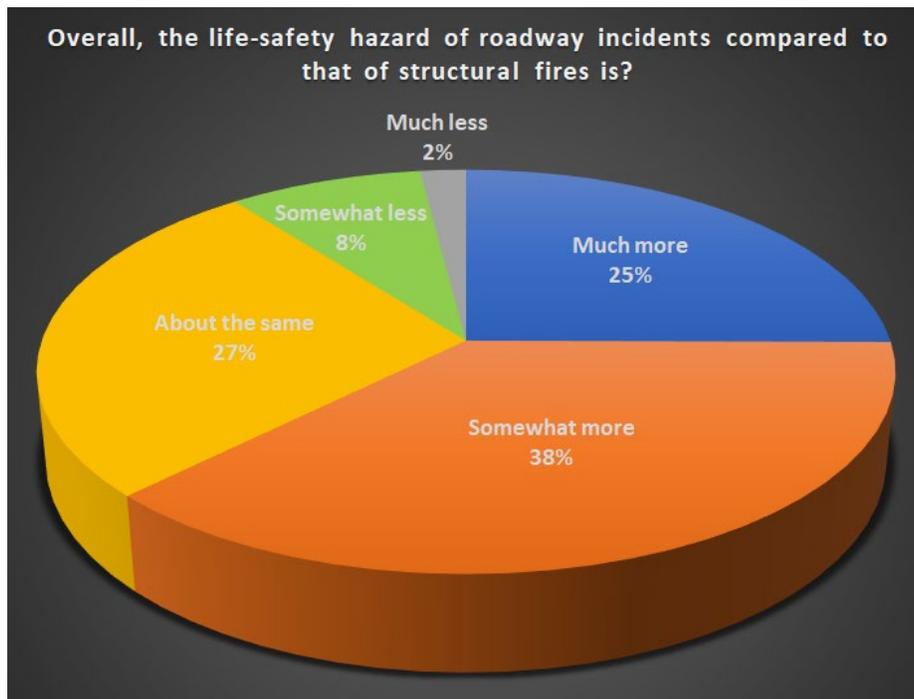


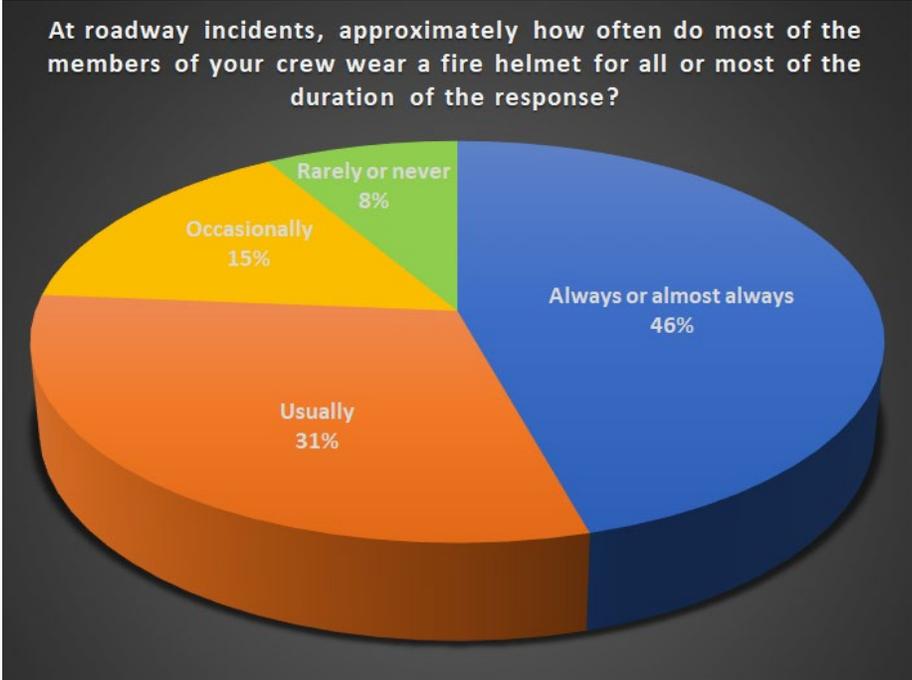
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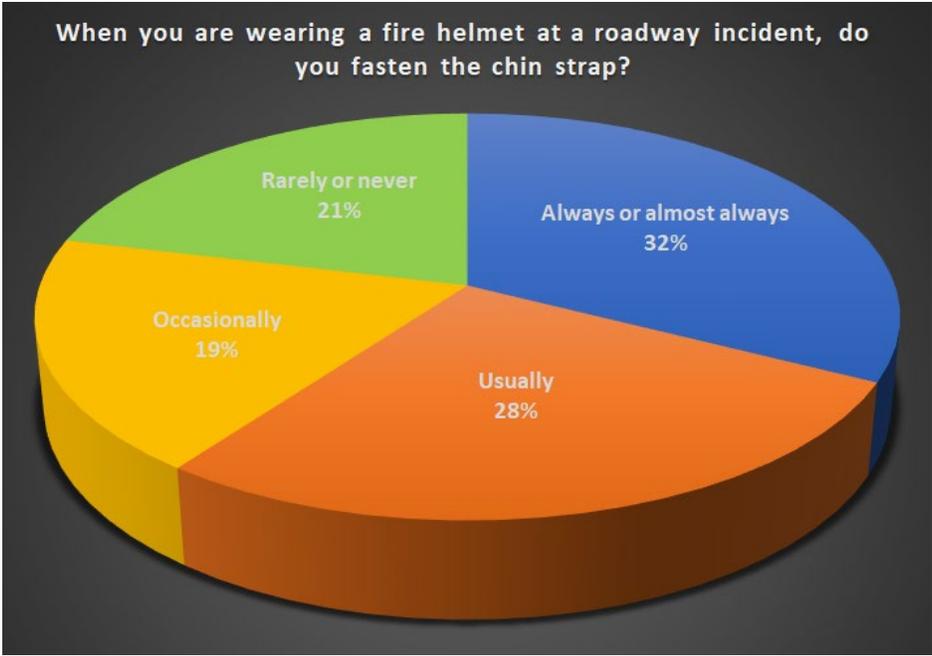
In 2020, the Emergency Responder Safety Institute (ERSI), a committee of the Cumberland Valley Volunteer Firemen's Association (CVVFA), conducted a nationwide survey of emergency service personnel to gather their opinions regarding helmet use at roadway incidents.

Over 90% of respondents agreed that the overall life safety hazard of roadway incidents was about the same to much more dangerous than a structure fire. Respondents included over 899 career, volunteer or combination departments as well as military and industrial fire brigades and emergency medical personnel. Only 46% of respondents agreed that helmets are always or almost always worn at roadway incidents. Clearly the awareness of the hazards of roadways is recognized yet consistent wearing of head protection when facing these roadway hazards does not follow this awareness.



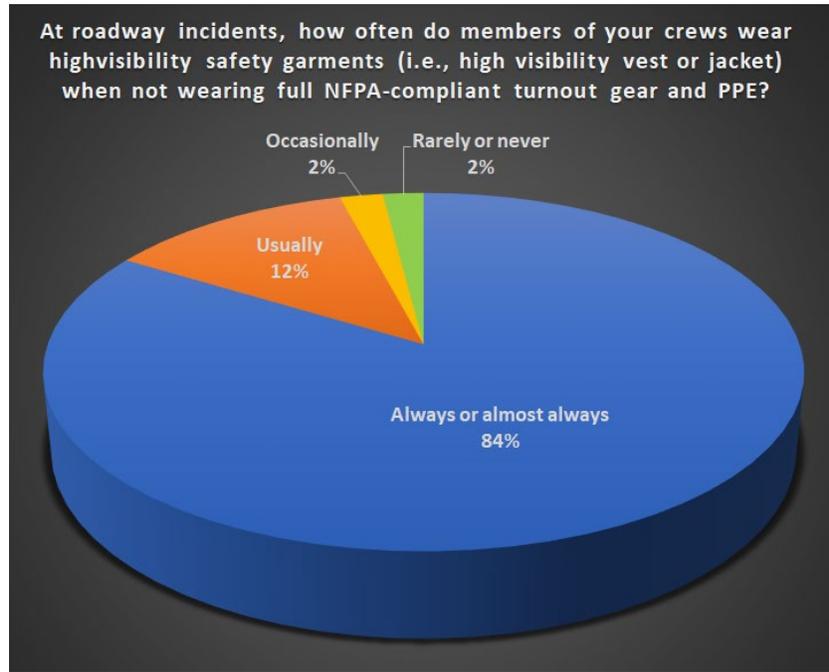


Another concerning statistic, only 32% of those stated that the helmet chin strap was always or almost always fastened. 40% of respondents, only occasionally, rarely, or never fastened the chin strap. The chin strap along with any head band adjustment provides a critical role in helping ensure the helmet stays on the wearers head.



There is a high level of compliance by respondents to wearing high-visibility safety garments when not wearing full NFPA compliant turnout gear or PPE. Over 84% stated that they always or almost always

wear a high-visibility garment. We must ask ourselves why? What reasons would cause an overwhelming number of personnel that don their high-visibility garments to not wear their fire helmet when working these dangerous roadway incidents.

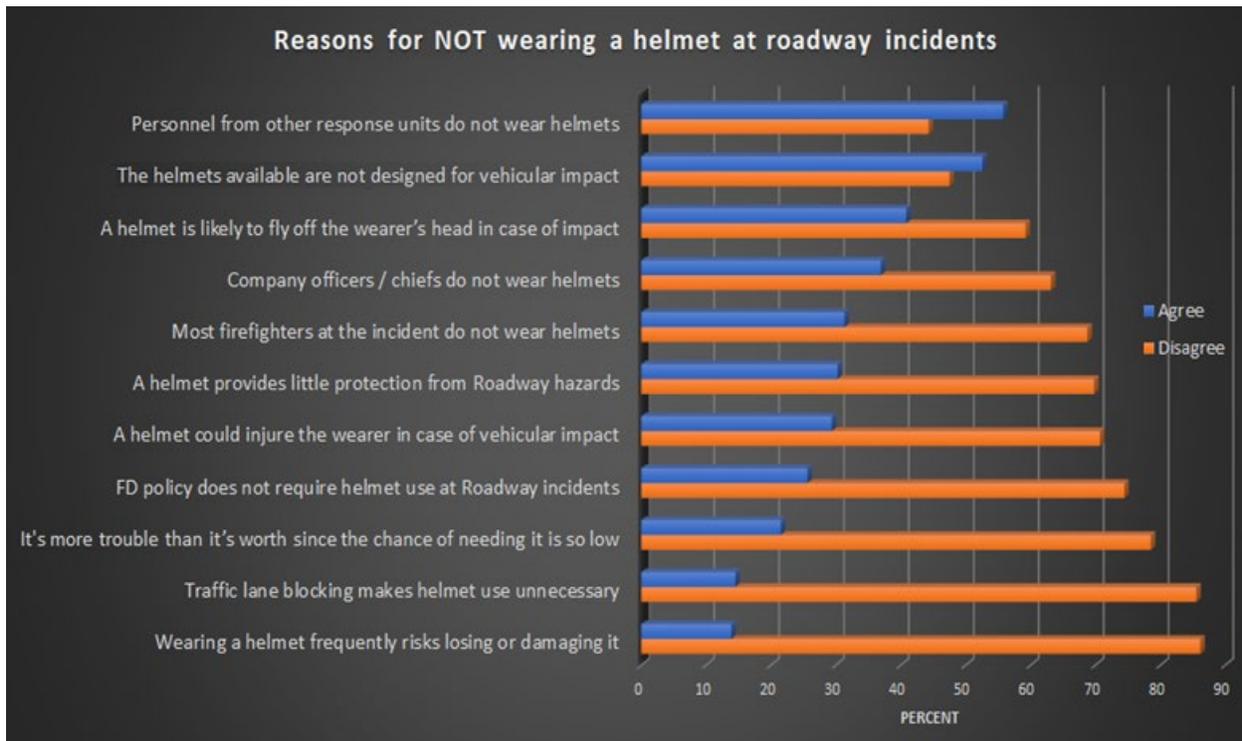


Respondents were asked to rank 7 different reasons for wearing a helmet at roadway incidents. The chart below summarizes when each of the 7 different reasons were selected as one of the top 3 reasons. It is our Standard Operating procedure was the highest ranked reason for the 1<sup>st</sup> choice and ranked in the top 3 overall reasons. Possible object impact (e.g., fixed or falling objects) and possible vehicle impact were the other top reasons for wearing a helmet.



The survey attempted to determine the reason for responders not wearing a helmet. The top 3 choices (personnel from other response units do not wear helmets, the helmets available are not designed for vehicular impact, and a helmet is likely to fly off the wearer’s head in case of impact) had close to as many to more of other respondents disagree with the statement. Definitive reasons for responders not wearing a helmet cannot be deduced from these results. Even without clear reasons, information can still be gleaned from the survey. 53% believe that helmets available are not designed for vehicular impacts. 41% believe that the helmet will likely fly off in case of an impact. 30% believe that helmets provide little protection from roadway hazards. 29% believe that a helmet could injure the wearer in case of vehicular impact. ERSI strongly believes that if a structural helmet is the only helmet available, that it should be worn at vehicle incidents. While some evidence suggests that a structural helmet may not be the best helmet design for protecting heads at roadway incidents, the simple fact remains that some protection is better than none. ERSI is not aware of a single historical case where a fire helmet caused additional injuries. Anecdotal information from firefighters directly involved in struck-by-vehicle incidents suggests helmets should be worn.

One very clear statistic is that 86% disagree that traffic lane blocking makes helmet use unnecessary. This is possibly related to the fact that so many responders recognize roadway as a very dangerous environment. Despite the best placed blocking apparatus “D” drivers can still find a way to endanger our responders, by either swerving around that apparatus to strike responders or by striking the blocking apparatus and pushing it into the responders. Additionally, flying debris from the roadway and vehicle extrication activities present scenarios where a helmet is needed to protect the wearers head.



Many survey respondents wrote in their comments about helmet design issues that caused them not to wear their fire helmet at roadway responses including that it is “too cumbersome”, “too heavy”, or “not designed for the dangers associated with roadway incidents”. Others also stated fire helmets limit

vision, don't fit inside a car when assisting victims or "gets in the way when treating patients". Dozens and dozens of comments called for helmets to be designed specifically for roadway hazards. We must have helmets that are fit for their purpose and that responders are confident will protect them while still allowing them to perform their necessary duties in order to gain compliance in wearing helmets at roadway scenes. ERSI believe more research is needed in this area.

Another central issue to the use of head protection at roadway incident responses is culture. Responders are very aware of the dangers of working on roadways yet 56% agreed that personnel from other response units not wearing a helmet was a valid reason not to wear one yourself. 37% stated they agreed that a reason to not wear a helmet was because company officers or chiefs did not wear a helmet. Yet when asked if EMS personnel at the same incidents should be made to wear a helmet if firefighters are required to wear one, an overwhelming number of respondents, 75%, said yes. This shows there is work to be done in the culture of departments before we can expect all of our emergency responders to wear helmet that are properly secured at every roadway incident response.

With the fact that high-visibility garments have a very high compliance rate and helmet usage lacks similar compliance, departments can analyze the difference to determine where improvements can be made for helmet compliance. 23 Code of Federal Regulations Part 634 (Worker Visibility) enacted a rule requiring all workers within the right-of-way of a Federal-aid highway who are exposed either to traffic or to construction equipment within the work area shall wear high-visibility safety apparel. This rule required compliance by November of 2008. Since CFR Part 634 was superseded by the Manual Uniform Traffic Code Devices (MUTCD) in 2009, high-visibility garments are now required as per the MUTCD and NFPA 1500. It is probable that many fire department SOPs require members to wear high-visibility garments. Even though fire helmets have been around significantly longer than high-visibility garments, requirements for helmets at roadway incidents virtually do not exist at the federal or national standards level. Fire Departments wishing to gain a higher compliance of helmet usage should write SOPs that require a properly secured helmet to be worn at roadway incidents, train on the SOP, and enforce the SOP.

The ERSI is currently developing a 'Helmets and Head Protection at Roadway Incident Responses' online learning module. This module will provide more guidance for fire departments wishing to learn more about this subject. This new module is expected to be available in the first quarter of 2021.

#### Author

Brady Robinette started his career in the fire service as a volunteer with Wolfforth Fire & EMS 13 years ago. In 2011 he joined Lubbock Fire Rescue full-time and currently serves as a Lieutenant. Brady currently serves on the Lubbock Fire Rescue Traffic Safety Committee. Brady currently holds an Associate degree in computer science, advanced structural firefighter, advanced EMT, and certifications in swift water rescue, rope rescue, confined space rescue, and trench rescue. Brady has taken a special interest in researching fire helmets and head protection for roadway incidents. Brady is involved with a tier 1 research institution that is focused on helmet research for the fire service.