



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

July 21, 2021

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: RRD21LR007; Vail, AZ

Date and time: January 31, 2021

Injuries: 1 fatal

B. GROUP IDENTIFICATION

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

1. Purpose

This investigation was performed to evaluate the tamper operator and roadway worker for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

2. Methods

For the deceased roadway worker, the autopsy report, toxicology findings, and post accident emergency treatment records were obtained and reviewed. For the uninjured tamper operator, the pre – and post-accident toxicology testing was reviewed. For both workers, the railroad’s occupational medical records and drug and alcohol testing results were reviewed as well as the investigator’s preliminary report. Relevant regulation and medical literature were reviewed as appropriate.

As non-safety sensitive employees, both railroaders were exempt from occupational comprehensive medical history taking or most medical examinations. In addition, “The pre-employment drug testing requirements does not apply to ... maintenance-of-way employees who were performing duties for a railroad before June 12, 2017.” (49 CFR § 219.501 (e)) As both employees were hired before 2017, no pre-employment drug testing had been performed.

Roadway worker

Occupational Medical Records

According to the Union Pacific occupational medical records, the 60 year old male roadway worker had undergone hearing testing and respirator fit testing annually from 2013 through 2019. Other than questions related to noise exposure and cardiovascular health, no health history was obtained during these sessions. The roadway worker did not answer any of the questions about cardiovascular issues in the positive and passed his respirator fit test each time. He had some mild hearing loss bilaterally.

Occupational Drug and Alcohol Testing

When the roadway worker was hired, pre-employment drug testing was not required or performed. However, he underwent routine random Department of Transportation mandated drug testing in May 2018 and the result was negative.¹ No other pre-accident drug or alcohol testing was performed.

Post Accident Emergency Medical Treatment Records

Records from the roadway worker's emergency treatment following the accident were obtained and reviewed. He arrived at the hospital able to speak and primarily complaining of leg pain. He reported having type 2 diabetes, high blood pressure, and high cholesterol.

Fentanyl, an opioid pain medication, was administered for pain. However, the roadway worker's blood pressure was dangerously low when he arrived and although he was actively treated by the trauma team, he developed cardiac arrest and could not be resuscitated

An ethanol blood test and a clinical urine drug screen obtained on arrival to the hospital were negative.

Autopsy

According to the autopsy issued by the Pima County Sheriff's Office, the cause of death was blunt force injuries and the manner of death was accident. Severe atherosclerotic stenosis (not quantified) of the right coronary artery was identified without any evidence of scar from previous ischemia.

¹ In 2018, DOT drug testing was limited to urine testing for amphetamine, methamphetamine, cocaine metabolites (benzoylecgonine), opiates (codeine, morphine, and the heroin metabolite 6-acetylmorphine), phencyclidine, methylenedioxyamphetamine (MDMA), methylenedioxyamphetamine (MDA), methylenedioxyethylamphetamine (MDEA), and the marijuana metabolite delta-9-tetrahydrocannabinol-9-carboxylic acid (THCA).

Post Accident Toxicology

Toxicology tests performed by Quest Diagnostics as required by the Federal Railroad Administration on urine and cavity blood obtained during the autopsy were negative for all tested-for substances except opioids; confirmatory testing identified fentanyl in urine at 4.35 ng/ml and in blood at 0.74 ng/ml.² Review of the results by the Medical Review Officer found that the fentanyl had been administered after the accident and the final result was labeled “negative.”

Toxicology testing performed by Axis Forensic Toxicology at the request of the Sheriff’s Office identified fentanyl at 0.90 ng/ml in a blood specimen obtained at the hospital.

Tamper Operator

Occupational Medical Records

According to the Union Pacific occupational medical records, the 53 year old male tamper operator had undergone hearing testing and respirator fit testing annually from 2013 through 2020. Other than questions related to noise exposure and cardiovascular health, no health history was obtained during these sessions. The tamper operator did not report any significant answer in the positive to any questions about cardiovascular issues and passed his respirator fit test each time. He had some mild hearing loss bilaterally.

In May 2020, the tamper operator was diagnosed with Covid-19 and then hospitalized in June 2020. Initially, he required oxygen but gradually improved and returned home. During his hospitalization, he was treated for high blood pressure, high cholesterol, and type 2 diabetes that was identified during the hospitalization. His level of functioning was reported as back to baseline when he was medically cleared and returned to work without restrictions on September 19, 2020.

Occupational Drug and Alcohol Testing

When the tamper operator was hired, pre-employment drug testing was not required or performed. However, he underwent routine random Department of Transportation mandated drug testing in March 2018 and the result was negative.³ No other pre-accident drug or alcohol testing was performed.

² FRA post-accident toxicology testing includes a drug screen of urine. If there are positive findings, confirmation testing is performed on blood. Testing includes drugs in the following categories: amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, opioids, phencyclidine, and sedating antihistamines.

³ In 2018, DOT routine drug testing was limited to urine testing for amphetamine, methamphetamine, cocaine metabolites (benzoylecgonine), opiates (codeine, morphine, and the heroin metabolite 6-acetylmorphine), phencyclidine, methylenedioxymethamphetamine (MDMA),

Post Accident Toxicology Testing

Toxicology tests performed by Quest Diagnostics as required by the Federal Railroad Administration on urine and blood obtained the day of the accident were negative for all tested-for substances.²

D. SUMMARY OF MEDICAL FINDINGS

The 61 year old roadway worker had not reported any cardiovascular problems during his respirator fit testing and had mild hearing loss. During his post accident emergency care, he reported having high blood pressure, type 2 diabetes, and high cholesterol. During his emergency care, fentanyl was administered to control his pain. Post accident toxicology testing identified fentanyl in blood and urine, but no other tested-for substances.

The 53 year old tamper operator had not reported any cardiovascular problems during his respirator fit testing and had mild hearing loss. Between May and September 2020, the tamper operator was treated for severe Covid-19. During his hospitalization for Covid-19, he was also treated for high blood pressure and high cholesterol as well as type 2 diabetes that was first diagnosed during the admission. His level of functioning was reported as back to baseline when he was medically cleared and returned to work without restrictions on September 19, 2020. Toxicology tests performed by Quest Diagnostics as required by the Federal Railroad Administration on urine and blood obtained the day of the accident were negative for all tested-for substances.

methylenedioxyamphetamine (MDA), methylenedioxyethylamphetamine (MDEA), and the marijuana metabolite delta-9-tetrahydrocannabinol-9-carboxylic acid (THCA).