

Introduction to Crash Investigation

Doha, Qatar

Date: 10 – 12 September 2023

COURSE DESCRIPTION

Attendees are taught the importance of crash investigation and its impact on road safety. A range of stakeholders will benefit from this program as it exposes them to various issues related to crash causation, crash investigation and the implementation of remedial interventions to minimize crash risks. The program is intended to expose investigators to the intricacies of crash investigation as a highly specialized field of forensics. The following stakeholders will benefit from this program: -

- Police crash investigators;
- Private crash investigators;
- Road technicians;
- Road safety practitioners;
- Transportation engineers; and
- Accidentologists

This short learning program will be followed up with a more advanced applied crash investigation program that will focus on various issues to enhance the skills of crash investigators. It will introduce additional methodologies to allow Qatar to effectively deal with road crash risks and to ensure that fatality rates are minimized.

PRESENTER: Benjamin Van Rooyen
Coordinador: Dr. Wael Alhajyaseen

LEARNING OUTCOMES

- Understand the importance of effective crash investigation and its impact on road safety.
- To introduce the field of post-crash investigation methodologies.
- To assist investigators to identify evidence from the roadway that will assist with determining the factors that contributed to the crash.
- To assist investigators to identify evidence from vehicles that could have contributed to the crash.
- To use various formulas to determine minimum speed.
- To use formulas for vehicle throws and falls.
- To commence with formulas that deal with time and distance issues.

DAY 1 – SUNDAY 10TH SEPTEMBER 2023

08:30 – 10:30

Introduction to road crash investigation (Part A)

- The importance of crash investigation for road safety
- Crash causation – causes
- The relationship between crashes and traffic offences
- Definitions
- Investigations and prosecutions
- The human element

10:30 – 11:00 BREAK

11:00 – 12:30

Introduction to road crash investigation (Part B)

- Investigations and prosecutions
- Collection of evidence – Road factors
- Vehicle Inspections
- Series of events
- Pre- and post-crash factors – Coefficient of friction basic speed to stop formula
- Point of impact
- Top crash causative factors

12:30 – 13:30 Lunch

13:30 – 15:45

The stages of road crash investigation: Evidence from the road crash scene – the roadway

- Physical elements – skid marks on road surfaces
- Tyre and skid marks – tyre prints – acceleration marks – striation marks, spins, yaw marks, etc.
- Road signals, signs, and markings - Discussion
- Coefficient of friction of roadways and its impact on crashes - Discussion
- Glare – the effect of glare - Discussion

15:45 – 16:00

Day 1 Wrap-up

DAY 2 – MONDAY 11TH SEPTEMBER 2023

08:30 – 10:30

Evidence from the vehicles involved in a road crash:

Discussion

- Probability of fatality
- Debris
- Liquids
- Solid debris
- Vehicle damage -
- Gear shift level
- Glass, lamp examination, etc.

10:30 – 11:00 BREAK

11:00 – 12:30

Speed estimates and formulas

- Introduction to speed calculations
- Speed estimates from skid marks
- Velocity
- Conversion of speed to velocity
- Constant velocity
- Time and distance formulas
- Reaction time
- Perception/reaction time
- Witness statements – Discussion

12:30 – 13:30 Lunch

13:30 – 15:45

Speed management

- Deceleration and acceleration rates
- Distance
- Speed
- The impact of speed on crashes – Discussion – Kinetic Energy
- Minimum speed – skid to a stop
- Combined speeds
- Critical speed

15:45 – 16:00

Day 2 Wrap-up

DAY 3 – TUESDAY 12TH SEPTEMBER 2023

08:30 – 10:30

Formulas for vehicle throws and falls

- Speeds from flips
- Speeds from flips and vaults – Landing on the same level than take-off point
- Speeds from flips and vaults – Landing higher or lower than take-off point

10:30 – 11:00 BREAK

11:00 – 12:30

Skid marks

- Different types of skid marks
- Interpretation of skid marks
- Striation marks
- Critical speed - Exercise

12:30 – 13:30 Lunch

13:30 – 15:30

Interpretation of skid marks

- Interpretation of skid marks
- Issues to consider when examining skid marks
- Grades and slopes
- Superelevation

15:30 – 16:00

Workshop Conclusions & Certificates

INSTRUCTOR



Benjamin Van Rooyen

Benjamin Van Rooyen is currently a senior lecturer at the National Road Traffic Training Academy of the South African Road Traffic Management Corporation.

He has an Honors Degree in Police Science from the University of South Africa (UNISA) and a National Diploma in Traffic Management from the Institute of Traffic and Metropolitan Police Officers of Southern Africa.

He is also an international trainer for the Global Road Safety Partnership and conduct training in various countries. He is a member of the South African Institute of Traffic, Metropolitan Police and Licensing Officials of Southern Africa. (ITMPLOSA). He also completed extensive crash investigation and advanced homicide programmes at the University of North Florida (USA)

Mr. Van Rooyen is a traffic law enforcement veteran with more than thirty years of service in a large traffic law enforcement agency and 17 years in an academic environment. Mr. van Rooyen authored numerous articles and study manuals in the field of traffic science, offence monitoring and traffic law enforcement practice.