



**NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF HIGHWAY SAFETY
WASHINGTON, D.C.**

**HUMAN PERFORMANCE FACTORS GROUP CHAIRMAN'S
FACTUAL REPORT**

A. CRASH INFORMATION

Location: 17000 Block 480th St, Oakland, Pottawattamie County, Iowa
Vehicle 1: 2004 IC, Model 3S530, 65 passenger school bus
Operator 1: Riverside Community School District
Date: December 12, 2017
Time: Approximately 06:52 a.m. CST
NTSB #: **HWY18MH003**

B. HUMAN PERFORMANCE FACTORS GROUP

Dennis Collins, Senior Human Performance Factors Investigator, Group Chairman
NTSB Office of Highway Safety
490 L'Enfant Plaza East, S.W., Washington, DC 20594

C. CRASH SUMMARY

For a summary of the crash, refer to the *Crash Summary Report* (or *Factual Report of the Investigation*, depending on investigation type) in the docket for this investigation.

D. DETAILS OF THE HUMAN PERFORMANCE FACTORS INVESTIGATION

The Human Performance factual investigation focused on the behavioral, medical, operational, and environmental factors associated with the driver of the 2004 International Corporation (IC) Model 3S530, 65 passenger school bus [hereafter the school bus].

1. The Driver of the School Bus

The driver of the school bus at the time of the crash was a 74-year-old male. The driver was killed in the post-crash fire.

1.1. Driver Activities Prior to the Crash

Using route information from the driver's timecard,¹ the route schedule,² traffic camera video,³ city council minutes,⁴ and an interview with the driver's wife,⁵ investigators generated the following table of the driver's activities in the days prior to the crash. All times in the table are in Central Standard Time (CST).

Table 1. Driver Activities Prior to the Crash

Saturday, December 9, 2017		
<u>Time</u>	<u>Description</u>	<u>Source</u>
8-9 a.m.	Driver awakes	Interview
10:00 a.m.	Driver attends wrestling tournament at local high school	Interview
3:00 p.m.	Driver leaves tournament and returns home	Interview
10-11 p.m.	Driver goes to bed	Interview
Sunday, December 10, 2017		
<u>Time</u>	<u>Description</u>	<u>Source</u>
8-9 a.m.	Driver awakes	Interview
UNKNOWN	Driver attends church service	Interview
11:30 a.m.	Driver and grandson leave for Lincoln, NE	Interview
3-4 p.m.	Driver leaves Lincoln to return to Carson, IA	Interview
9-10 p.m.	Driver goes to bed	Interview
Monday, December 11, 2017		
<u>Time</u>	<u>Description</u>	<u>Source</u>
4:30-5 a.m.	Driver awakes	Interview
~6:15 a.m.	Driver departs house for bus barn	Interview
9:00 a.m.	Driver returns home after morning run	Interview
10:00 a.m.	Driver attends bible study with his wife	Interview
11:00 a.m.	Bible study ends; driver returns home	Interview
2:45 p.m.	Driver departs home for bus barn	Interview
~5:00 p.m.	Driver returns home after evening run	Interview
7:30 p.m.	Driver attends City Council meeting	Interview
8:04 p.m.	City Council meeting ends	Minutes
~8:30 p.m.	Driver returns home	Interview
~9:00 p.m.	Driver goes to bed	Interview

¹ Available as an attachment to the *Motor Carrier Group Chairman's Factual Report*.

² Human Performance Attachment: Riverside School District Bus Schedule

³ Video was viewed by NTSB investigators and the time noted; it is not available in the docket.

⁴ Human Performance Attachment: Carson, IA City Council minutes, December 11, 2017.

⁵ Human Performance Attachment: Narratives and Transcripts of Investigative Interviews.

Tuesday, December 12, 2017

<i>Time</i>	<i>Description</i>	<i>Source</i>
4:30-5 a.m.	Driver awakes	Interview
~6:15 a.m.	Driver departs house for bus barn	Interview
6:30 a.m.	Driver departs bus barn to begin route	Timecard
6:36 a.m.	Bus captured on traffic camera	Traffic camera
6:50 a.m.	Scheduled time of first pickup	Bus schedule
6:50 a.m.	Bus arrives at first pickup	Interview
6:52 a.m.	ESTIMATED TIME OF CRASH	

1.2. General Health

When interviewed by NTSB investigators following the crash, the driver's wife stated he had been experiencing back pain. He had surgery on his back in January of 2017 for what his wife described as degenerative discs. The surgery was successful; however, approximately 3 or 4 months ago, he began having issues again. The driver was told the disc above the surgery site had slipped and was pinched; he was scheduled for another surgery two days after the crash.

According to his wife, due to his back pain, the driver had some trouble getting comfortable in bed. When asked, she stated he experienced discomfort when standing and could lose his balance when standing and walking, but that he was comfortable when sitting. She stated the driver never mentioned numbness. She described him moving more slowly, but also stated his pain did not cause him to miss any events and, in her opinion, would not have prevented him from evacuating the school bus in the event of any emergency.

When asked about the driver's health on the day of the crash, his wife stated he had a "little cough" that they thought was due to allergies. She stated he had no other health concerns. She provided investigators with a list of the driver's prescription medications (see below).

1.3. Vision and Hearing

According to the driver's wife, his vision was good; he had successful cataract surgery last year. She stated his hearing was good, with some small hearing loss, expressing itself as having the television louder. She stated this hearing loss was not noticeable.

1.4. Medical Providers

During her interview, the driver's wife identified the driver's primary care physician and his back surgeon. A canvas of local pharmacies identified additional medical providers. Records⁶ were obtained from those providers and reviewed by an NTSB Medical Officer for conditions and medications relevant to this crash. For a complete discussion of the driver's medical condition, please see the *Medical Officer's Factual Report*, available in the docket for this investigation.

Per the *Medical Officer's Factual Report*, the driver's records indicated he had a history of high blood pressure, high cholesterol, depression, diabetes, and gastric reflux. These conditions

⁶ Medical records themselves are not placed in the investigation docket due to the sensitive and personal nature of the information contained therein.

were controlled with diet and medication. He also had severe chronic progressive degenerative disc disease resulting in mild weakness and debilitating pain that resulted in his inability to walk without the use of a cane or walker.

1.5. Commercial Motor Vehicle Driver Medical Fitness

Commercial drivers in the United States, including school bus drivers, are required to be medically certified to operate a commercial vehicle. Some states, including Iowa, require exams meeting the requirements specified in the *Federal Motor Carrier Safety Regulations* (FMCSRs).⁷ These examinations result in one of four outcomes with respect to medical qualification:

- The driver is found to meet the standards in 49 *Code of Federal Regulations* (CFR) §391.41 and is given a 2-year certificate;⁸
- The driver is found to meet the standards, but requires periodic evaluation for one or more conditions and is qualified for 3 months, 6 months, or 1 year;
- The driver is temporarily disqualified due to a condition or medication; or;
- The driver is found not to meet the standards.

1.5.1. Older CDL Medical Exams

Investigators located CDL exams for the driver performed in 2002, 2003, 2005, 2009, 2011, 2013, 2015, and 2016.⁹ In the exams from 2002 through 2013, the driver was medically certified for two years.¹⁰ In the 2015, the driver was certified for one year due to hypertension and diabetes. In 2016, the driver was certified for one year due to hypertension.

1.5.2. Current CDL Medical Exam

The driver's most recent CDL medical exam was performed in March of 2017. In that exam, the driver indicated a history of surgery for "back lower" and "eyes cataract". He specifically did not mention a history of hypertension and diabetes, both of which he had reported in previous exams. The driver indicated he was not taking any medications. In the health history section, the driver indicated he had a history of eye problems and high cholesterol. The driver's blood pressure, pulse rate, urinalysis, vision, and hearing were all within normal ranges. A physical exam of the driver noted no abnormalities in any body system.

The school bus driver was found to meet the standards in 49 CFR §391.41 and was issued a two-year certificate. The performing examiner was a Doctor of Chiropractic (DC) and is listed

⁷ 49 Code of Federal Regulations §391.41.

⁸ For more information on the examination process, please see 49 CFR §391.43 and 49 CFR §391.45.

⁹ Investigators were unable to locate an exam from 2007.

¹⁰ It is unknown why the driver obtained a medical exam in 2003; his certification from 2002 would not have expired until 2004.

on the national registry of certified examiners.¹¹ The examiner’s national certification will expire in March of 2024.

1.6. Iowa Medical Requirements for School Bus Drivers

The Iowa Administrative Code (IAC) specifies the physical fitness requirements for school bus drivers in the state of Iowa. It reads as follows:¹²

“Except for insulin-dependent diabetics, an applicant for a school bus driver’s authorization must undergo a biennial physical examination by a certified medical examiner who is listed on the National Registry of Certified Medical Examiners. The applicant must submit annually to the applicant’s employer the signed medical examiner’s certificate (pursuant to Federal Motor Carrier Safety Administration regulations 49 CFR Sections 391.41 to 391.49), indicating, among other requirements, sufficient physical capacity to operate the bus effectively and to render assistance to the passengers in case of illness or injury, and freedom from any communicable disease. At the discretion of the chief administrator or designee of the employer or prospective employer, the chief administrator or designee shall evaluate the applicant’s ability in operating a school bus, including all safety equipment, in providing assistance to passengers in evacuation of the school bus, and in performing other duties required of a school bus driver.”

1.7. Riverside Community School District Physical Fitness Policy

Riverside Community School District Board policy 403.1 covers the physical examination of district school bus drivers.¹³ Per the policy, drivers are required to present evidence of good health at hire and every other year in the form of a physical exam report. The policy also states if, in the judgement of the administration, the driver’s physical or mental health is in doubt, the employee must submit to additional examinations.

In 2009 and 2010, the school district required drivers to complete a physical performance test (PPT) consisting of the following items:

- Climb and descend the bus steps three times in 30 seconds;
- Alternately activate the brake and throttle 10 times in 10 seconds;
- Manually open and close the bus door three consecutive times;
- While the vehicle is in motion, operate two hand controls on both sides of the steering wheel while maintaining control of the vehicle, within 8 seconds of the request; and
- Starting in the driver’s seat and wearing the seatbelt, exit the bus from the rear emergency exit within 20 seconds.

¹¹ The Federal Motor Carrier Safety Administration (FMCSA) requires healthcare professionals performing commercial driver medical examinations to be certified and registered. To be certified, a healthcare professional must be licensed by their state, must complete standardized training, and must pass a certification test. See:

¹² 281 IAC 43.15, available at: <https://www.legis.iowa.gov/docs/iac/rule/11-26-2014.281.43.15.pdf>, accessed on August 14, 2018.

¹³ Human Performance Attachment: Riverside Community School District Board Policy 403.1.

According to the district, they stopped administering the PPT after the transportation supervisor changed. Investigators found documentation that the driver in this crash underwent this examination in August of 2009 and May of 2010. The driver passed all tasks in both examinations.

The transportation supervisor stated in an interview with NTSB investigators¹⁴ that he accompanied the driver on the afternoon route the day before the crash (December 11, 2017). He stated the driver did not have any issues with the bus during that trip.

1.8. Medications (Prescription, Over-the-Counter, and Other)

During her interview, the driver's wife provided NTSB investigators with a list of prescriptions in the driver's name. The medications were:¹⁵

- Simvastatin, used to lower cholesterol and triglycerides in the blood;¹⁶
- Pantoprazole, used to treat excess stomach acid;¹⁷
- Gabapentin, used to treat seizures and nerve pain;¹⁸ and
- Bupropion, used to treat major depressive disorder and seasonal affective disorder;¹⁹

Investigators obtained records which indicated the driver had a current prescription²⁰ for glucose (blood sugar) meter testing strips.

When interviewed, the driver's wife stated that due to his scheduled surgery, the driver had not taken any prescription pain medications since December 7, 2017. She stated he had only been taking over-the-counter Tylenol.

1.9. Drugs and Alcohol

When interviewed, the driver's wife stated the driver did not drink alcohol, take illegal drugs, or smoke. The driver told his physician that he stopped drinking alcohol in 1986 or 1987 and stopped smoking in 1987.

1.10. Post-Crash Toxicology

At the request of the NTSB, the Iowa Office of the State Medical Examiner took biological samples from the driver and sent them to the Federal Aviation Administration (FAA) Bioaeronautical Research Sciences Laboratory for additional testing.²¹ Testing on the driver's

¹⁴ See *Riverside School District Interviews*, available in the docket as an attachment to the Survival Factors Group Chairman's Factual Report.

¹⁵ Other medications provided by the driver's wife were determined by the Board's Medical Officer to have no potential to be impairing and are not included in this report for privacy reasons.

¹⁶ <https://www.drugs.com/simvastatin.html>.

¹⁷ <https://www.drugs.com/pantoprazole.html>.

¹⁸ <https://www.drugs.com/gabapentin.html>.

¹⁹ <https://www.drugs.com/bupropion.html>.

²⁰ In this context, a current prescription is one filled on a date and in a quantity that if the patient were following the dosing/usage instructions, the patient would be taking/using it at the time of the crash.

²¹ Human Performance Attachment: FAA Laboratory toxicology report.

blood was negative for carboxyhemoglobin,²² positive for dextromethorphan,²³ dextropran,²⁴ and gabapentin, and inconclusive for bupropion. Testing on the driver's urine was negative for ethanol (alcohol) and positive for acetaminophen,²⁵ bupropion, dextromethorphan, dextropran, and gabapentin.

No drugs of abuse were detected in either the blood or urine.

Acetaminophen is a non-sedating pain and fever reducing medication marketed as under many names.²⁶ Dextromethorphan is a cough medication often marketed in combination cough and cold medications such as Triaminic.²⁷ It is generally not considered impairing when taken as directed but may produce sedation when used in excess; its metabolite is dextropran.

1.11. Psychological Factors

When interviewed, the driver's wife stated he had not experienced any significant life events²⁸ in the weeks prior to the crash. She also stated the driver liked driving a school bus and got along with his co-workers, frequently remaining at the bus barn after the morning run to socialize.

1.12. Sleep Habits

When interviewed, the driver's wife stated he typically slept well, although with his back pain, he could have trouble getting comfortable in bed. She stated he otherwise fell asleep easily, but not excessively so. He would nap during the day if nothing else was going on. During the night, he would typically awake "a couple of times" to use the restroom. In the interview, the driver's wife indicated he had the following time-in-bed:

- Saturday to Sunday: 9 to 11 hours;
- Sunday to Monday: 6.5 to 8 hours; and
- Monday to Tuesday: 8.5 to 9 hours.

The driver's work schedule was diurnal and stable, with standard start and end times.

²² Hemoglobin that is bound to carbon monoxide rather than the normal oxygen; it is formed in carbon monoxide poisoning and leads to oxygen deficiency.

²³ A drug in the morphinan class used as a cough suppressant in many over-the-counter cold and cough medicines.

²⁴ A metabolite of dextromethorphan.

²⁵ A mild analgesic used to treat fever and mild to moderate pain.

²⁶ National Library of Medicine (U.S.). 2018. *DailyMed*. Bethesda, MD. Tylenol - acetaminophen.

<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=5d7d1300-bcb8-466a-880b-310b360ee132> Accessed 04/20/2018.

²⁷ National Library of Medicine (U.S.). 2018. *DailyMed*. Bethesda, MD. Triaminic cough and sore throat - acetaminophen, dextromethorphan. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=f61a3668-1526-4124-b203-dc51bc33c201> Accessed 04/20/2018.

²⁸ For the purposes of this report, significant life events were defined as births, deaths, marriages, divorces or separations, marital problems, financial concerns, loss of employment, new employment, change of residence, and major health changes.

1.13. Licensing

At the time of the crash the driver held a current Class “A” Iowa commercial driver’s license issued in December 2012.²⁹ He held the passenger (P), school bus (S), Tank (N), and Double/Triple trailer (T) endorsements. His license also had the corrective lenses (B) and Except Class A bus (M) restrictions.³⁰

A review of the driver’s records from the Iowa Department of Transportation showed one accident, a property-damage only crash in September of 2017;³¹ in this crash, which occurred while the driver was operating his personal vehicle, the driver stated he looked down at something and when he returned his attention to the roadway, he had crossed the centerline and subsequently struck another vehicle.³⁰ This crash resulted in a citation for failure to yield half of roadway. In addition to the September 2017 crash and citation, his record showed three additional convictions for traffic infractions: one in January of 2013, one in July of 2014, and one in August of 2016.

A check of the National Driver Register (NDR) Problem Driver Pointer System (PDPS)³² indicated no pointers for this driver.³³

1.14. Iowa Persons with Disabilities (PWD) Parking Permits

Any Iowa resident with a disability that limits or impairs the person’s ability to walk is eligible to apply for a Persons with Disabilities (PWD) parking permit, allowing them to park in designated for use by those with disabilities.³⁴ To obtain a PWD permit, a person must submit an application to the Department of Transportation (DOT); the application must be accompanied by a letter from a licensed physician, licensed physician’s assistant, licensed advanced registered nurse practitioner, or a chiropractor stating the person has a disability. The application and letter are reviewed by Iowa DOT for the content required by Iowa Code³⁵ and Iowa Administrative Code.³⁶ The ability to operate a motor vehicle does not factor into a person’s eligibility to obtain a PWD permit.

²⁹ His driver’s abstract shows a re-issue of a physical license (i.e. the card) in 2017.

³⁰ Human Performance Attachment: Iowa DOT Certified Abstract of Driving Record / Investigating Officer’s Report of Motor Vehicle Accident.

³¹ For additional information on traffic infractions and crashes, please see the *Motor Carrier Group Chairman’s Factual Report* in the docket for this crash.

³² The PDPS contains information on individuals whose privilege to operate a motor vehicle has been revoked, suspended, canceled or denied or who have been convicted of serious traffic-related offenses. PDPS will “point” the inquiring agency to the State of Record for the offense.

³³ Human Performance Attachment: National Driver Register check.

³⁴ For more information, see : <https://iowadot.gov/mvd/vehicleregistration/persons-with-disabilities>, accessed 8/14/2018.

³⁵ Iowa Code Chapter 321L: <https://www.legis.iowa.gov/docs/code/321l.pdf>, accessed 8/14/2018.

³⁶ 761 Iowa Administrative Code Chapter 411: <https://www.legis.iowa.gov/docs/iac/chapter/08-01-2018.761.411.pdf>, accessed 8/14/2018.

Investigators determined the driver held an Iowa Persons with Disabilities (PWD) parking placard; records from the Iowa DOT indicated the driver was issued a permanent³⁷ PWD parking placard in September of 2015.³⁸ His placard would have expired in September of 2020.

1.15. Training/Experience

When interviewed, the driver's wife stated he had driven a school bus for approximately 20 years. Prior to that, he had driven a truck for a rock and sand company in California for 30 years. She stated the bus he was driving at the time of the crash was his regular bus and the route was his regular route. When asked how long he had been driving that route, she stated "a lot of years".

Records from the Riverside Community School District indicate the driver was hired in September of 1999. For additional information on school bus driver training in Iowa, please see the *Motor Carrier Group Chairman's Factual Report* in the docket.

1.16. Distractions Inside the Vehicle

The driver's wife told investigators that the driver took his cell phone with him on his school runs. She stated that he did not use it while driving; she further stated she believes the District had a policy against such use.

Records from the driver's cellular service provider³⁹ showed no voice (phone call) activity at or near the time of the crash. The records did show outgoing SMS (text messaging) activity near the time of the crash; however, the activity was unusual in that it did not show a receiving phone number. The driver's service provider researched the activity and determined that it was not standard SMS messaging. Ultimately, the provider could not determine the exact nature of the activity but suggested it may be due to a third-party application.

The bus was equipped with a two-way radio for communicating with other school district employees. The radio was also equipped with a button that switched it to transmitting and receiving on a frequency used by emergency services.

1.17. Distractions Outside the Vehicle

Investigators examined the scene of the crash. No billboards or highway signage were present. No reflections, large reflective surfaces, or other distractions were noted.

³⁷ Iowa issues PWD placards for up to six months for temporary disabilities and for five years for permanent disabilities.

³⁸ Human Performance Attachment: Email correspondence with Iowa DOT Office of Vehicle & Motor Carrier Services.

³⁹ Human Performance Attachment: Driver's Cellular Telephone Records.

1.18. Crash Trip

At the time of the crash, the driver was conducting a morning student pickup for the Riverside Community School District. The driver had just begun the route, departing the bus barn at approximately 6:30 a.m. The accident location was also the first stop of the day.⁴⁰

2. Other Factors

2.1. Global Positioning System Location

NTSB investigators used the iPhone application “Compass” while at the accident scene to determine the following coordinates for the crash location:

Latitude: 41° 16’ 17.60” N

Longitude: 95° 16’ 11.36” W

2.2. Weather

Data from weather station KAIO (Atlantic Municipal) in Atlantic, Iowa for the date of this crash – December 12, 2017 - was downloaded from the Weather Underground, <http://www.weatherunderground.com>.⁴¹ Data for observations closest to the time of the crash are shown in Table 2.

Table 2. Weather Data from KAIO for December 12, 2017.

Time (CST)	6:35 a.m.	6:55 a.m.
Temperature	14.0° F	14.0° F
Wind Chill	3.9° F	5.1° F
Dew Point	10.4° F	10.4° F
Humidity	86%	86%
Pressure	30.31 in	30.31 in
Visibility	10.0 mi	10.0 mi
Wind Dir.	NW	NW
Wind Speed	6.9 mph	5.8 mph
Wind Gust Speed	N/A	N/A
Precipitation	N/A	N/A
Events	N/A	N/A
Conditions	Clear	Clear

⁴⁰ Human Performance Attachment: Riverside School District Bus Schedule.

⁴¹ Human Performance Attachment: Weather Data, KAIO, December 12, 2017.

2.3. Illumination and Distractions Outside the Vehicle

According to the U.S. Naval Observatory Astronomical Applications Department,⁴² for the accident location on December 7, 2017, civil twilight⁴³ was at 7:06 a.m. and sunrise was at 7:38 a.m. At the time and location of the crash, the sun was at an azimuth of 113.4 degrees east of true north and at an altitude of 8.5 degrees below the horizon.

2.4. School Bus Driver Physical Performance Tests

2.4.1. Development of Tests – New York State

In response to challenges to two physical standards related to school bus drivers,⁴⁴ the State of New York developed a physical performance test (PPT) for school bus drivers. The purpose of the PPT is to provide a consistent standard for all bus drivers to demonstrate they have the physical ability to drive a bus, to move around the bus for emergencies and/or discipline, and to evacuate themselves and students.

The development of the performance standards and accompanying test was accomplished by the New York State Education Department (NYSED) through consultation with employees of the state of Oregon (who were working on something similar at the time), medical and physical therapy professionals, and legal counsel. Pilot testing with volunteer fleets was also conducted. Revisions to the Regulations of the Commissioner of Education⁴⁵ in July of 1997 specified that all school bus drivers in the state of New York hired after September 1, 1997, were required to take and pass the PPT.⁴⁶ PPT testing has been happening continually since 1997.⁴⁷

The NYSED sub-committee on PPT recently completed a review of the standards and testing process and recommended some updates; those recommendations are pending, awaiting the appointment of a new State Director. Testing continues during this update process.

The regulations require all drivers to be re-tested biennially. Drivers are tested on the largest sized bus they will be assigned to drive; the state defines any school bus seating less than 30 passengers as “small”; any bus as seating 30 or more passengers as “large”; and sedans, suburbans, minivans as “other”. Taking the test on any vehicle of a particular type qualifies the driver on all buses within that type and on any of a smaller type.⁴⁸ The tests are conducted by certified school bus driver instructors.

⁴² Human Performance Attachment: Astronomical Data.

⁴³ Civil twilight is defined to begin in the morning, and to end in the evening when the center of the Sun is geometrically 6 degrees below the horizon. This is the limit at which twilight illumination is sufficient, under good weather conditions, for terrestrial objects to be clearly distinguished; see http://aa.usno.navy.mil/faq/docs/RST_defs.php.

⁴⁴ A mandatory retirement at age 65 was challenged as age discrimination and a requirement to have both hands and feet was challenged under the Americans with Disabilities Act (ADA).

⁴⁵ Section 156.3.

⁴⁶ Drivers hired before September 1, 1997 were required to take and pass the test by July 1, 2000.

⁴⁷ Similar standards were developed and implemented for bus attendants/monitors in 2003.

⁴⁸ For example: if a driver tests and qualifies on a 66-passenger bus, they are also qualified to drive a 72-passenger bus (same type) and smaller buses (smaller type).

New York school bus drivers are tested on seven performance standards. The drivers must begin with standard number 1 and proceed in order though number 7 without rest periods between. The seven standards are shown in Table 3.

Table 3. New York State School Bus Driver Physical Performance Standards

Standard	Description	Timing	Ability Tested
#1	Climb & Descend Steps	3 times in 30 seconds	Overall physical agility/movement
#2	Throttle to Brake	10 times in 10 seconds	Rapid & repetitive leg movement
#3	Brake Depression	5 3-second holds	Leg strength, joints, artificial limbs
#4	Manually open/close service door	3 times, no time limit	Repetitive arm use
#5	Activate switches (2 each hand)	8 seconds maximum	Use of hands/fingers & controlling bus
#6	Exit self from rear emergency	20 seconds	Ability to exit from bus in emergency
#7	Drag 125-lb weight 30 feet	30 seconds	Ability to evacuate unconscious or non-ambulatory student

2.4.1. Tests in Other States

NTSB investigators sought to determine the current position of the states with respect to PPTs for school bus drivers. In February of 2018, the National Association of State Directors of Pupil Transportation Services (NASDPTS) queried its members as to their positions on PPTs for school bus drivers; that information is summarized below.

Table 4. Responses to NASDPTS Query

State	PPT Status	Notes
Alabama	Allowed	Can be allowed by local policy
Colorado	Allowed	
Florida	Required	
Indiana	Required	Modeled on NY
Iowa	Allowed	Modeled on NY
Kansas	Allowed	District option, not standardized
Kentucky	Allowed	Districts allowed to do so
Mississippi	Allowed	
Nebraska	No position	
Nevada	No position	
New Mexico	No position	
Ohio	No position	
Oregon	Allowed	
Tennessee	No position	
Texas	No position	
Washington	Allowed	
West Virginia	Required	

NTSB investigators conducted an internet search to determine the position of any remaining states on the issue of PPTs for school bus drivers and were successful in some cases. The additional information is listed in Table 5.

Table 5. PPT Information from Internet Search

State	PPT Status	Source Link (all accessed in May of 2018)
Arizona	Required	www.azdps.gov/sites/default/files/media/arizona-minimum-standards-for-school-buses-and-school-bus-drivers.pdf
Louisiana	Allowed	www.lasto.org/Files/1191.pdf
South Carolina	Required	https://ed.sc.gov/scdoe/assets/file/agency/os/Transportation/Safety-Information/documents/SCBusDriverPerformancePolicy.pdf
Utah	Allowed	www.besd.net/personnel/JobDescriptions/Classified/Bus%20Driver.pdf

Taken together, the sources of information indicate PPTs are required by 6 states (including New York, addressed above) and allowed in 10 states. Additionally, 6 states take no position on PPTs and information on PPTs could not be found for 28 states⁴⁹ or the District of Columbia. Research also indicated that some private school transportation companies, including First Student, Incorporated, the top school bus contractor in the United States in 2017, also require their drivers to pass a PPT.

⁴⁹ Alaska, Arkansas, California, Connecticut, Delaware, Georgia, Hawaii, Idaho, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, Wisconsin, and Wyoming.

E. DOCKET MATERIAL

The following attachments and photographs are included in the docket for this investigation:

LIST OF ATTACHMENTS

- Human Performance Attachment - Riverside School District Bus Schedule
- Human Performance Attachment - Carson, IA City Council minutes, December 11, 2017
- Human Performance Attachment - Narratives and Transcripts of Investigative Interviews
- Human Performance Attachment - Riverside Community School District Board Policy 403.1
- Human Performance Attachment - FAA Laboratory Toxicology Report
- Human Performance Attachment - Email Correspondence with Iowa DOT Office of Vehicle & Motor Carrier Services
- Human Performance Attachment - Iowa DOT Certified Abstract of Driving Record / Investigating Officer's Report of Motor Vehicle Accident.
- Human Performance Attachment - National Driver Register Check
- Human Performance Attachment - Driver's Cellular Telephone Records
- Human Performance Attachment - Weather Data, KAIO, December 12, 2017
- Human Performance Attachment - Astronomical Data
- Human Performance Attachment - NASDPTS Query Results

LIST OF PHOTOGRAPHS

NONE

END OF REPORT

Dennis J. Collins
Senior Accident Investigator, Human Performance