



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

THESE RECORDS MAY BE RELEASABLE UNDER THE FOIA REQUEST 15  
DAYS AFTER SIGNATURE DATE UNLESS WE HEAR OTHERWISE FROM  
FAA NTSB COUNSEL

Mike Monroney  
Aeronautical Center

P.O. Box 25082  
Oklahoma City, Oklahoma 73125

Thursday, December 27, 2018

National Transportation Safety Board  
4760 Oakland Street, Suite 500  
Denver, CO 80239

ACCIDENT # 0227    INDIVIDUAL#: 001    NAME: [REDACTED]    MODE: AVIATION  
DATE OF ACCIDENT 11/09/2018    DATE RECEIVED 11/14/2018    PUTREFACTION: No  
N # 91770    NTSB # WPR19FA022    CAMI REF # 201800227001  
LOCATION OF ACCIDENT Guthrie Center, IA  
SPECIMENS Bile, Blood (Cavity), Brain, Gastric, Heart, Kidney, Liver, Lung, Muscle, Spleen, Vitreous

### FINAL FORENSIC TOXICOLOGY FATAL ACCIDENT REPORT

**CARBON MONOXIDE:** The carboxyhemoglobin (COHb) saturation is determined by spectrophotometry with a 10% cut off and confirmed by chromatography.

- 49% CARBOXYHEMOGLOBIN detected in Blood (Cavity)

**CYANIDE:** The presence of cyanide is screened by Conway Diffusion, when the COHb level is equal to or greater than 10% or upon special request. Cyanides are quantitated by spectrophotometry and confirmed by chromatography. The reporting cutoff for cyanide is 0.25 ug/mL. Normal blood cyanide concentrations are less than 0.15 ug/mL, while lethal concentrations are greater than 3 ug/mL.

- NO CYANIDE detected in Blood (Cavity)

**VOLATILES:** The volatile concentrations are determined by headspace gas chromatography at a cut off of 10 mg/dL. Where possible, positive ethanol values are confirmed by Radiative Energy Attenuation.

- NO ETHANOL detected in Blood (Cavity)

**DRUGS:** Specimens are analyzed using immunoassay, chromatography, mass spectrometry, or spectrophotometry. Concentrations (ug/mL) at or above those in ( ) can be determined for, but not limited to, the following drugs: amphetamines (0.010), opiates (0.010), marihuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), and antihistamines (0.020). Drugs and/or their metabolites, that are not impairing or abused, may be reported from the initial tests. See the CAMI Drug Information Web Site for additional information (<http://jag.cami.jccbi.gov/toxicology/>).

- NO DRUGS listed above detected in Blood (Cavity)

[REDACTED]  
Russell Lewis, Ph.D., F-ABFT  
Supervisor, Forensic Sciences  
Bioaeronautical Sci. Research Lab  
CAMI, FAA

c=US, o=U.S. Government, ou=AMC, ou=AMC,  
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Denver, CO 80239

ACCIDENT # 0227    INDIVIDUAL#: 002    NAME: [REDACTED]    MODE: AVIATION  
DATE OF ACCIDENT 11/09/2018    DATE RECEIVED 11/14/2018    PUTREFACTION: No  
N # 91770    NTSB # WPR19FA022    CAMI REF # 201800227002  
LOCATION OF ACCIDENT Guthrie Center, IA  
SPECIMENS Blood (Cavity)

### FINAL FORENSIC TOXICOLOGY FATAL ACCIDENT REPORT

**CARBON MONOXIDE:** The carboxyhemoglobin (COHb) saturation is determined by spectrophotometry with a 10% cut off and confirmed by chromatography.

- 41% CARBOXYHEMOGLOBIN detected in Blood (Cavity)

**CYANIDE:** The presence of cyanide is screened by Conway Diffusion, when the COHb level is equal to or greater than 10% or upon special request. Cyanides are quantitated by spectrophotometry and confirmed by chromatography. The reporting cutoff for cyanide is 0.25 ug/mL. Normal blood cyanide concentrations are less than 0.15 ug/mL, while lethal concentrations are greater than 3 ug/mL.

- NO CYANIDE detected in Blood (Cavity)

**VOLATILES:** The volatile concentrations are determined by headspace gas chromatography at a cut off of 10 mg/dL. Where possible, positive ethanol values are confirmed by Radiative Energy Attenuation.

- NOT PERFORMED

**DRUGS:** Specimens are analyzed using immunoassay, chromatography, mass spectrometry, or spectrophotometry. Concentrations (ug/mL) at or above those in ( ) can be determined for, but not limited to, the following drugs: amphetamines (0.010), opiates (0.010), marijuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), and antihistamines (0.020). Drugs and/or their metabolites, that are not impairing or abused, may be reported from the initial tests. See the CAMI Drug Information Web Site for additional information (<http://jag.cami.jccbi.gov/toxicology/>).

- NOT PERFORMED

**-Notes:**

Samples from passengers are analyzed for CARBON MONOXIDE (COHb) only in cases of fire, and CYANIDE when COHb is equal to or greater than 10%, or upon special request, provided suitable blood samples were submitted.

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[REDACTED]  
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CAMI, FAA



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ACCIDENT # 0227    INDIVIDUAL#: 003    NAME: [REDACTED]    MODE: AVIATION  
DATE OF ACCIDENT 11/09/2018    DATE RECEIVED 11/14/2018    PUTREFACTION: No  
N # 91770    NTSB # WPR19FA022    CAMI REF # 201800227003  
LOCATION OF ACCIDENT Guthrie Center, IA  
SPECIMENS Bile, Blood (Cavity), Brain, Gastric, Heart, Kidney, Liver, Lung, Muscle, Spleen

### FINAL FORENSIC TOXICOLOGY FATAL ACCIDENT REPORT

**CARBON MONOXIDE:** The carboxyhemoglobin (COHb) saturation is determined by spectrophotometry with a 10% cut off and confirmed by chromatography.

- 58% CARBOXYHEMOGLOBIN detected in Blood (Cavity)

**CYANIDE:** The presence of cyanide is screened by Conway Diffusion, when the COHb level is equal to or greater than 10% or upon special request. Cyanides are quantitated by spectrophotometry and confirmed by chromatography. The reporting cutoff for cyanide is 0.25 ug/mL. Normal blood cyanide concentrations are less than 0.15 ug/mL, while lethal concentrations are greater than 3 ug/mL.

- NO CYANIDE detected in Blood (Cavity)

**VOLATILES:** The volatile concentrations are determined by headspace gas chromatography at a cut off of 10 mg/dL. Where possible, positive ethanol values are confirmed by Radiative Energy Attenuation.

- NO ETHANOL detected in Blood (Cavity)

**DRUGS:** Specimens are analyzed using immunoassay, chromatography, mass spectrometry, or spectrophotometry. Concentrations (ug/mL) at or above those in ( ) can be determined for, but not limited to, the following drugs: amphetamines (0.010), opiates (0.010), marihuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), and antihistamines (0.020). Drugs and/or their metabolites, that are not impairing or abused, may be reported from the initial tests. See the CAMI Drug Information Web Site for additional information (<http://jag.cami.jccbi.gov/toxicology/>).

- NO DRUGS listed above detected in Blood (Cavity)

[REDACTED]  
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CAMI, FAA

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Friday, December 28, 2018

National Transportation Safety Board  
4760 Oakland Street, Suite 500  
Denver, CO 80239

ACCIDENT # 0227    INDIVIDUAL#: 004    NAME: [REDACTED]    MODE: AVIATION  
DATE OF ACCIDENT 11/09/2018    DATE RECEIVED 11/14/2018    PUTREFACTION: No  
N # 91770    NTSB # WPR19FA022    CAMI REF # 201800227004  
LOCATION OF ACCIDENT Guthrie Center, IA  
SPECIMENS Blood (Heart)

### FINAL FORENSIC TOXICOLOGY FATAL ACCIDENT REPORT

**CARBON MONOXIDE:** The carboxyhemoglobin (COHb) saturation is determined by spectrophotometry with a 10% cut off and confirmed by chromatography.

- 20% CARBOXYHEMOGLOBIN detected in Blood (Heart)

**CYANIDE:** The presence of cyanide is screened by Conway Diffusion, when the COHb level is equal to or greater than 10% or upon special request. Cyanides are quantitated by spectrophotometry and confirmed by chromatography. The reporting cutoff for cyanide is 0.25 ug/mL. Normal blood cyanide concentrations are less than 0.15 ug/mL, while lethal concentrations are greater than 3 ug/mL.

- NOT PERFORMED

-Notes:

Insufficient specimen for cyanide analysis.

**VOLATILES:** The volatile concentrations are determined by headspace gas chromatography at a cut off of 10 mg/dL. Where possible, positive ethanol values are confirmed by Radiative Energy Attenuation.

- NOT PERFORMED

**DRUGS:** Specimens are analyzed using immunoassay, chromatography, mass spectrometry, or spectrophotometry. Concentrations (ug/mL) at or above those in ( ) can be determined for, but not limited to, the following drugs: amphetamines (0.010), opiates (0.010), marijuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), and antihistamines (0.020). Drugs and/or their metabolites, that are not impairing or abused, may be reported from the initial tests. See the CAMI Drug Information Web Site for additional information (<http://fag.cami.jccbi.gov/toxicology/>).

- NOT PERFORMED

-Notes:

Samples from passengers are analyzed for CARBON MONOXIDE (COHb) only in cases of fire, and CYANIDE when COHb is equal to or greater than 10%, or upon special request, provided suitable blood samples were submitted.

Friday, December 28, 2018

CONTINUATION OF REF#: 201800227004 - [REDACTED]

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