



# NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering  
Washington, DC

## Medical Factual Report

**June 6, 2018**

Mary Pat McKay, MD, MPH  
Chief Medical Officer

### **A. ACCIDENT: DCA17FR009**

**Accident Type:** Track worker fatality  
**Location:** Queens Village, NY  
**Date:** June 10, 2017  
**Time:** 10:12 am  
**Carrier:** Long Island Railroad (LIRR)

### **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 track worker for any medical conditions, the use of any medications/illicit drugs, and the presence of any toxins.

#### 2. Methods

The occupational medical records, autopsy report, toxicology findings, and the investigator's reports were reviewed.

##### Occupational Medical Records - LIRR

Occupational records from the 3 years preceding the accident were reviewed. During that time, the track worker had a period of being out of work for an EAP issue. He reported no medical conditions and was evaluated and returned to work on September 22, 2015. At that time, his drug and alcohol testing (completed after being out of work for less than 60 days) was performed and was negative.

### Autopsy

According to the autopsy performed by the Office of the Chief Medical Examiner, City of New York, the cause of death was multiple blunt force injuries and the manner of death was accident. No examination of the brain, heart or other organs for natural disease was carried out due to the extent of injuries.

### Toxicology

Toxicology testing performed by the Office of the Chief Medical Examiner, City of New York, Forensic Toxicology Laboratory identified 0.02 gm/100 gm of ethanol and cocaine in lung tissue. Cocaine was not identified in muscle tissue.<sup>1</sup>

Toxicology testing performed by Quest Diagnostics at the request of the FRA identified 0.528 gm/100 gm of ethanol in liver tissue. Retesting identified 0.694 gm/100 gm of ethanol in liver tissue.

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified no tested-for substances including no ethanol in muscle.

Ethanol is the intoxicant commonly found in beer, wine, and liquor. It acts as a central nervous system depressant. After ingestion, at low doses, it impairs judgment, psychomotor functioning, and vigilance; at higher doses it can cause coma and death. Ethanol may be produced in body tissues by microbial activity after death.<sup>2</sup> Ethanol may also be introduced into post mortem tissues by using ethanol containing cleaning solutions.

Cocaine is a Schedule II controlled substance available for use topically in small amounts to numb the mouth, nasopharynx, or eyes for various medical or dental procedures.<sup>3</sup> When misused by smoking, injecting, or snorting, it is a strong central nervous system stimulant. Initial effects include: euphoria, excitation, general arousal, dizziness, increased focus and alertness. At higher doses, effects may include psychosis, confusion, delusions, hallucinations, fear, antisocial behavior, and aggressiveness. Late effects, beginning within 1 to 2 hours after use, include: dysphoria, depression, agitation, nervousness, drug craving, general central nervous system depression, fatigue, and insomnia. Additional performance effects are expected after higher doses, with chronic ingestion, and during drug withdrawal including agitation, anxiety, distress, inability to focus on

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<sup>1</sup> Gm/100 gm are the units for ethanol in solid tissue. These numbers convert directly to gm/dl levels in blood.

<sup>2</sup> Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 12/02/2017.

<sup>3</sup> National Institutes of Health. US National Library of Medicine. DailyMed. Cocaine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=24faa247-fe12-4574-881d-445b078b3e87> Accessed 6/6/2018.

divided attention tasks, inability to follow directions, confusion, hostility, time distortion, and poor balance and coordination.<sup>4</sup> Cocaine is lipophilic and tends to be concentrated in liver, lung, and brain while levels tend to be much lower in muscle and blood.<sup>5</sup>

#### **D. SUMMARY OF MEDICAL FINDINGS**

According to the autopsy performed by the Office of the Chief Medical Examiner, City of New York, the cause of death was multiple blunt force injuries and the manner of death was accident.

Toxicology testing performed by the Office of the Chief Medical Examiner, City of New York, Forensic Toxicology Laboratory identified 0.02 gm/100 gm of ethanol and cocaine in lung tissue. Cocaine was not identified in muscle tissue.

Toxicology testing performed by Quest Diagnostics at the request of the FRA identified 0.528 gm/100 gm of ethanol in liver tissue. Retesting identified 0.694 gm/100 gm of ethanol in liver tissue.

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified no tested-for substances in muscle.

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<sup>4</sup> National Highway Traffic Safety Administration Drugs and Human Performance FACT SHEETS: Cocaine <http://www.nhtsa.gov/people/injury/research/job185drugs/cocain.htm> Accessed 07/31/2015

<sup>5</sup> Rees, KA. The Distribution of Opiates, Cocaine and their Metabolites in Skeletal Muscle Tissue and Vitreous Humour as an Aid to Post-mortem Toxicological Interpretation. PhD Thesis at Bournemouth University, 2011. Available at: [http://eprints.bournemouth.ac.uk/18832/1/Rees%2C\\_Kelly\\_Ph.D\\_2011.pdf](http://eprints.bournemouth.ac.uk/18832/1/Rees%2C_Kelly_Ph.D_2011.pdf) Accessed 4/24/2018.