



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

**SURVIVAL FACTORS GROUP CHAIRMAN'S  
FACTUAL REPORT**

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**A. CRASH INFORMATION**

Location: State Highway 2 (SH-2), Randolph, in Coos County, New Hampshire

Vehicle 1: 2016 Ram 2500 Crew Tradesman Pick-up pulling a flatbed trailer

Operator 1: 23-year-old male (no injuries)

Vehicle #2: 1998 Harley Davidson FLHT

Operator #2: 59-year-old male (deceased)

Vehicle #3: 2019 Harley Davidson FLTRXS

Operator #3: 48-year-old male (no injuries)

Passenger #3: 47-year-old female (no injuries)

Vehicle #4: 2006 Harley Davidson FLSTI

Operator #4: 45-year-old male (injured)

Vehicle #5: 2012 Harley Davidson FLHTCUSE7

Operator #5: 58-year-old male (deceased)

Vehicle #6: 2012 Harley Davidson FLSTI

Operator #6: 57-year-old male (injured)

Vehicle #7: 2005 Harley Davidson FLHTCU

Operator#7: 62-year-old male (deceased)

Vehicle #8: 2007 Harley Davidson FLHTCU

Operator #8: 58-year-old male (deceased)

Passenger #8: 58-year-old female (deceased)

Vehicle #9: 2012 Harley Davidson FLHTK EL

Operator #9: 45-year-old male (deceased)  
Passenger #9: 42-year-old female (deceased)  
Vehicle #10: 2015 Harley Davidson FLST  
Operator #10: 52-year-old female (injured)  
Vehicle #11: 2007 Harley Davidson FLHRSE3  
Operator #11: 51-year-old male (injured)  
Vehicle #12: 2019 Harley Davidson FLXH  
Operator #12: 53-year-old male (not injured)  
Vehicle #13: 2006 Harley Davidson FLTRI  
Operator #13: 70-year-old male (injured)  
Operator #13: 69-year-old female (injured)  
Vehicle #14: 2015 Harley Davidson FLHTKS  
Operator #14: 46-year-old male (not injured)  
Passenger #14: 48-year-old female (injured)  
Date: Friday June 21, 2019  
Time: 6:26 p.m. Eastern Daylight Time  
NTSB #: **HWY19MH010**

## **B. SURVIVAL FACTORS GROUP**

Ronald A. Kaminski, Survival 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 of the Investigation* in the docket for this case.

## **D. DETAILS OF THE SURVIVAL FACTORS INVESTIGATION**

The survival factors investigation focused on the involved impounded vehicles, the sustained injuries, motorcycle safety equipment, and the emergency response. There was a total of fifteen motorcycles in the motorcycle formation prior to the crash; however only twelve motorcycles were towed from the scene with the other motorcycles being driven away from the scene. It should be noted that as a result of this crash, a post-crash fire ensued involving vehicles #1, 8, and 9.

All vehicle inspections were conducted at John's Wrecker Service in Pembroke, NH on June 26, 2019.

### **1. 2018 Ram 2500 Pickup Truck**

The striking vehicle was a 2016 Ram 2500 Pickup truck in combination with a 2015 Quality Trailers flatbed trailer. The Ram was occupied by a 23-year old male driver.

#### **1.1. 2016 Ram 2500 Crew Tradesman Pickup Truck Exterior Deformation**

The Ram 2500 sustained deformation to the front end and right side as well as being mostly consumed in the post-crash fire. The initial impact was to the front end of the pickup truck and there were several areas of deformation on the front end, but the damage sequence could not be determined. There was significant deformation to the front bumper and engine compartment as shown in **Figure 1**. At the time of examination, the hood of the pickup truck was found open and flipped back against the windshield frame.<sup>1</sup> As shown in **Figure 2**, the right-side deformation was moderate and appeared to have been the result of several impacts, the sources of which could not be determined. The driver's door was open at the time of the inspection. The front passenger door had been jammed shut and was pried open by the New Hampshire State Police during their post-crash inspection.

Deformation to the front end resulted in a maximum of approximately 20 inches of crush in the aft direction, across the front end. The frontal impacts resulted in a 10-inch difference between the left side (144 inches) and right side (154 inches) wheelbase with the manufacturer's original wheelbase listed at 149 inches. Deformation to the right side extended from the right front tire to just forward of the right rear wheel. Maximum crush to the right side was estimated at 18 inches.

All the windows including the windshield were missing. Measurements and additional damage descriptions are located in the Vehicle Group Chairman's Factual Report.

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<sup>1</sup> The windshield itself was missing due to fire.



**Figure 1.** Frontal view of deformation to Ram 2500. **Figure 2.** Right side view of deformation to Ram 2500.

### **1.2 2016 Ram 2500 Crew Tradesman Pickup Truck Interior Damage**

The non-metallic parts of the interior of the Ram pickup were totally consumed in the post-crash fire. As shown in **Figures 3 and 4**, the only remaining interior components were the driver seat frame and fold down center armrest. The driver's seatbelt latch plate and buckle were not found in the debris.



**Figure 3.** Interior view of fire damage to Ram looking rear to front. **Figure 4.** Ram interior looking front to rear.

The interior inspection of the Ram revealed that the front right passenger seat and the rear bench seat had been removed to accommodate an improvised sleeping area in what was once the back seat.

## **2. Inspection of Motorcycles**

At the time of inspection 9 of the 13 motorcycles were available for examination.

## 2.1. 1998 Harley Davidson FLHT Damage

This motorcycle was occupied by a 59-year-old, male driver who was the lead rider in the formation. It is unknown if the driver was wearing a helmet at the time of the crash, but he sustained fatal injuries.

The small headlight on the right side was missing its lens and was twisted in its mount. The windshield was missing, as was the right rearview mirror lens. The right floorboard was displaced upward. The front fender had contact damage to the right side and to the rear. The motorcycle was missing its seat as shown in **Figure 5**. The left handlebar was folded in half. The right rear floorboard was displaced downward. The fiberglass on the right side was damaged and torn. The top saddlebag was missing its lid and there was damage to the lid of the right-side saddlebag. The left side saddle bag was missing. The left floorboard and crash bar were displaced, and the left side tailpipe was detached. There was damage to the left side of the fuel tank. The transmission cover on the left side was fractured.



**Figure 5.** Right side overhead view of 1998 Harley Davidson Electric Glide FLHT.

## 2.2. 2019 Harley Davidson FLTRXS Damage

This motorcycle was occupied by a 48-year-old, male driver and a 47-year-old female passenger. The driver and passenger were both wearing United States Department of Transportation (US-DOT) approved helmets at the time of the crash. The driver and passenger were both uninjured.

This motorcycle was driven from the scene and not available for post-crash inspection.

### 2.3. 2006 Harley Davidson FLSTI Damage

This motorcycle was occupied by a 45-year-old, male driver. The driver was wearing a US-DOT approved helmet at the time of the crash and sustained serious injuries.

The left handlebar was sheared off as shown in **Figure 6**. The headlight assembly was broken, and the right mirror was torn from its mount. The throttle control on the right handlebar was broken. The right front turn signal was sheared off its mount. The right floorboard was displaced upward. The front fender was torn and deformed. The rear fender was also damaged and dented. The left rear turn signal was sheared off. The back of the passenger seat was displaced aft. The kickstand and gearshift were both sheared away from the frame. The left side of the transmission housing was fractured. The left rear saddle bag was torn and damaged.



**Figure 6.** Right side overhead view of 2006 Harley Davidson FLSTI.

### 2.4. 2012 Harley Davidson FLHTCUSE7 Damage

This motorcycle was occupied by a 58-year-old, male. It is unknown if the driver was wearing a helmet at the time of the crash, but he sustained fatal injuries.

The front tire was missing from the motorcycle and the forks were fractured at the shock absorbers as shown in **Figure 7**. The instrument cluster was displaced from its mount. The handlebars were twisted and deformed. The right crash bar was displaced rearward and the right floorboard was displaced upward. All saddle bags were broken or displaced. The left front brake handle was twisted. The windshield was missing from the bike.



**Figure 7.** Right side overhead view of 2012 Harley Davidson FLHTKCUSE7.

### **2.5. 2012 Harley Davidson FLSTI Damage**

This motorcycle was occupied by a 57-year-old male driver. The driver was wearing a helmet at the time of the crash and sustained minor injuries.

The motorcycle was missing its windshield as shown in **Figure 8**. The right front turn signal and light were broken away from their mounts. There was contact damage to the front fender and the front tire pressure was low.



**Figure 8.** Front left angle view of 2012 Harley Davidson FLSTI

## 2.6. 2005 Harley Davidson FLHTCU Damage

This motorcycle was occupied by a 62-year-old male. The driver was wearing a helmet at the time of the crash and sustained fatal injuries.

The front fender was torn and severely damaged. The left handlebar was sheared off and missing. The left floorboard was displaced upward and there was contact damage to the left and right sides of the fuel tank from the left floorboard. The left tail pipe was damaged. The seat was torn from its mount and the left saddlebag was fractured and missing the lid. The instrument cluster was torn away from the handlebars and missing. The headlight was missing, and both turn signals were torn from their mounts. The front rim was deformed, and the tire was flat as shown in **Figure 9**. The right floorboard was displaced upward. The clutch lever was missing, and the left crash bar was displaced rearward. The left side transmission case, muffler, and highway peg were scratched. The left rear turn signal was missing. The right-side saddle bag was damaged. The right rear passenger floorboard was deformed.



**Figure 9.** Overhead side view of 2005 Harley Davidson FLHTCU

## 2.7. 2007 Harley Davidson FLHTCU Damage

This motorcycle was occupied by a 58-year-old male driver and a 58-year-old female passenger. The driver and passenger were both wearing helmets at the time of the crash and both sustained fatal injuries.

As shown in **Figure 10**, the front of this motorcycle sustained burn damage from the post-crash fire. The front tire and wheel assembly were fractured at the shock absorbers and were missing. The seat was partially melted. The rear tire sustained fire damage. The left crash bar was displaced inward to the frame. The left floorboard was displaced upward. The instrument cluster was burned to the point that only wiring was left. The motorcycle was missing its windshield. The rear passenger back rest was torn from the bike. All saddle bags were broken. The fuel tank was damaged. Both handlebars were sheared from the frame.





**Figure 10.** Right side view of 2007 Harley Davidson FLHTCU.

### **2.8. 2012 Harley Davidson FLHTK EL Damage**

This motorcycle was occupied by a 45-year-old, male driver and a 42-year-old female passenger. It is unknown if the driver or passenger were wearing a helmet at the time of the crash, but they both sustained fatal injuries.

This motorcycle was severely damaged in the crash and the post-crash fire as shown in **Figure 11**. It was missing its front tire and wheel assemble entirely. The forks were sheared off at the shock absorbers. The instrument cluster was burned to the wires. There was damage to all sides of the fuel tank. The seat was consumed in the fire. Both side crash bars were displaced and deformed. The rear tire was consumed in the fire.



**Figure 11.** Overhead view of left side of 2012 Harley Davidson FLHTK EL.

## 2.9. 2015 Harley Davidson FLST Damage

This motorcycle was occupied by a 52-year-old female driver. The driver was wearing a non-US-DOT approved cap at the time of the crash. The driver sustained minor injuries.

There were minor scrapes to the right brake handle and right crash bar. As shown in **Figure 12**, the headlight lens, windshield, right saddle bag, and right mirror also sustained minor scrapes. There was a minor dent in the front fender.



**Figure 11.** Left side view of 2015 Harley Davidson FLST.

## 2.10.2007 Harley Davidson FLHRSE3 Damage

This motorcycle was occupied by a 51-year-old male. The driver was wearing a US-DOT approved helmet at the time of the crash and sustained minor injuries.

The left clutch handle sustained bent. The left side of the fuel tank had a dent and scratches. There was damage to the front fender and a dent in the headlight area. The handlebars were twisted out of position and had several scrapes on the right handlebar. The clutch cable was torn. The left foot peg was displaced inward. The left rear saddle bag was damaged. **Figure 13** shows the damaged 2007 Harley Davidson FLHRSE3 at the tow facility.



**Figure 13.** Front left angle view of 2007 Harley Davidson FLHRSE3.

### **2.11.2019 Harley Davidson FLXH**

This motorcycle was occupied by a 53-year-old male driver and reported no injury. Driver's helmet use is unknown.

This motorcycle was driven from the scene and was not available for post-crash inspection.

### **2.12.2006 Harley Davidson FLTRI**

This motorcycle was occupied by a 70-year-old male driver and a 69-year-old female passenger. The driver and passenger were both wearing US-DOT approved  $\frac{3}{4}$  face helmets at the time of the crash and both sustained minor injuries.

This motorcycle was driven from the scene and was not available for post-crash inspection.

### **2.13. 2015 Harley Davidson FLHTKS**

This motorcycle was occupied by a 46-year-old male driver and a 48-year-old female passenger. The driver and passenger were both wearing US-DOT approved helmets at the time of the crash. The driver was not injured but the passenger sustained minor injuries.

This motorcycle was driven from the scene and was not available for post-crash inspection.

## **3. State Oversight of Motorcycle Safety**

State oversight of motorcycle requirements falls under the New Hampshire Department of Transportation, Department of Motor Vehicles (DMV).

### 3.1. New Hampshire Motorcycle Safety

Motorcyclists have the same rights and responsibilities on public roads as other highway users. Anyone who operates a motorcycle in New Hampshire must have a current, valid motorcycle license or a New Hampshire motorcycle permit.<sup>2</sup>

### 3.2. Motorcycle License Requirements

New Hampshire applicants for a motorcycle license must pass a vision test and provide proof of their fitness to drive a motorcycle. Applicants can prove fitness to operate a motorcycle by either passing a motorcycle Basic Rider Class or by taking a DMV motorcycle skills test.

Applicants for a motorcycle license must be at least 16 years old. Any applicant under 18 years old must successfully complete a motorcycle the Basic Rider Class and provide a parental permission form in order to apply for a motorcycle license or permit.

### 3.3. New Hampshire Helmet Law<sup>3</sup>

New Hampshire has the second highest number of motorcycles per capita in the United States. Between 2010 and 2014 there were 116 motorcycle fatalities; 66% of these motorcyclists were not wearing helmets.

New Hampshire is one of three states, along with Illinois and Iowa, that do not require adult motorcyclists wear helmets. According to New Hampshire law, all riders and passengers under age 18 are required to wear US-DOT-approved helmets. Presently, 19 States and the district of Columbia require all motorcyclists to wear helmets. According to New Hampshire Law;

*Each motorcycle rider education student shall wear a helmet meeting FMVSS 218 requirements. A fine of not more than \$1000 is the sanction for this statute. **Note:** N.H. Rev. Stat. § 265:122 I states that no person under age 18 may drive or ride upon a motorcycle unless he wears State approved protective headgear. However, N.H. Rev. Stat. § 265:122 III states that “If Federal law is altered so that the mandatory wearing of protective headgear on motorcycles by persons less than age 18 is not required as a condition to the receipt by the State of any Federal funds, paragraphs I ...shall be void.” Given that the mandatory wearing of protective headgear on motorcycles by persons less than age 18 is not currently required as a condition to the receipt of State or Federal funds, for practical purposes protective headgear for motorcycle drivers or passengers is not mandatory.*

Sixty percent of motorcyclist fatalities are caused by head injury, and, according to NHTSA research,<sup>4</sup> the use of a helmet offers a motorcyclist the best protection from fatal and non-fatal head injuries.

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<sup>2</sup> Retrieved from: <https://www.nh.gov/safety/divisions/dmv/driver-licensing/motorcycle/training.htm>

<sup>3</sup> <https://www.gencourt.state.nh.us/rsa/html/xxi/265/265-122.htm>

<sup>4</sup> Lawrence, J., Kerns, T., Burch, C., Thomas, A., & Bell, E. (2009). Motorcycle Helmet Use and Head and Facial Injuries: Crash Outcomes in CODES-Linked Data (DOT HS 811 208).

## **Standard No. 218 - Motorcycle Helmets**

*(Effective 3-1-74)*

*This standard establishes minimum performance requirements for helmets designed for use by motorcyclists and other motor vehicle users. The purpose of this standard is to reduce deaths and injuries to motorcyclists and other motor vehicle users resulting from head impacts.*

FMVSS 218 sets standards in three areas of helmet performance: impact attenuation, basically energy absorption; penetration resistance; and the retention system effectiveness.<sup>5</sup>

### **3.4. New Hampshire Eye and Face Protection Law**

New Hampshire does have a law requiring Eye and Face protection which states;

*If a motorcycle is not equipped with a windshield or screen which protects the driver's eyes and face when the driver is sitting erect, the driver shall wear either eyeglasses, goggles or a protective face shield when driving the motorcycle while the motorcycle is in motion.*

## **4. Motorcycle Safety Plans**

### **4.1. New Hampshire Motorcycle Safety Plan**

In 2017 New Hampshire published their 3<sup>rd</sup> Strategic Highway Safety Plan (SHSP) titled, “Driving Towards Zero”.<sup>6</sup> The plan is data driven and identifies statewide goals and strategies targeting highway safety improvements that have been shown to reduce traffic crashes. Since the creation of the New Hampshire’s first plan in 2007, five-year traffic fatalities have trended downward. The SHSP reviews all critical emphasis areas, strategies, and performance measures annually.

The State of New Hampshire also has a statewide safety program titled, “New Hampshire Highway Safety Plan 2018”. The State of New Hampshire, in conjunction with NHTSA and many other local partners, is working to reduce the number of traffic fatalities, injuries and motor vehicle crashes as well as providing their law enforcement partners with funds to assist in accomplishing this task.

The New Hampshire Office of Highway Safety (NHOHS) operates under the executive direction of the governor and is responsible under for the development and implementation of a statewide highway safety program designed to reduce traffic crashes and the resulting deaths, injuries, and property damage. The NHOHS administers federally funded highway safety grant programs and is responsible for planning, implementing, and evaluating highway safety projects that are federally funded. The NHOHS also works to coordinate the highway safety efforts of

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<sup>5</sup>Additionally, the standard requires peripheral vision to be not less than 105° from the helmet midline. Projections from the surface of the helmet (snaps, rivets, etc.) may not exceed 5 mm.

<sup>6</sup> [www.nhdot\\_strategic\\_highway\\_safety\\_plan\\_2017\\_2021\[1\].pdf](http://www.nhdot_strategic_highway_safety_plan_2017_2021[1].pdf)

federal, state, and local organizations within New Hampshire. Two of the goals for the NHOHS related to motorcycles were:

- Reduce motorcycle fatalities by 5%; and
- Reduce unhelmeted motorcycle fatalities by 10%.

#### **4.2. National Highway Traffic Safety Administration Plan**

The National Highway Traffic Safety Administration (NHTSA) currently has a 5-Year Motorcycle Safety Plan published in 2019, titled “*National Highway Traffic Safety Administration’s Motorcycle Safety 5-Year Plan*”.<sup>7</sup> This document is intended to serve as a plan for National Highway Traffic Safety Administration activities to address the safety of motorcyclists. NHTSA aims to work in conjunction with its partners and utilize data-driven approaches to reduce the risk to motorcyclists and all road users.

The plan is broken down into four sections. Each section represents a comprehensive approach to addressing the identified challenges. All four sections acknowledge the challenges currently facing the NHTSA and propose strategies to address them. The 5-year plan is intended to be a dynamic guide rather than a static statement.

#### **5. Jarheads Motorcycle Club of New England**

The motorcycles involved in this crash all belonged to members of the Jarhead Motorcycle Club of New England, Plymouth, Massachusetts. This club is one of six Jarhead chapters in New England. To be a member of the club one must be a Marine veteran or served as a Navy corpsman. Members of the club had traveled up the day before the crash and were staying at the Mount Jefferson View Inn located in Randolph, New Hampshire. The club was in Randolph to attend their annual meeting being held at the Inn the day after the subject crash. At the time of the crash, some of the club members were going to the American Legion in Gorham, NH to help with a fund-raising event. The American Legion is located 10.6 miles from the Mount Jefferson View Inn. The group that departed the Inn consisted of 15 motorcycles, a total of 22 riders including the passengers. The group had just entered the highway and were approximately one-quarter mile from the Inn when the crash occurred.

##### **5.1. Jarheads Motorcycle Club Safety Equipment**

The investigation examined 11 motorcycles damaged in the collision with the Ram pickup truck. At the time of the crash the club formation consisted of a total of 15 motorcycles with 7 passengers.

Interviews with 7 Jarhead Motorcycle Club drivers that were in the formation at the time of the crash revealed that all but 1 of the 7 riders were wearing some type of US-DOT compliant helmet with face guards (either half, three-quarters or full-face guards) at the time of the crash.<sup>8</sup>

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<sup>7</sup> <https://www.nhtsa.gov/document/motorcycle-safety-5-year-plan>

<sup>8</sup> NHTSA established standards for motorcycle helmets to ensure a certain degree of protection in a crash in Federal Motor Vehicle Safety Standard 218 (Code of Federal Register, Title 49, Volume 5, Part 571, Section 218, October 2003).

One driver stated he was not wearing any helmet at the time of the crash and the another driver stated she was not wearing a US-DOT approved helmet but a type of metal skull cap and sunglasses.<sup>9</sup>

The majority of club members wore other types of motorcycle protective gear in addition to wearing helmets. All the riders interviewed stated on the accident trip they were wearing one or more of the following - leather riding jackets, leather vests, leather gloves, and/or riding boots. Club members stated that the President, who died in this crash, was adamant about club members wearing helmets.

## 5.2. Crash Involved Motorcycles

The formation of the Jarhead motorcycle club at the time of the crash involved 15 motorcycles and 22 total riders including the passengers. This Survival Factors Factual investigation is only focusing on 13 motorcycles with 18 riders. Based on interviews with some of the involved motorcycle operators and passengers, the majority of the operators and all the passengers admitted to wearing motorcycle helmets that were DOT certified even though they were not required. Three of the motorcycles involved in this crash were equipped with an automatic braking systems (ABS). One motorcycle located towards the front was equipped with ABS and the other two were in the rear of the pack. According to statements from the operators of two of the three motorcycles, during the crash sequence they were able to maneuver out of the path of the oncoming truck and bring their motorcycles to an emergency stop without turning over their motorcycles.<sup>10</sup>

## 6. Injury Information

According to the Gorham Fire Department Incident Commander (IC), two persons were transported from the scene to Androscoggin Valley Hospital. The driver of the Ram pickup truck was not injured. The truck driver was transported by a Coos County Sheriff's deputy to the Jefferson City Police department where he was picked up by the New Hampshire State Police and taken to Androscoggin Valley Hospital to have blood drawn for toxicological testing. One motorcyclist was transported to Androscoggin Valley Hospital with minor injuries and another motorcyclist with serious injuries was initially transported<sup>11</sup> to Androscoggin Valley Hospital where he was later transported by medivac helicopter to Maine Medical Center in Portland, Maine. The remaining motorcyclists suffered varying degrees of injuries ranging from none to minor and they all refused treatment or transport to local hospitals.

The motorcyclist injuries are summarized in **Table 2**.

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<sup>9</sup> US-DOT- compliant helmets are helmets that meet this safety standard, while noncompliant helmets are helmets that do not.

<sup>10</sup> Refer to Survival Factors Attachment – Motorcyclist Interviews

<sup>11</sup> The patient was originally slated to be transported to Maine Medical Center by air but due to a 45 minute ETA due to weather he was transported by ground to Androscoggin Valley hospital for more immediate treatment then later airlifted to Maine Medical Center.

**Table 2. Summary of Occupant Injuries**

<i>14 Vehicles and 19 total Occupants</i>	<b>Injury Information*</b>			
	<b>Not Injured</b>	<b>Minor</b>	<b>Serious</b>	<b>Fatal</b>
<b>2016 Ram 2500 pickup truck</b>				
<i>Driver (1)</i>	1	0	0	0
<b>13 Harley Davidson Motorcycles</b>				
<i>Drivers (13)</i>	3	4	1	5
<i>Passengers (5)</i>	1	2		2
<b>TOTAL (19)</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>7</b>
	* The injury levels were evaluated according to 49 <i>Code of Federal Regulations</i> (CFR) 830.2, which defines fatal injury as “any injury which results in death within 30 days of the accident” and serious injury as “any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burn affecting more than 5 percent of the body surface.”			

Interviews with surviving motorcycle club members indicated that three drivers and one passengers sustained minor soft tissue injuries such as road rash, bruises, and minor cuts and lacerations. Based on patient transport reports, only three surviving motorcycle club members were treated at the scene with two motorcyclist being transported to the local hospital with one of them being airlifted to Maine Medical Center in Portland, Maine.

The three medically treated motorcyclist sustained the following injuries:

- A 45-year-old male sustained a mid-shaft left femur fracture and open left tibia/fibula fractures, a shoulder dislocation, a dislocated left hand, a left ring finger open fracture, a large abrasion to the left knee, and abrasions to his head and extremities. He was wearing a helmet;
- A 57-year-old male sustained a lower back laceration, a right patella abrasion, and swelling to left knuckle of his index finger. He was wearing a helmet;
- A 51-year-old male was assessed on scene and refused transport.<sup>12</sup> He sustained several abrasions and had right shoulder pain. He was wearing a helmet.

All the fatally injured motorcyclists were triaged on scene as unviable. A full autopsy was performed at the State of New Hampshire Office of Chief Medical Examiner (NHOCME) in Concord, NH. on the seven fatally injured motorcyclists with the cause of death for six of the seven

<sup>12</sup> This patient later went for treatment at a VA hospital in Vermont.



being determined as a result of either “Multiple blunt impact injuries or Multiple blunt force injuries”. The NHOCME determined that the cause of death for the seventh fatally injured motorcyclist, who was also the lead rider of the group formation, as “Blunt impact head injuries”. In addition to their fatal injuries, the Medical Examiner (ME) wrote that three riders sustained thermal injuries. The ME also noted that a helmet accompanied three of the deceased riders.<sup>13</sup>

The ME described the fatal injuries sustained as follows:

Motorcycle driver; 62-year-old male. At the time of the autopsy a motorcycle helmet was found on the deceased. The driver sustained multiple bilateral rib fractures, severe blunt impact injuries of the head with crush deformity of the upper face, basal skull fractures with a ring fracture. There is complete fracture/dislocation of the T6 vertebral body with crush injury of the underlying spinal cord and multiple pelvic fractures. Lower extremity injuries included a compound fracture to the bilateral tibia/fibula.

Motorcycle passenger; 58-year-old female. At the time of the autopsy a melted motorcycle helmet was found on the deceased. The passenger sustained multiple bilateral rib fractures, severe blunt impact injuries of the head with subarachnoid hemorrhage, thoracic spine transection. Severe internal injuries to chest and abdomen with multiple pelvic fractures. Fractures to the right tibia/fibula. Extensive thermal burns involving the anterior and posterior torso.

Motorcycle driver; 58-year-old male. At the time of the autopsy a black and red motorcycle helmet accompanied the deceased. The ME described the helmet as sustaining minimal damage. Injuries included, facial abrasions and lacerations with subarachnoid hemorrhage and a diffuse subarachnoid hemorrhage to the brain, bilateral rib fractures with severe internal chest and abdominal injuries. Fractures to right humerus and wrist. Left lower leg amputation. Thermal burns to face, extremities and back.

Motorcycle driver; 58-year-old male. No motorcycle helmet accompanied deceased. The driver sustained multiple bilateral rib fractures with internal injuries to liver and lungs, and a right pelvic fracture. Driver sustained severe brain injuries. Extremity injuries included open fracture of the right femur, right patella and right wrist.

Motorcycle passenger; 42-year-old female. No motorcycle helmet accompanied deceased. The passenger sustained multiple bilateral rib fractures, severe blunt impact injuries of the head and cervical neck, basal skull and calvarium with. Severe internal injuries to chest and abdomen with multiple pelvic fractures. Fractures to bilateral wrist and bilateral femur and tibia/fibula fractures.

Motorcycle driver; 45-year-old male. No motorcycle helmet accompanied deceased. The driver sustained multiple bilateral rib fractures, severe blunt impact injuries of the head and neck, with crush deformity of the upper face, and basal skull and calvarium fractures. Severe internal injuries to abdomen with multiple pelvic fractures. Fractures to upper and lower

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<sup>13</sup> In the DME/ADME Investigation Report noted in their report that there were numerous motorcycle helmets found on the roadway or grassy shoulder that could not be coordinated with the rider/owner.

extremity injuries. Extensive thermal injuries to abdomen with superficial thermal injuries to arms, chest, lower back and lower extremities.

Motorcycle driver; 59-year-old male. No motorcycle helmet accompanied deceased. The driver sustained multiple bilateral rib fractures, severe blunt impact injuries of the head with crush deformity of the upper face, open frontal skull fractures, basal skull and calvarium with fractures and severe brain injuries. Lower extremity injuries included a compound fracture of the left mid-femur, fractures of the midshaft of the left tibia/fibula and traumatic amputation of the left foot at the articular surface of the left distal tibia. The NHOCME noted in the autopsy report that there were no fractures of the clavicles, sternum, spine, or pelvis. There is no body cavity hemorrhage and no gross evidence of injury to any of the body viscera.

## **7. Emergency Response**

The Gorham Police Department (GPD) was notified of the crash at 6:26 pm through their 911 system.<sup>14</sup> The GPD dispatcher notified both the Randolph Volunteer Fire Department (RVFD) and Gorham Fire Department (GFD) at 6:28 pm and relayed caller information that it involved a “pickup truck vs 2 motorcycle crash with five possible patients”.

A GPD officer was the initial first responder to arrive on-scene at 6:36 pm followed by a Jefferson Police officer (JPD) at 6:40 pm. The Chief of the RVFD arrived in his personal vehicle at approximately 6:38 pm and assumed Incident Command (IC). While in route, the Chief of the GFD heard the radio traffic for this incident and requested that dispatch send Berlin EMS (BEMS). Additionally, GPD dispatch put out a Mutual Aid call to the Jefferson Volunteer Fire Department (JVFD) and Lancaster EMS (LEMS) to respond. The RVFD and GFD sent one Engine unit each. The Gorham EMS (GEMS) sent 2 ambulances, BEMS sent 1 ambulance and LEMS sent 1 ambulance.

GFD units Rescue R1 and Engine E3 arrived on-scene at 6:44 pm. and 6:45 pm respectively. The New Hampshire State Police (NHSP) were notified at 6:29 pm and their first responding unit arrived on scene at 6:47 pm.<sup>15,16</sup> Personnel from GFD unit R1 proceeded to start triage on patients until ambulances arrived while the Engine E3 started fire suppression.

The Fire IC requested the Dartmouth-Hitchcock Advanced Response Team (DHART) respond and then sent the JVFD Engine Unit to set up a medivac Landing Zone (LZ) in a parking lot at a nearby hotel. The Chief of the GFD arrived in his personal vehicle at approximately 6:50 pm and assumed command from the RVFD Chief.

The BEMS Basic Life Support (BLS) ambulance unit arrived on scene at 6:52 pm and departed with one patient with minor injuries at 7:20 pm. LEMS BLS ambulance arrived on-scene at 6:56 pm. GEMS Advanced Life Support (ALS) ambulance unit 33A3 arrived on scene at 7:04 pm and departed the scene with the one seriously injured patient to a designated LZ at 7:16 pm.

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<sup>14</sup> Refer to Survival Factors Attachment –Responding Fire Department Reports and Logs

<sup>15</sup> Refer to Survival Factors Attachment - Law Enforcement CAD Logs

<sup>16</sup> The NHSP initially sent a total of 6 units to the crash scene.

At 7:11 pm the DHART advised Gorham dispatch that they had to abort due to weather and would contact Maine Lifeflight. Lifeflight of Maine gave an ETA of 45 minutes. GEMS AMB3, waiting at the initial LZ, proceeded with the patient from the LZ proceeded to Androscoggin Valley hospital, arriving at 7:36 pm. The patient and was stabilized at the hospital until the medevac arrived at 8 pm and transported the patient to Maine Medical Center in Portland, MA.

No Unified Command Post (UPC) was established. The RFD initially setup a Command Post (CP) adjacent to the scene but ended up moving inside an Engine Unit to use the radio in the cab.<sup>17</sup> The initial Fire IC with RVFD controlled the fire suppression and made sure a transport zone was cleared westbound while the NHSP conducted the crash scene investigation.

GFD and BEMS ambulances each transported 1 patient to Androscoggin Valley Hospital. Three Engine units (1 GFD, 1 RVFD and 1 JVFD) responded for fire suppression.

The New Hampshire Department of Transportation responded to set up detour signs and help provide traffic control. The Assistant Medical Examiner and the local mortuary director set up a temporary outdoor morgue in a tent adjacent to the scene and later transported the victims to a local mortuary.

Fourteen local and State emergency service agencies responded to the scene of the crash:

New Hampshire Highway Patrol  
New Hampshire Highway Patrol - Collision Analysis & Reconstruction (CAR) Unit  
Randolph Fire Department  
Randolph Police Department  
Gorham Fire and EMS  
Coos County Sheriff's Department  
Berlin Police and EMS  
Lancaster EMS  
Jefferson Fire Department  
Jefferson Police Department  
Littleton Fire Department  
Office of the Chief Medical Examiner<sup>18</sup>  
New Hampshire Fish and Game Department  
New Hampshire Department of Transportation

Copies of the responding fire departments incident reports have been obtained and all of the pertinent information is included in this report.

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<sup>17</sup> There was poor cellular service in the area which necessitated use of the radio.

<sup>18</sup> The Office of the New Hampshire Chief Medical Examiner (OCME) is responsible for determining the cause and manner of sudden, unexpected or unnatural deaths falling under its jurisdiction (RSA 611-B:11).

All responding fire departments and police were provided with Critical Incident Stress Debriefing (CISD) 3 days after the incident.

### **7.1. Hospital and Medical Examiner Information**

Two hospitals received 2 patients (1 with serious injuries, 1 with minor injuries). All the injured were transported to Androscoggin Valley hospital with one seriously injured patient being medevacked from there to Maine Medical Center in Portland, MA. All the fatally injured motorcyclist were transported to the Concord Hospital morgue where the Office of the Chief Medical Examiner completed the autopsies.

Maine Medical Center – Portland Maine  
Androscoggin Valley Hospital  
Concord Hospital  
Office of the Chief Medical Examiner

### **8. Coos County Emergency Operations**

The North Country Fire Mutual Aid District, of which Coos County is a member, has a Mutual Aid Plan. The plan was established in 1989 and revised and adopted November 2011. The purpose of the North Country Fire Mutual Aid District plan is:

- To promote cooperation among the member Towns' emergency services through Mutual Aid.
- To promote efficiency in emergency services through the promotion of education and training; and
- To promote harmony, friendship, and camaraderie among member Towns.

Membership in the District is open to any city, town, unincorporated place, or private fire department that complies with the requirements of membership. Failure of a member to adhere to the requirements may lead to suspension of membership and may result in the member being billed by responding Towns at District rates.

### **9. Interview Statements**

An interview was obtained with the Incident Commanders (Chief of the RVFD and Chief of GFD) and several of the motorcycle drivers that were involved or witnessed the crash. In addition, a Good Samaritan that came upon the crash scene and stopped to render aid was also interviewed.

#### **9.1. Incident Commander Statements <sup>19</sup>**

*Randolph Volunteer Fire Department Chief Dana Horne  
Interviewed June 25, 2019*

- I got toned out and was advised of a possible car accident in Randolph.

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<sup>19</sup> For entire transcript, refer to Survival Factors Attachment - Incident Commander Interviews and Statements

- One minute later I got a telephone call from a fellow fire member with the State that there was a pickup truck on fire, multiple motorcycles damaged and there appeared to be some fatalities. He gave us the exact location of the scene.
- When I got toned out, they also toned out, Gorham FD which was a good thing.
- When I arrived and started putting on my gear, one of my firemen came over and gave me a quick overview of what was going on. A vehicle was in the woods on fire and there were multiple fatalities.
- Gorham got on scene only a couple minutes after me. Their Captain came over and he's also an EMT and I told him what we had. He proceeded to start fire suppression.
- When the Gorham EMS arrived, they took over the EMS procedures from there.
- I took command and was soon advised that my radio wasn't working so I went into the Gorham Engine unit and grabbed the radio in the Engine and proceeded to take command from there directing responder traffic into the scene.
- We were trying to get a count of how many motorcyclists were in the group and they couldn't tell me for sure how many. We proceeded to have a group of my guys walk through the woods using thermal imaging looking for possible patients.
- From there it became a process of making sure the fire was out.
- I was told that a helicopter was coming so I was asked to set up a landing zone. However, it turned out that the weather was bad, so they ended up going to the hospital in Berlin and the helicopter picked up the patient there.
- Communications in that area are poor but they've gotten better.

## 9.2. Motorcycle Drivers<sup>20</sup>

*Interviewed June 27, 2019*

- I was the fourth motorcycle; Woody was the first bike. We don't ride single file but are staggered, zig-zag formation. Woody was near the center line, then Rib was behind and to the right. Josh was behind Woody on the inside and I was behind Rib. Behind me was Hooker and to my left was Danny Boy. Behind them I don't know.
- We took a left out of the motel, going about 40 mph.
- I noticed the black Ram pickup truck was on the center line or maybe a bit over the line. I don't know if Woody had time. He may have moved a bit.
- I saw Woody get hit then Demon get hit and felt heat and saw something flying. I went off to the right side of the road laying it down but not on purpose.
- I then ran over to Demon who was bleeding bad. We found a piece of leather and tied a tourniquet on his leg. A female came over and told us where to tie the tourniquet.

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<sup>20</sup> For entire transcript, refer to Survival Factors Attachment – Motorcyclist Interviews

- Then Rescue came, and someone was giving CPR to Danny Boy. Steve was having problems breathing so EMS took him.
- EMS asked me if I was hurt and I initially refused treatment and had to sign a paper. My shoulder was scraped up. I went to VA hospital in Vermont the next day.

*Interviewed July 10, 2019*

- We pulled out of the Mount Jefferson View Hotel.
- We were going down the street, probably, I don't even know, 500 feet or more, I looked up and I saw a truck, I remember. I remember it over the line, and then I remember it catching on fire.
- From that point, I'm not sure what happened.
- I must have laid my bike down to the right because all my injuries are to my right side.
- They brought me over to the side of the road and I remember curling up in a ball and just -- I was hysterical.
- We drive in a staggered formation. I was on the left with Danny and Steve was in front of me with Rhino behind me.
- I was wearing boots, sunglasses and leather gloves. I was not wearing a US-DOT hat just a little metal pot that goes over my head.
- I sustained road rash abrasion to right knee, and right elbow with a good-sized bruise on right side near hip.

*Interviewed July 8, 2019*

- I was the tail gunner and had finished holding up traffic letting everyone pull out from hotel lot when I started up I, looked up and saw Woody flying in the air and saw the truck and trailer go through the middle of the group.
- I called 911 and told them we needed fire trucks and ambulances.
- I grabbed a fire extinguisher and initially tried putting out the fire on my friends.
- I started crowd control because people were coming up and taking photos.
- I was wearing a US-DOT approved helmet with full face shield and my wife was wearing a helmet with a three-quarter face shield. I was wearing leather gloves and my wife was wearing boots.

*Interviewed July 1, 2019*

- After I pulled out, I looked in my rearview mirror to make sure Big Mack was coming up on my right, and when I looked back forward the truck was coming across the center line taking the middle of the pack out with his truck.
- Immediately upon impact the fuel tanks from the struck motorcycles started exploding.
- Before the truck even cleared the road and came to a stop in the ditch, it was already a wall of fire.
- I veered off to the left with Hayward who was in front of me.
- I jumped off and asked my wife if she was okay and I called 911.

- My wife and I were both wearing US-DOT certified helmets with a half face shield, leather jackets with the MC colors and patches and boots.
- My motorcycle did not have ABS but did have a full windshield, crash bars on the front and small ones on the back to protect the saddle bags.

### **Witness Statements<sup>21</sup>**

*Stephen Piwowarski, traveling directly behind Ram pickup truck.*

*Interviewed June 10, 2019*

- Not long after I wound up behind the pickup truck, I noticed he was driving erratic and pointed it out to my wife.
- The pickup driver was crossing the white line into the shoulder and then the double yellow into the oncoming lane.
- Initially I thought he was having trouble with the trailer since it was empty but after watching it, I realized it was due to the driver not the empty trailer.
- The truck was crossing into the oncoming lanes about a third of a car length (he meant width).
- As we came over the crest of a small grade, just as suddenly as the bikes were in view and he veered into the other lane, and just started taking out bikes.
- When the truck entered the lane and hit a bike, there was no corrective action whatsoever. The truck continued a tangential path across the lane.
- My wife who is a nurse jumped out and we started triaging victims.
- I was traveling about 55-60 mph prior to the crash.

*Corinne Jennings, traveling 2 cars behind Ram pickup truck.*

*Interviewed June 28, 2019*

- I was traveling westbound behind the truck. There was another car in front of me then the truck.
- I noticed that the trucks trailer was whipping around. He straightened out but then noticed he weaved side to side over the white line. He was driving erratic, so I slowed down to about 55 mph.
- I came over the hill and noticed the car in front of me slam on the brakes and I saw a fireball. I think I saw a couple fireballs. I saw the truck travel across the other side of the roadway and hitting the motorcycles.
- The truck went into the woods on fire, but it didn't blow up until the fire got further in the cab.
- I gave them my belt as a tourniquet because their belt wasn't holding or working.

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<sup>21</sup> For entire transcript, refer to Survival Factors Attachment – Good Samaritan and Witness Interviews

### 9.3. Good Samaritan Statement<sup>22</sup>

*Jeffery Parker, Wildman Firefighter, 2<sup>nd</sup> person to arrive on scene and stopped to help.  
Interviewed June 27, 2019*

- I was driving with my family going out to dinner
- I pulled up and stopped behind another car after seeing the fire and smoke.
- I could see it was a bad scene with the motorcycles on the road and the fire, so I called Chief Dana Horne directly to let him know what was happening and give him the exact location.
- Cell service in that area of the accident is very bad.
- I realized the gravity of the situation after seeing more of the scene.
- I asked somebody where the driver of the truck was and was he conscious. He pointed to where he was and after talking to the driver, I could see he was upset and freaking out but not hurt.
- I started trying to help out. But there weren't many patients just the deceased.
- I started to focus on trying to keep people out of the scene. There were people strolling through the scene taking pictures.
- I wasn't dressed in my forestry uniform, so I really had no authority to tell people to leave.
- It a bad section of road. My uncle told me years ago that this section of road was unsafe.

### E. DOCKET MATERIAL

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

#### LIST OF ATTACHMENTS

Survival Factors Attachment -	Responding Fire Department Logs and Reports
Survival Factors Attachment -	Law Enforcement CAD Logs
Survival Factors Attachment -	Incident Commander Interviews and Statements
Survival Factors Attachment -	Motorcyclist Interviews
Survival Factors Attachment -	Witness and Good Samaritan Interviews

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<sup>22</sup> For entire transcript, refer to Survival Factors Attachment – Good Samaritan and Witness Interviews



### LIST OF PHOTOGRAPHS

- Survival Factors Photo 1 - Frontal left angle view of deformation to front of 2016 Ram 2500 Crew Tradesman pickup truck.
- Survival Factors Photo 2 - Front left angle view of deformation and fire damage to front and right-side of 2016 Ram 2500 Crew Tradesman pickup truck.
- Survival Factors Photo 3 - Right side view of damage and deformation to 2016 Ram 2500.
- Survival Factors Photo 4 - Right side angle view of 2015 Quality Trailers flatbed trailer.
- Survival Factors Photo 5 - Interior view from outside right rear passenger window of postcrash fire damage to interior of 2016 Ram.
- Survival Factors Photo 6 - Right side view of deformation to 1998 Harley Davidson FLHT.
- Survival Factors Photo 7 - View of deformation to 2006 Harley Davidson FLSTI.
- Survival Factors Photo 8 - View of front-end deformation to 2012 Harley Davidson FLHTKCUSE7.
- Survival Factors Photo 9 - View of damage to 2012 Harley Davidson FLSTI.
- Survival Factors Photo 10 - View of deformation to 2005 Harley Davidson FLHTCUI.
- Survival Factors Photo 11 - View of 2007 Harley Davidson FLHTCU.
- Survival Factors Photo 12 - View of damaged and burned 2012 Harley Davidson FLHTK EL.
- Survival Factors Photo 13: View of minor damage to 2015 Harley Davidson FLST.
- Survival Factors Photo 14. View of minor damage to 2007 Harley Davidson FLHSE3.

END OF REPORT

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