Permit) may be issued to anyone age 14 years, 6 months, or older who is enrolled in an approved traffic education course. The permit entitles the holder to operate a vehicle only when an approved instructor is in the vehicle. At age 15, a person may obtain a full license if he or she has passed a traffic education course; otherwise, the individual must wait until age 16. To obtain a full license, the applicant must pass a knowledge and road test, although this requirement may be waived if the applicant has completed a certified CDTP. A CDTP is "any state-approved high school traffic education course offered by or in cooperation with a school district that employs an approved instructor who has current endorsement from the superintendent of public instruction as a teacher of traffic education."¹

The Manhattan Christian School's traffic education course had been approved by the Montana Office of Public Instruction and was taught by a certified CDTP instructor. The course was offered twice a year, once in the summer and once in the winter. The winter course, in which the accident driver was enrolled, began January 7 and included 42 hours of classroom instruction, which took place before school, and 18 hours of behind-the-wheel instruction (6 hours of driving and 12 hours of observation), which took place after school.

Montana's *Traffic Education Curriculum*² contains one lesson on driving in adverse weather conditions; upon completion of the lesson, students should be able to describe the problems associated with adverse weather, including factors that limit visibility and reduce traction, and to execute strategies to compensate for those factors. The lesson does not have a specific behind-the-wheel objective, but the curriculum

¹ Montana Code Annotated 61-5-110(3).

² Montana Office of Public Instruction, *Traffic Education Curriculum* (Helena, Montana: 1995).

suggests that if adverse weather is encountered, the student should review appropriate procedures with the instructor. The lesson discusses loss of traction and hydroplaning, as well as the appropriate response to both situations. The *Traffic Education Standards/Requirements/Procedures for High School Driver Education Programs*,³ which is Montana's policy manual for driving instructors, states that, for scheduling considerations, "inclement weather driving is encouraged as opposed to cutting back or canceling driving until the arrival of fairer weather."

Survival Factors

The Oldsmobile rotated counterclockwise and slid sideways across the centerline, where it was struck by the front of the tractor-semitrailer, and then rotated clockwise and impacted the right-front side of the tractor. The Oldsmobile sustained severe damage to its right side and the tractor-semitrailer sustained minor front-end damage. Intrusion into the Oldsmobile's passenger compartment was 24 inches extending along the right side. All of the passengers were wearing their lap/shoulder belts, and the driver and front passenger airbag deployed. Full autopsies were not conducted, but the coroner determined that all four Oldsmobile passengers sustained fatal injuries from massive blunt force trauma and flail chest⁴ wounds.

Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was the Oldsmobile driver's loss of control due to the slushy roadway conditions. Contributing to the loss of control was the driver's inexperience driving in degraded winter weather.

Adopted: June 20, 2005

³ Montana Office of Public Instruction, *Traffic Education Standards/Requirements/Procedures for High School Driver Education Programs* (Helena, Montana: 2000).

⁴ Flail chest, caused by fractures of three or more ribs, is an indicator of significant force to the chest wall and rib cage, resulting in the loss of mechanical integrity to the chest and subsequent inability to breathe.