



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

Palm Springs, CA

HWY17MH005

(18 pages)

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

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

A. CRASH INFORMATION

Location: Westbound Interstate 10 (I-10) in the vicinity of post mile marker 32.5,
near Palm Springs, Riverside County, California
Vehicle #1: 1996 MCI Motorcoach
Operator #1: USA Holiday Inc.
Vehicle #2: 2015 International ProStar Truck-tractor in combination with a 2013
Utility VS2RA
Semi-trailer
Operator#2: TSC, Tri-State Collision, LLC
Date: October 23, 2016
Time: Approximately 5:16 a.m. Pacific Daylight Time (PDT)
Injuries: 31 Bus Passengers, 1 Truck Driver
Fatalities: 12 Bus Passengers, 1 Motorcoach driver
NTSB #: **HWY17MH005**

B. ACCIDENT SUMMARY

For a summary of the accident, please refer to the *Accident Summary* report in the docket for this investigation

C. HUMAN PERFORMANCE GROUP

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D. DETAILS OF THE HUMAN FACTORS INVESTIGATION

The focus of this report is a crash involving a 1996 MCI motorcoach which struck the rear of a stopped 2015 International Prostar Truck Tractor in combination with a van style semi-trailer. The Human Performance factual investigation focused on the behavioral, medical, operational, and environmental factors associated with the drivers of the motorcoach (henceforth referred to as the motorcoach driver) and truck-tractor (henceforth referred to as the truck driver). Factors that potentially contributed to the crash are documented in the sections below.

1. Motorcoach Driver Behavioral Factors

1.1. Background

1.1.1. Licensing

At the time of the crash the motorcoach driver, a 59-year-old male, held a valid California Class B Commercial Driver License (CDL) with a passenger endorsement.¹ The license was issued on July 8, 2016 with an expiration date of September 12, 2020. The driver was medically certified to operate a commercial motor vehicle and there were no license restrictions.²

1.1.1.1. License History

The motorcoach driver's California license record lists traffic violation convictions and motor vehicle crashes.³ The record does not indicate if violations occurred while the driver was operating a commercial vehicle. The record indicates that the driver was involved in a traffic crash on June 24, 2016 but was not at fault. Traffic violation convictions are displayed below in **Table 1**.

1.1.1.2. Crash History

According to the carrier's records and the California Department of Motor Vehicles, the motorcoach driver has had seven previous reportable crashes since December 1998. The most recent crash occurred on June 24, 2016. In this crash, the motorcoach driver was the victim of a hit and run crash while operating a passenger vehicle. The previous seven crashes occurred beyond record retention; information as to the details of the crashes were not available.

1.1.2. Experience

According to a Federal Motor Carrier Safety Administration (FMCSA) database query, the motorcoach driver first registered as the owner of USA Holiday Inc., the accident carrier, in April 2004. Prior to that, he first appeared as a driver for another carrier in June 1989. The driver's experience in these companies has been operating commercial buses. Because the motorcoach

¹ A California Commercial Class B Driver License permits the holder to operate, in commerce, a vehicle with a gross vehicle weight rating (GVWR) of 26,001 pounds or more.

² 49 Code of Federal Regulations §391.41 requires that a person who operates a commercial motor vehicle in commerce be medically certified as physically qualified to operate such vehicles.

³ Human Performance Factors Attachment 1 – 1996 MCI Driver California Driver License Record.

driver did not survive the crash, no information as to the specific types of buses he has driven was obtained.

Table 1. Motorcoach Driver Traffic Violation Convictions.

Date	State	Violation
March 8, 2002	California	Stop Sign/Signal violation
September 5, 2005	California	Speed >70Mph
June 10, 2006	California	License Class violation Failure to Appear
January 15, 2007	California	Backing on highway Open container
February 5, 2011	California	Lane violation
October 3, 2011	California	Lane violation CMV violation
November 5, 2011	California	Lane violation CMV violation
December 6, 2011	California	Cell phone violation
November 2, 2013	California	Failure to appear

1.1.3. Accident Trip/Route Experience

The accident trip consisted of transportation to and from Los Angeles and the Red Earth Casino in Salton Sea Beach, California for casino patrons who individually purchased fare. Each segment of the trip is about 160 miles and takes about three hours. However, due to Los Angeles traffic congestion, the time it takes to make the trip can vary. According to staff at the Red Earth Casino, the motorcoach driver had driven the route from Los Angeles to the casino off and on since 2014. In a contractual agreement between the carrier and the casino, the carrier was scheduled to transport casino patrons to the casino four days per week; Tuesdays, Thursdays, Saturdays, and Sundays. The passengers were scheduled to arrive by 11:00 p.m. and depart after a minimum 4 or 4 ½ hour stay. The contract required the Red Earth Casino to be the first and only stop of the trip. Casino records indicate that the motorcoach driver had most recently made the trip on October 18, 2016. Cellphone records show that the motorcoach driver used his phone near Tortoise Rock Casino on October 21, 2016 at 11:25 p.m. This phone activity is consistent with the driver’s family’s statement that he worked the day before the crash trip.

1.2. Medical Factors

Preliminary information on the motorcoach driver's health was obtained from an interview with the driver's son and his most recent Commercial Driver Fitness Determination Medical Examination Report.

1.2.1. Medical Examination Report for Commercial Motor Vehicle Driver Fitness Determination (CDL Medical Exam)

Commercial drivers in the United States are required by *Federal Motor Carrier Safety Regulations* (FMCSRs) to be medically certified as being physically qualified to drive a commercial vehicle.⁴ These examinations may 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;⁵
- 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.

1.2.1.1. Most Recent CDL Medical Exam

The motorcoach driver's most recent medical Examination for Commercial Driver Fitness Determination was on July 6, 2016. The exam was conducted by a chiropractor at an occupational health medical facility in Commerce California. A primary focus of the clinic's business model is to provide commercial driver fitness exams and Department of Transportation related drug testing.

In the self-reporting health history section on the report, the driver indicated "No" to having an illness or injury in the last 5 years. The Medical Examiner's Comments on Health History section of the report, indicates that the driver reports negative health history and denies the use of current or recent medications. The driver reported using daily vitamin supplements. The driver further reported that he does not drink or smoke.

The driver's height was recorded as 67 inches and his weight was recorded as 242 pounds. This corresponds to a Body Mass Index (BMI) of 37.9.⁶ The driver's blood pressure was recorded to be 138/85 and his pulse rate was 80 and regular. During the initial urinalysis, the driver's urine sample was positive for glucose.⁷ The driver returned the following day; the urinalysis showed no

⁴ 49 Code of Federal Regulations §391.41.

⁵ For more information on who must be examined and the examination process, please see 49 CFR §391.43 and 49 CFR §391.45.

⁶ For BMI information, see: http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm .

⁷ For more information see the Medical Factual Report in the docket for this Investigation.

protein, blood, or sugar and he was medially certified for a two-year period. The report noted no abnormalities in any of the driver's body systems.

1.2.1.2. Vision

On the driver's most recent CDL Medical Exam, his uncorrected Snellen visual acuity was recorded to be 20/40 in the left eye, 20/40 in the right eye, and 20/30 in both eyes.⁸ His horizontal field of vision was recorded as 80 degrees for both eyes. The driver was able to recognize and distinguish among traffic control signals and devices showing standard red, green, and amber colors. The driver was not found to have had monocular vision.

1.2.1.3. Hearing

In the accident driver's most recent CDL Medical Examination, he was reported to have been able to hear a forced whispered voice at five feet in each ear.

1.2.2. General Health

In an interview with NTSB investigators, the motorcoach driver's son stated that he had no knowledge of his father's health. He believed his father to be healthy and did not know him to have any medical conditions or to have taken any medications. Information obtained in the investigation indicates the motorcoach driver did not have medical insurance through his employment and likely did not have a primary care physician.

Medical and toxicology records which were obtained in the course of this investigation were provided to the NTSB Medical Officer. For more information on the motorcoach driver's general health, see the *Medical Factual Report* in the accident docket for this investigation.

1.2.3. Post-accident Toxicology

Following the crash, NTSB investigators obtained a postmortem blood sample from the motorcoach driver. The sample was sent to the Civil Aerospace Medical Institute toxicology laboratory for analysis. An analysis was completed on December 7, 2016.⁹ The driver tested negative for:¹⁰

- alcohol;
- amphetamines;
- opiates;
- marihuana;
- cocaine;
- phencyclidine;
- barbiturates;
- antidepressants; and

⁸ Snellen fractions are a measure of visual acuity (sharpness of sight). In the Snellen fraction, the first number represents the test distance (20 feet) and the second represents the distance at which the average eye could see the letters on a certain line of the chart. A fraction of 20/20 is considered normal vision.

⁹ Human Performance Factors Attachment 2 – 1996 MCI Driver Forensic Toxicology Report

¹⁰ See the CAMI Drug Information Web Site for additional information <http://jag.cami.jccbi.gov/toxicology/>.

antihistamines.

Postmortem vitreous and urine were tested for the presence of glucose with reagent strips and by enzymatic spectrophotometric analysis. The glucose level detected in the urine was 281 mg/dl.¹¹

1.2.4. Psychological Factors

At the time of the crash the motorcoach driver was married and lived at home with his wife and adult son. His son did not know of any recent life stressors the driver may have faced. Additionally, the circumstances of the crash do not suggest that the crash was the result of an intentional act.

1.3. Activities Prior to the Crash

The driver of the motorcoach died from injuries sustained in the crash. Information on the driver’s activities in the days leading up to the crash were obtained from an interview with the motorcoach driver’s son¹², cellphone records¹³, and surveillance video from the Read Earth Casino. Information obtained from these sources was utilized to develop a preliminary time table of the driver’s activities in the days leading up to the crash. The driver’s activities are summarized below in **Table 2**.¹⁴ All times are given in Pacific Daylight Time.

Table 2. 1996 MCI driver activities prior to the accident

Wednesday, October 19, 2016		
<u>Time</u>	<u>Event</u>	<u>Source</u>
3:56 a.m.	Driver makes phone call, Location not provided	Cellphone Records
4:12 a.m.-4:14 a.m.	Driver departs Red Earth Casino for return trip	Cellphone Records
5:39 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
7:59 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
10:25 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
11:45 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
12:53 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
5:50 p.m.	Driver makes phone call, location not indicated	Cellphone Records
6:53 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
8:32 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
9:10 p.m.	Driver makes last phone call of the day, Los Angeles, CA	Cellphone Records
Thursday, October 20, 2016		
<u>Time</u>	<u>Event</u>	<u>Source</u>
8:25 a.m.	Driver makes first phone call of the day, Los Angeles, CA	Cellphone Records
10:25 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
3:16 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
5:18 p.m.	Driver receives phone call, Los Angeles, CA	Cellphone Records
6:52 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
9:02 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
10:29 p.m.	Driver makes last phone call of the day, Los Angeles, CA	Cellphone Records

¹¹ Normal glucose levels are 0-15 mg/dl. Available from: <https://medlineplus.gov/ency/article/003581.htm>.

¹² Human Performance Factors Attachment 3 – Motorcoach Driver’s Son Interview Transcript.

¹³ Human Performance Factors Attachment 4 – 1996 MCI Driver’s Cellphone Records.

¹⁴ The cellphone calls listed in Table 2 are not inclusive of all cellphone activity;

Friday, October 21, 2016		
<u>Time</u>	<u>Event</u>	<u>Source</u>
7:22 a.m.	Driver makes first phone call of the day, Los Angeles, CA	Cellphone Records
9:16 a.m.	Driver makes phone, Los Angeles, CA	Cellphone Records
10:38 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
1:49 p.m.	Driver receives phone call, Palm Springs, CA	Cellphone Records
3:24 p.m.	Driver receives phone call, Pamona, CA	Cellphone Records
4:23 p.m.	Driver receives phone call, Los Angeles, CA	Cellphone Records
6:20 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
7:56 p.m.	Driver receives phone call, Los Angeles, CA	Cellphone Records
9:03 p.m.	Driver receives phone call, location not indicated	Cellphone Records
10:31 p.m.	Driver receives phone call in Palm Springs, CA	Cellphone Records
11:45 p.m.	Driver makes phone call of the day Twenty-nine Palms, CA	Cellphone Records
Saturday, October 22, 2016		
<u>Time</u>	<u>Event</u>	<u>Source</u>
3:34 a.m.	Driver makes phone call, Twenty-nine Palms, CA	Cellphone Records
6:47 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
8:05 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
10:00 a.m.	Driver came home from work	Witness Interview
10:48 a.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
12:30 p.m.	Driver goes to bed ¹⁵	Witness Interview
12:53 p.m.	Driver receives phone call, Los Angeles, CA	Cellphone Records
1:33 p.m.-1:45 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
4:45 p.m.	Driver woke up	Witness Interview
5:00 p.m.	Driver left home for work	Witness Interview
5:11 p.m.	Driver makes phone call, Los Angeles, CA	Cellphone Records
11:22 p.m.	Motorcoach arrives at Red Earth Casino	Casino Video
11:28 p.m.	Driver refuels motorcoach	Casino Video
11:57 p.m.	Driver parks motorcoach	Casino Video
Sunday, October 23, 2016		
<u>Time</u>	<u>Event</u>	<u>Source</u>
12:01 a.m.	Driver enters casino, drops off passenger manifest	Casino Video
12:03 a.m.	Driver begins gambling	Casino Video
2:33 a.m.	Driver returns to bus, starts engine	Casino Video
4:03 a.m.	Driver moves bus to pick up passengers	Casino Video
4:22 a.m.	Bus departs casino	Casino Video
5:16 a.m.	Crash Occurs in Palm Springs, CA	

1.3.1. Sleep Habits

In order to determine what opportunities the motorcoach driver had for sleep in the days leading up to the crash, staff considered all available information reflecting his activities. The cumulative information shows that the driver's opportunity for rest is consistent on the days he makes trips to the casino. The motorcoach driver's work/rest activity is displayed graphically below in **Table 3**.

The motorcoach driver's son stated that his father typically goes to work around 5:00 p.m. and returns the next morning around 10:00 a.m. He does not work another job. He believes his

¹⁵ Cellphone records indicate the motorcoach driver used his cellphone past when he was reported to have gone to bed.

father sleeps well and has no knowledge of any medical conditions which may have affected his sleep. The motorcoach driver does not use sleep aids to fall asleep.

According to cellphone records, the motorcoach driver returned from an overnight trip to the Red Earth Casino the morning of October 19. He then had a five-hour midday opportunity for rest from about 12:53 p.m. until about 5:50 p.m. The motorcoach driver then had an overnight opportunity for rest; from about 9:10 p.m. until about 8:25 a.m. On October 20, the motorcoach had a similar overnight opportunity for rest; from about 10:29 p.m. until 7:22 a.m.

October 21, two days prior to the crash trip, cellphone records show that the bus driver used his cellphone in the vicinity Palm Springs, CA around 1:49 p.m. At 3:24 .m. the motorcoach driver used his phone in the vicinity of Los Angeles. Cellphone records show that the motorcoach driver used his cellphone in the vicinity of the Tortoise Rock Casino in Twentynine Palms, CA at 11:25 p.m. Although there is no information indicating what time he finished work, phone records show that receive a phone call at 6:47 a.m. the next morning in Los Angeles.

October 22, the day prior to the crash, the motorcoach driver returned home from work around 10:00 a.m. and talked with his family until he went to bed around noon. However, cellphone records indicates, due to cellphone usage, he had a sleep opportunity from 1:45 p.m. to 4:45 p.m. The driver’s son stated that he woke the driver up around 4:45 p.m. for work. Surveillance video from the Red Earth casino shows that the driver arrived at the casino around 11:22 p.m., gambled in the casino until about 2:33 a.m. and entered the bus, where he had an opportunity for sleep until 3:49 a.m. when he had a call from a passenger because he was late arriving at the pick-up location. In all, the driver had a fractured sleep opportunity; 2 hours, 17 minutes from 8:29 a.m. until 10:46 a.m., 3 hours from 1:45 p.m. until 4:45 p.m., and 1 hour, 26 minutes from 2:33 a.m. Until 3:58 a.m.

Table 3. 1996 MCI Driver Work/Rest Chart

Date	Pacific Daylight Time																							
	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
Wednesday, October 19, 2016	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty
Thursday, October 20, 2016	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty
Friday, October 21, 2016	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty
Saturday, October 22, 2016	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty
Sunday, October 23, 2016	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty	On-duty

Legend On-duty Sleep Opportunity Phone Use Crash

2. 2015 International Truck-tractor Driver Behavioral Factors

2.1. Background

2.1.1. Licensing

At the time of the crash the truck driver, a 50-year-old male, held a valid Georgia Class A Commercial Driver License (CDL) with an endorsement for double and triple trailers; there were no license restrictions.^{16 17} The truck driver first obtained his CDL on June 8, 2001.

2.1.1.1. License History

The truck driver's Georgia driver license record lists traffic violation convictions and motor vehicle crashes which occurred during the time he has held a Georgia driver license.¹⁸ The time period covered in his license record goes beyond when he obtained a commercial driver license. The driving record does not indicate whether the violations or accidents occurred while he was operating a commercial vehicle. Traffic violation convictions are displayed below in **Table 4**.

Table 4. 2015 International Driver Traffic Violation Convictions

Date	State	Violation
October 12, 1992	Georgia	Speeding (75 mph in 55 mph)
April 1, 1993	Georgia	Speeding (64 in 45)
April 7, 1993	Alabama	Speeding (50 in 35)
October 10, 1993	Georgia	Speeding (70 in 55)
July 1 1994	Georgia	Speeding (78 in 55)
October 12 1994	Georgia	Speeding (70 in 55)
December 23, 1994	Alabama	Speeding (78 in 55)
March 5, 1995	Florida	Speeding (80 in 65)
March 29, 1995	Georgia	Failure to maintain insurance

¹⁶ A Georgia Commercial Class A Driver License permits the holder to operate, in commerce, a commercial vehicle with a gross vehicle weight rating (GVWR) of 26,001 pounds or more in combination with a trailer with a GVWR of 10,000 pounds or more.

¹⁷ Double/triple endorsements permits the license holder to operate a combination vehicle with two or three trailers where allowed.

¹⁸ Human Performance Factors Attachment 5 – 2015 International Driver Georgia Driver License Record.

February 7, 1996	Georgia	Failure to obey stop sign
June 19, 2006	Georgia	Speeding (70 in 55)
October 20, 2009	New York	Speeding (
January 3, 2011	Georgia	Obscured license
February 15, 2015	Kansas	Improper lane change or location
August 30, 2016	New Mexico	Speeding (60 in 45)

2.1.2. Commercial Driving Experience

Information contained in the truck driver's Driver Qualification (DQ) File was used to determine the amount of experience he had operating CMV's. The information indicates, at the time of the crash, the truck driver had been driving truck tractors for about 16 years; four years driving locally and 12 years driving long distance. The truck driver's commercial driver employment history is listed in **Table 4** below.

Table 4. 2015 International Driver Commercial Driver Employment History

Employer	From	To
Fed Ex Freight	April 2000	April 2004
Sunco Carriers	April 2004	December 2011
R.E. Garrison Trucking	December 2011	September 2016
Tri-State Collision	September 2016	Time of Collision

2.1.3. Training

In an interview with NTSB investigators, the truck driver stated he first obtained his commercial driver license through a new-hire drive training program with Fed Ex Freight. He was trained on operating truck tractors and obtained an endorsement to haul double and triple trailers. When he began employment with the accident carrier, he underwent familiarization training which consisted of training on the specific equipment he was going to operate and ensuring his driving proficiency was to company standards.

2.1.4. Accident Trip/Route Experience

The truck driver stated he had not previously driven the crash route; he was unfamiliar with the area. Additionally, he stated that he was unfamiliar with the practice of traffic breaks.¹⁹

2.2. Medical Factors

Information on the truck driver's health was obtained from an interview with the truck driver, information from his most recent Commercial Motor Vehicle Driver Fitness Determination exam, and medical records from his primary care physician.²⁰

2.2.1. Medical Examination Report for Commercial Motor Vehicle Driver Fitness Determination (CDL Medical Exam)

Commercial drivers in the United States are required by *Federal Motor Carrier Safety Regulations* (FMCSRs) to be medically certified as being physically qualified to drive a commercial vehicle.²¹ These examinations may 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;²²
- 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.

2.2.1.1. January 15, 2015 CDL Medical Exam

Prior to the crash a CDL Medical Exam was conducted on January 15, 2015. Following the exam, the truck driver was issued a two-year medical certification which expired on January 15, 2017. However, on December 1, 2016 a criminal complaint in the U.S. District Court, Northern District of Georgia was issued against the medical official who performed the exam. An investigation of the doctor determined that he conducted a number of medical certification examinations that far exceeded a reasonable number of examinations. The investigation further determined that the doctor exhibited a pattern whereby examinations were incomplete, required test were not performed, and information on the medical examination form was falsified. Consequently, the medical official's FMCSA certification and the truck driver's medical

¹⁹ For more information on the procedures of traffic breaks, see the Highway Factors Group Chairman Report in the docket for this investigation.

²⁰ For more information on the truck driver's condition, see the Medial Factual Report in the docket for this investigation.

²¹ 49 Code of Federal Regulations §391.41.

²² For more information on who must be examined and the examination process, please see 49 CFR §391.43 and 49 CFR §391.45.

certification was revoked. The truck driver was afforded thirty days to obtain a medical certification from a certified examiner.

In the self-reporting health history section on the report, the driver indicated “No” to having an illness in the last 5 years and that he has had a partial amputation of the left index finger. The Medical Examiner’s Comments on Health History section of the report, indicates that the driver reports negative health history and denies the use of current or recent medications.

The driver’s height was recorded as 72 inches and his weight was recorded as 350 pounds. This corresponds to a Body Mass Index (BMI) of 44.9.²³ The driver’s blood pressure was recorded to be 132/84 and his pulse rate was 72 and regular. A urinalysis showed no protein, blood, or sugar. The report noted no abnormalities in any of the driver’s body systems.

2.2.1.1.1. Vision

The truck driver’s uncorrected Snellen visual acuity was recorded to be 20/20 in both eyes.²⁴ His horizontal field of vision was recorded as 90 degrees in the right eye and 80 degrees in the left eye. The driver was able to recognize and distinguish among traffic control signals and devices showing standard red, green, and amber colors. The driver was not found to have had monocular vision.

2.2.1.1.2. Hearing

In an interview the truck driver, he stated that he had no abnormalities in his hearing. The truck driver was reported to have been able to hear a forced whispered voice at five feet in each ear.

2.2.1.2. January 4, 2017 CDL Medical Exam

Following the crash, the truck driver obtained a CDL Medical Exam on January 4, 2017 from an occupational health clinic specializing in commercial driver medical certifications. In the self-reporting health history section on the report, the driver indicated “No” to having an illness in the last 5 years and that he has had a traumatic amputation of the left index finger when he was 30 years old. The Medical Examiner’s Comments on Health History section of the report, indicates that the driver reports negative health history and denies the use of current or recent medications.

The driver’s height was recorded as 72 inches and his weight was recorded as 350 pounds. This corresponds to a Body Mass Index (BMI) of 44.9.²⁵ The driver’s blood pressure was recorded to be 136/86 and his pulse rate was 80 and regular. A urinalysis showed no protein, blood, or sugar. The report noted no abnormalities in any of the driver’s body systems.

²³ For BMI information, see: https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm.

²⁴ Snellen fractions are a measure of visual acuity (sharpness of sight). In the Snellen fraction, the first number represents the test distance (20 feet) and the second represents the distance at which the average eye could see the letters on a certain line of the chart. A fraction of 20/20 is considered normal vision.

²⁵ For BMI information, see: https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm.

2.2.1.2.1. Vision

The truck driver's uncorrected Snellen visual acuity was recorded to be 20/20 in the right eye, 20/25 in the left eye, and 20/20 in both eyes. His horizontal field of vision was recorded as greater than 70 degrees in both eyes. The driver was able to recognize and distinguish among traffic control signals and devices showing standard red, green, and amber colors. The driver was not found to have had monocular vision.

2.2.1.2.2. Hearing

In an interview the truck driver, he stated that he had no abnormalities in his hearing. The truck driver was reported to have been able to hear a forced whispered voice at five feet in each ear.

2.2.2. General Health

In an interview with NTSB investigators, the truck driver stated that his health is generally good; he has not been diagnosed with any medical conditions and does not take daily medications.

Medical and toxicology records which were obtained in the course of this investigation were provided to the NTSB Medical Officer. For more information on the truck driver's general health, see the *Medical Factual Report* in the accident docket for this investigation.

2.2.3. Post-accident Toxicology

Following the crash, the truck driver underwent an alcohol and drug test at Eisenhower Medical Center.²⁶ The truck driver tested negative for alcohol in a breath alcohol test. Blood and urine specimens were collected on October 23, 2016 at 11:21 a.m. The driver tested negative for:

- Amphetamines
- Cannabinoids
- Cocaine
- Methylenedioxymethamphetamine (MDMA)
- Opiates
- Phencyclidine (PCP)

2.2.4. Psychological Factors

The truck driver stated that he is married and lives at home with his wife. He had not experienced any recent life stressors which may serve as motivation for an intentional act. Further, the circumstances of the crash suggest that the event was unintentional.

²⁶ Human Performance Factors Attachment 6 – 2015 International Driver Post-crash Toxicology Report.

2.3. Activities Prior to the Crash

Information on the truck driver’s activities in the days leading up to the crash were obtained from an interview with the driver, data from an integrated global positioning system (GPS) aboard the truck tractor, and employee records from the carrier, TSC, Tri-State Collision, LLC. Information obtained from these sources was utilized to develop a time table of the driver’s activities in the days leading up to the crash. The driver’s activities are summarized below in **Table 5**. All times are given in Pacific Daylight Time.

Table 5. 2015 International driver activities prior to the accident

Wednesday, October 19, 2016		
Time	Event	Source
5:40 a.m.-5:49 a.m.	Driver starts engine	Truck GPS
7:06 a.m.-1:11 p.m.	Driver starts engine six times	Truck GPS
1:35 p.m.-1:42 p.m.	Driver travels 7 mins.	Truck GPS
2:07 p.m.-2:23 p.m.	Driver travels 9 mins.	Truck GPS
5:31 p.m.-11:13 p.m.	Driver travels 5 hrs. 42 mins.	Truck GPS
Thursday, October 20, 2016		
Time	Event	Source
12:26 a.m.-2:10 a.m.	Driver travels 1 hr. 4 mins.	Truck GPS
5:41 a.m.-6:55 a.m.	Driver travels 1 hr. 14 mins.	Truck GPS
9:29 a.m.-9:53 a.m.	Driver travels 24 mins.	Truck GPS
10:19 a.m.-2:14 p.m.	Diver travels 3hrs. 55 mins.	Truck GPS
2:15 p.m.-3:15 a.m.	Vehicle stationary 13 hrs.	Truck GPS
Friday, October 21, 2016		
Time	Event	Source
3:15 a.m.-7:12 a.m.	Vehicle travels 3 hrs. 57 mins.	Truck GPS
9:01 a.m.-11:23 a.m.	Vehicle travels 2 hrs. 22 mins.	Truck GPS
11:24 a.m.-12:15 p.m.	Vehicle stationary 51 mins.	Truck GPS
12:17 p.m.-6:36 p.m.	Vehicle travels 6 hrs. 19 mins	Truck GPS
6:38 p.m.-6:02 a.m.	Vehicle stationary 11 hrs. 24 mins	Truck GPS
Saturday, October 22, 2016		
Time	Event	Source
6:03 a.m.-12:16 p.m.	Vehicle travels 6 hrs. 13 mins.	Truck GPS
12:36 p.m.-3:48 p.m.	Vehicle travels 3 hrs. 12 mins.	Truck GPS
3:49 p.m.-2:58 a.m.	Vehicle Stationary 11 hrs. 8 mins.	Truck GPS
Sunday, October 23, 2016		
Time	Event	Source
2:58 a.m.-5:13 a.m.	Vehicle travels 2 hrs. 15 mins.	Truck GPS
5:16 a.m.	Crash Occurs in Hot Desert Springs, CA	

2.3.1. Sleep Habits

The truck driver is an over-the-road commercial driver and while working, sleeps in the sleeper berth of his truck. He stated that he typically drives during the day and sleeps at night. Data from an integrated GPS aboard the accident truck was analyzed to determine when the vehicle was moving or stationary. Extended periods in which the truck was stationary are considered times in which the driver could have obtained rest.

The day prior to the crash GPS records show that the driver had an eleven-hour opportunity for rest; from 3:49 p.m. on October 22 until 2:58 a.m. on October 23, 2016. At the time the crash

occurred, the driver had been working for about two hours. On October 21, 2016, the truck driver had an eleven-and-a-half-hour opportunity for rest; from 6:38 p.m. until 6:08 am the next morning. On October 20, 2016, the truck driver had a thirteen-hour opportunity for rest; from 2:15 p.m. until 3:15 a.m. the next morning. Although the driver’s activities in this report are given in Pacific Daylight Time, it is important to note that the driver lived in Eastern Daylight Time zone. The truck driver’s work/rest activity is displayed graphically below in **Table 6**.

Table 6. 2014 International Driver Work/Rest Chart

Date	Pacific Daylight Time																							
	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
Wednesday, October 19, 2016																								
Thursday, October 20, 2016																								
Friday, October 21, 2016																								
Saturday, October 22, 2016																								
Sunday, October 23, 2016																								

Legend ■ On-duty ■ Sleep Opportunity ■ Phone Use ■ Crash

3. Witness Interviews

3.1. 2015 International Driver Interview

On October 25, 2016, an interview of the truck driver was conducted concurrently with the California Highway Patrol and NTSB investigators.²⁷ A follow-up interview was conducted on January 17, 2017. The driver provided investigators information regarding his commercial driving experience and background which is referenced throughout this report.

With respect to his observations and actions near the time of the crash, the truck driver stated that he was traveling westbound on Interstate 10 in the right lane. Traffic was flowing well. As he approached the crash site, he observed traffic slowing and a police vehicle on the right side of the highway with its emergency lights on about 5 miles ahead. As he reached stopped traffic, he changed lanes to the left and stopped. While stopped, the driver stated he set the parking brake on the tractor and the trailer and turned on his hazard lights. The truck driver stated that he heard on the citizens band (CB) radio that the interstate had been shut down but wasn’t sure why.²⁸ After being stopped for 25 to 30 minutes, traffic began to move again. The driver stated that as he released the parking brake and placed the transmission into gear, he felt the impact of the crash. The driver stated he was knocked unconscious from the force of the impact. When he regained consciousness, someone was rendering aid to him.

It should be noted that roadway evidence from the crash site indicates that the parking brake on the truck and tractor were set when the crash occurred. Additionally, video footage from a California Highway Patrol car indicates that traffic was flowing normally around the stopped

²⁷ Human Performance Factors Attachment 7 – 2015 International Driver Interview Transcript.

²⁸ The Citizens Band (CB) Radio Service is a private, two-way, short-distance voice communications service for personal or business activities of the general public. Available from: <https://www.fcc.gov/general/citizens-band-cb-service>.

accident truck when the crash occurred. GPS data from the accident trucks indicates that the truck had been stopped for about four minutes when the crash occurred.²⁹

3.2. Witness #1 Interview

On October 26, 2016 California Highway Patrol investigators conducted a telephone interview of a motorist who observed the accident truck prior to the crash.³⁰ The witness states that he was traveling westbound on Interstate 10 near Indian Canyon Drive. He was traveling about 70 miles per hour and described traffic as light and the environment as dark. The witness describes seeing a lot of red blinking lights from nearby windmills. At some point the witness noticed amber lights and recognized that they were on a stopped semi-truck in his lane. The witness stated that he abruptly changed lanes to the left and went around the truck. The witness stated that as he approached the truck he was confused by the lighting and was not immediately able to determine that the truck was stopped. After passing the stopped truck, the witness stated that he continued to watch the truck in his rearview mirror and did not see it move. The witness described seeing the rear lights of the trailer and the running lights along the side of the trailer. He did not see the hazard lights on.

4. Environmental Factors

Global Positioning System (GPS) coordinates were utilized to determine relevant environmental conditions for the accident location.

Latitude: N 33.90521

Longitude: W -116.557277

4.1. Weather Information

Historical data for weather station Palm Springs, International Airport (KPSP) located approximately 5 miles from the crash site, was retrieved and examined. Observations for October 23, 2016, near the time of the accident, are shown in **Table 7**.³¹

Table 7. Data from Weather Station KPLP Palm Springs, CA.

Time (EST)	4:53 a.m.	5:53 a.m.
Temperature	69.1° F	66.9° F
Dew Point	28.0° F	36.0° F
Humidity	22%	32%
Pressure	29.91 in	29.92 in
Visibility	10 mi	10 mi
Wind Dir.	Calm	Calm
Wind Speed	Calm	Calm
Wind Gust Speed	N/A	N/A
Precipitation	N/A	N/A
Conditions	Clear	Clear

²⁹ For more information, see the Reconstruction Group Chairman Factual Report in the docket for this investigation.

³⁰ Human Performance Factors Attachment 8 – Witness Interview Transcript.

³¹ Data obtained from <http://www.wunderground.com>.

4.2. Astronomical Data for October 23, 2016

Using the GPS coordinates listed above, astronomical data for the accident location and date was downloaded from the United States Naval Observatory (USNO). Downloaded astronomical data is summarized in **Table 8** below.

Table 8 Sun and Moon Date for Palm Springs, CA for October 23, 2016

Event	Time
ACCIDENT	5:16 a.m.
Begin civil twilight ³²	6:33 a.m.
Sunrise	6:58 a.m.
Sun Transit	12:30 p.m.
Sunset	6:02 p.m.
End civil twilight	6:28p.m.

E. DOCKET MATERIAL

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

LIST OF ATTACHMENTS

Human Performance Factors Attachment 1 – 1996 MCI Driver California Driver License Record

Human Performance Factors Attachment 2 – 1996 MCI Driver Forensic Toxicology Report

Human Performance Factors Attachment 3 – Motorcoach Driver’s Son Interview Transcript

Human Performance Factors Attachment 4 – 1996 MCI Driver’s Cellphone Records

Human Performance Factors Attachment 5 – 2015 International Driver Georgia Driver License Record

Human Performance Factors Attachment 6 – 2015 International Driver Post-crash Toxicology Report

Human Performance Factors Attachment 7 – 2015 International Driver Interview Transcript

Human Performance Factors Attachment 8 – Witness Interview Transcript.

END OF INFORMATION

Kenneth J Bragg

Senior Human Performance Investigator

³² Morning civil twilight begins when the geometric center of the sun is 6° below the horizon and ends at sunrise.