

# EMERGENCY VEHICLE CRASHES

LESSONS LEARNED

CHARLES SLOAN III, HENNEPIN EMS, DEPUTY CHIEF OF OPERATIONS

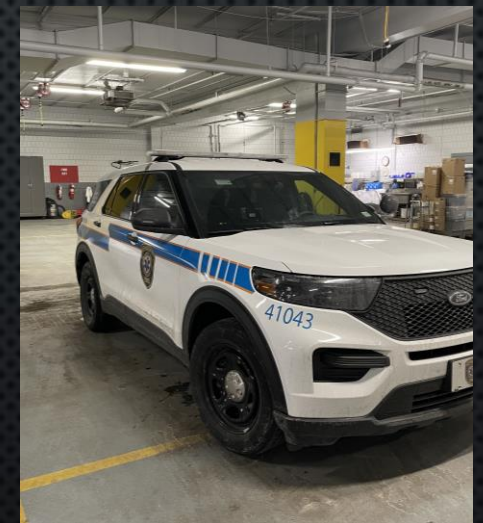
# AGENDA

- 1. INTRODUCTION
- 2. STATISTICS
- 3. CRASH REVIEW / IRB'S
- 4. HEMS 445 AMBULANCE CRASH
  - AFTERMATH...
  - LESSONS LEARNED
  - CRASH REPORT
- 5. OTHER HAZARDS
- 6. EVOC COURSES
- 7. QUESTIONS
- 8. WRAP-UP

# CHARLES SLOAN III

BA, NRP

- DEPUTY CHIEF OF OPERATIONS / HENNEPIN EMS
- OPERATING EMERGENCY VEHICLES – 1996
- EMS - W/C, EMT, EMD, PARAMEDIC, FLIGHT, COMMAND STAFF
- DRIVER SAFETY COORDINATOR-HENNEPIN EMS
- NO FINANCIAL DISCLOSURES



# STATISTICS

Between 1992-2011 (20 years), there were an annual estimated mean of 4,500 motor vehicle traffic crashes involving an ambulance.

Of these crashes:

- 65% resulted in property damage (only)
- 34% resulted in an injury/injuries
- <1% resulted in a fatality/fatalities

\*Injuries and fatalities include occupants in all cars involved in a traffic crash involving an ambulance

The National Highway Traffic Safety Administration (NHTSA) Office of Emergency Medical Services (OEMS) has published “Analysis of Ground Ambulance Crash Data from 2012 to 2018.” This 2023 analysis expands on the initial study on ambulance crash data from 1992-2011 published in 2014.

# STATISTICS

- Of the individuals killed in 173 fatal crashes between 2012 and 2018, 40.2% were occupants of the ambulance, 52.3% were occupants of other vehicles involved in the crash, and 7.5% were nonoccupants (e.g., pedestrians, bicyclists).
- Overall, 45.7% of the fatal crashes occurred during emergency use of the ambulance and 28% occurred when lights and sirens were active.
- Almost all (92.6%) of the 27 Special Crash Investigation (SCI) crashes reviewed involved ambulance operator/driver error.
- Lack of proper restraint use in the cabin by both clinicians and patients was also cited in the 27 SCI reports: Only 8.8% of clinicians were properly restrained.
- While 95.7% of patients were restrained in some manner, only 17.4% of the patients were properly restrained using both lateral belts and shoulder harnesses.

# WHEN AMBULANCES CRASH EMS Provider & Patient Safety



DATA COLLECTED BETWEEN 2012-2018

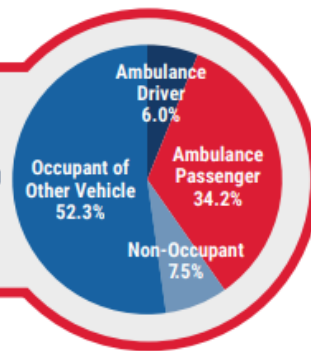
**173** fatal crashes

Fatality Analysis Reporting System

**199** fatalities

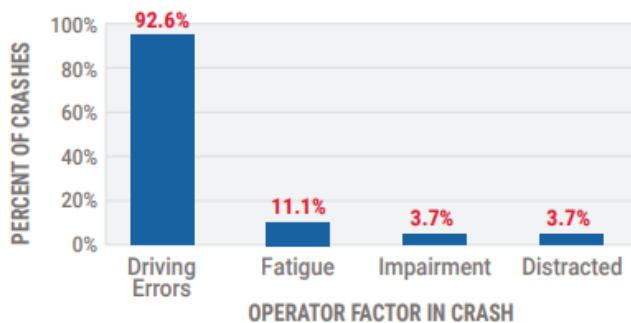
**28.4**

people killed per year



## NHTSA Conducted 27 Special Crash Investigations

[crashviewer.nhtsa.dot.gov](http://crashviewer.nhtsa.dot.gov)



**91.9%**

OF THE 37 EMS CLINICIANS IN THE PATIENT COMPARTMENT



**WERE NOT RESTRAINED**

**ONLY 17.4%**  
OF THE 23 PATIENTS

**WERE SECURED**

WITH SHOULDER AND LAP RESTRAINTS

**44%**

OF PATIENTS WERE EJECTED FROM THE COT IN SERIOUS CRASHES

**78.3%**

RESTRAINED WITH LATERAL BELTS ONLY

**4.3%**

UNRESTRAINED



# CRASH REVIEW COMMITTEE / IRB'S

- Does your organization have one?
- Every crash should be reviewed
- Minor / Major / Learning Opportunities
- Comprised of employees, uninvolved 3<sup>rd</sup> parties
- Don't assign blame/fault, preventable or non-preventable?
- Allow the driver to accept responsibility

# HEMS 445 AMBULANCE CRASH





# 445 CRASH

- JULY 2020
- NICE SUMMER NIGHT
- WEATHER NOT A FACTOR
- ROAD CONDITIONS OPTIMAL, DRY



E445

023 MPH

LS

09/20 23:24:10



LET'S WATCH  
THAT ONE  
MORE  
TIME...

# AFTERMATH...

- SIGNIFICANT STRUCTURAL DAMAGE



- FRONT-END DAMAGE



- AIRBAG DEPLOYMENT









# BEWARE OF FLYING OBJECTS...



# LESSONS LEARNED

1. Experience can work against us/False sense of security...sometimes.
2. There is no substitute for good driving habits/behaviors.
3. The passenger needs to assist the driver during emergency response.
4. Avoid distracted driving, includes the passenger.
5. Continually seek ways to improve driving safety.

6. Don't become complacent!



# CRASH REPORT

- <FILE:///D:\445%20CRASH%207-18-2020\445%20CRASH%20ANALYSIS.PDF>

E449

039 MPH

LS

03/29/2022 19:24:50



OTHER  
DRIVING  
HAZARDS

E442

025 MPH

LS

05/29/2022 15:40:39



OTHER  
DRIVING  
HAZARDS

HEMS-451

08/17/2023 14:44:43

32MPH



IG B

OTHER  
DRIVING  
HAZARDS

# OTHER DRIVING HAZARDS

08/24/2016 17:50:00



08/24/2016 17:50:00



09/23/2016 21:48:50



09/23/2016 21:48:50



08/24/2016 17:50:00



09/23/2016 21:48:50



09/10/2016 09:32:20



09/10/2016 09:32:20



09/10/2016 09:32:20



OTHER  
DRIVING  
HAZARDS



OTHER DRIVING HAZARDS

# EMERGENCY VEHICLE OPERATIONS COURSE

- DOES YOUR AGENCY REQUIRE AN EVOC COURSE?
- INITIAL AND ONGOING?
- EVOC OPTIONS

About 292,000 results (0.54 seconds)



St. Cloud State University

<https://www.stcloudstate.edu> › mhsrc › law-enforcement

## Law Enforcement Driving Programs

The **EVOC** refreshers include a PIT refresher. This **course** meets and exceeds minimum standards of the POST Board licensing requirement.



St. Cloud State University

<https://www.stcloudstate.edu> › fire-ems-first-responder

## Fire/EMS Driving Programs

Fire/EMS Driving **Programs Courses** at the **MN Highway Safety & Research Center** at St. Cloud State University.



Stantec

<https://www.stantec.com> › ... › United States Projects

## Camp Ripley Emergency Vehicle Operations Course

Real-world **emergency training** scenarios within a controlled environment. This project prepares drivers from numerous **Minnesota** organizations for a variety ...



Minnesota Training Connection

<https://minnesotatraining.com> › transportation-safety

## Law Enforcement Driver Training

This **course** is geared towards non-sworn personnel who will be driving marked units, such as police reserves/explorers, community service officers, water patrol ...



Brainerd International Raceway & Resort

<https://www.birmn.com> › safe-pursuit

## Safe Pursuit

Aug 24, 2023 — SAFE PURSUIT, OFFERED BY THE BIR PERFORMANCE DRIVING SCHOOL IS **MINNESOTA'S PREMIERE EVOC PROGRAM AND TRAINING COURSE.** . . Experienced ...



THANK YOU!!

QUESTIONS?

# REFERENCES

<https://www.usfa.fema.gov/blog/nhtsa-publishes-data-on-ground-ambulance-crashes/>

National Highway Traffic Safety Administration. (2014) The National Highway Traffic Safety Administration and ground ambulance crashes.

[www.ems.gov/assets/GroundAmbulanceCrashesPresentation.pdf](http://www.ems.gov/assets/GroundAmbulanceCrashesPresentation.pdf)

Office of Emergency Medical Services

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(202) 366 35 -5440

<https://www.stcloudstate.edu/continuingstudies/mhsrc/fire-ems-first-responder/default.aspx>