Virginia Department of Fire Programs
Virginia Association of Volunteer Rescue Squads
Emergency Vehicle Operator's Course

Contents

[Click on underlined word(s) to go to any of the areas below]

Planning Page

PREPARATION

Lesson Overview

This course designed to teach students enhanced safe vehicle operation by stressing theory and principles of defensive driving in both emergency and non-emergency situations. Virginia Motor Vehicle laws pertinent to the operation of emergency vehicles are included in the course. This class is not designed to teach the student to drive, but rather to explain how emergency driving differs from non-emergency driving. Although some driving experience will be gained through the practical exercises it is strongly recommended that the student have adequate driving experience in the vehicle.

Assignment Sheets/Skill Sheets

This lesson does not have any corresponding assignments or skill sheets.

Equipment and Materials

Registration forms for each student
Daily Attendance Sheet
Roll Call Form
Instructor Guide / Lesson Plan
EVOC Written Examinations
Pencils
Blue Forms
Practical Evolutions Form
Computer
Data projector/screen

Audiovisual Aids

EVOC PowerPoint® Presentation

Evaluation

None

REFERENCES

Pumping and Aerial Apparatus Driver/Operator Handbook, 3rd Edition, Stillwater, Oklahoma: Fire Protection Publications, 2015.

NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications, Quincy, Massachusetts: National Fire Protection Association, 2017.

Emergency Vehicle Operator Course (Ambulance) National Standard Curriculum, Washington, D.C.: National Highway Traffic Safety Administration, 1995.

Work Zone Safety Guidelines for Temporary Traffic Control, September 2019 (VDOT) *Emergency*

Vehicle Operator Course (VDFP) Standard Curriculum, October 2010 and October 2015

Excerpts from Code of Virginia; Virginia Criminal and Traffic Laws

Jack Sullivan, CSP, CFPS, Director of Training, Emergency Responder Safety Institute

National Institute of Occupational Safety and Health (NIOSH) Reports

Objectives

Course After completing this course, the student will be issued an Emergency Vehicle Operator's Course Certificate of Attendance.

Lesson After completing this lesson, the student will achieve an acceptable score, as defined by the student's training organization (VDFP/VAVRS), on the written examination.

Specific After completing this lesson, students will be able to —

1. To acquaint the student with the theories and practices of emergency vehicle operations.
2. Allow the students to practice and demonstrate their skills in emergency vehicle operations through the use of pre-determined practical exercises.

Lesson Outline

INTRODUCTION/MOTIVATION

Explain This class DOES NOT teach you how to drive; it is designed to explain how emergency driving differs from non-emergency driving and to evaluate various skills.

Discuss The main purpose of the Emergency Vehicle Operator's Course.

Review The specific objectives you plan on teaching.

PRESENTATION OUTLINE	VISUALS/NOTES
TITLE SLIDE **EMERGENCY VEHICLE OPERATORS COURSE**	Slide 1-0
Instructor Introductions	Slide 1-1
Course partnership between VAVRS / VDFP	Slide 1-2
VDFP Introduction	Slide 1-3
VAVRS Introduction	Slide 1-4
SESSION 1	Slide 1-5
I.	
A. Housekeeping 1. Bathrooms 2. Emergency Exits 3. Smoking Areas 4. Snacks / break area	Slide 1–6

B. Course Pre-Requisites

1. 18 years of age – first day of class
2. Valid driver's license
3. Affiliated (or pending) with an Emergency Services Organization

Slide 1-7

C. Certification Requirements

1. Attend 100% of Course
2. 70 % score or higher on written exam
3. Successfully complete practical skills

Slide 1-8

D. Driving Experience

1. Prior driving experience in the vehicle type and classification in which they are attempting to gain Certification

Slide 1-9

E. Objectives

1. To acquaint the student with the theories and practices of emergency vehicle operations.
2. Allow the students to practice and demonstrate their skills in emergency vehicle operations through the use of pre-determined practical exercises.
3. This class DOES NOT teach you how to drive; it is designed to explain how emergency driving differs from non-emergency driving and to evaluate various skills.

Slide 1-10

Slide 1-11

F. Vehicle Class Designations

Slide 1-12

Class 1 0 - 10,000 pounds

This classification is for cars and small vehicles such as brush trucks, quick response vehicles, command vehicles, and other utility vehicles.

Class 2 10,001 – 26,000 pounds

This classification is for most ambulances and smaller fire apparatus.

Class 3 26,0001 + pounds

This classification is for larger fire apparatus (pumpers, aerial, and specialized) and heavy rescue vehicles.

Class 4 Tractor Drawn Apparatus

This classification is for tractor drawn apparatus (aerial, tanker and specialized) and other fifth wheel type vehicles.

Slide 1-13

Class 5 Specialized A.R.F.F. Apparatus

This classification is to be used by agencies utilizing this vehicle class.

The intent of these classifications is to acknowledge and allow for additional training for various sized vehicles.

G. Vehicle Pictures

1. Class 1 Pictures 0 – 10,000 lbs — Slide 1-14
2. Class 2 Pictures 10,001- 26,000 — Slide 1-15
3. Class 2 Pictures – Continued — Slide 1-16
4. Class 3 Pictures 26,001 + — Slide 1-17
5. Class 3 Pictures – Continued — Slide 1-18
6. Class 3 Pictures – Continued — Slide 1-19
7. Class 4 Pictures – Tractor Drawn — Slide 1-20
8. Class 5 Pictures Aircraft Resq. / FF — Slide 1-21

Desirable Student Attributes — Slide 1-22

A. Skills

1. Reading
    a. Written directions
    b. Maps
    c. Run Books
2. Writing reports
3. Mechanical

B. Physical Fitness

4. Vision
    a. Depth perception
    b. Peripheral
    c. Glare
    d. Night vision
    e. Hand eye coordination
5. Hearing
    a. Fire requirement – NFPA 1001
    b. Corrected to meet the above requirements.
6. Disabilities
    a. Should not impeded safe operations

Driver Selection – Career and Volunteer

A. Often selected through promotions.

B. Often selected based on experience and training requirements.

C. Must have desire and be willing to put forth the effort to learn.

D. Requirements.

1. Agency / Department (Local requirements)
    a. Insurance
    b. Age (18 to receive certification)
    c. Training requirements
2. NFPA Standards
    a. 1001
    b. 1002
    c. 1500

Slide 1-23

Slide 1-24

STUDENT MOTIVATION AND CLASS NEED

V. Need for lesson

A. Studies show that persons with no driver training, experience 62% more crashes than those who have attended and participated in similar and like classes. Such training can, for you, establish and maintain lower insurance costs, increased ability to avoid crashes, and lesson the degree of the crash should one occur.

B. Additional Information

1. Drive more defensively
2. Anticipate actions of others
3. Better positioning in traffic
4. Better fuel economy / lower costs

C. Studies also show that haste as unnecessary in 95% of all EMS incidents, especially in hospital transports. Only 1% - 5% is true emergencies (EMS Safety – 04-94).

Slide 1-25

Slide 1-26

Slide 1-27

VI. Public Relations (P.R.) Concerns

You are your agencies best or worst P.R. agent. The public views you more while driving than at any other time.

A. Good Public Relations

1. Safe driving displays professionalism and earns respect from the public.

Slide 1-28

Slide 1-29

2. Show courtesy.
3. Keep vehicle clean.
4. Initiate and maintain public information programs.

B. Bad Public Relations

1. Vehicle crashes which occur enroute to or returning from a call have many serious consequences.
   a. Emergency efforts are delayed at the original scene.
   b. A second emergency scene is created.
   c. Damage to vehicles and property.
   d. Injury to emergency service personnel and the public.
   e. Public image of your department suffers.
   f. You and your department:
      i. May be subject to a lawsuit.
      ii. Improper language, gestures.
      iii. Unkempt appearance.
      iv. Driving recklessly
      v. Impatience in dealing with the public.

Slide 1-30

Slide 1-31

FUNDAMENTALS OF VEHICLE OPERATIONS

I. Defensive Driving

A. Definition –

Driving to prevent crashes in spite of the incorrect actions of others or adverse conditions.

"Distractions make this more important than ever"

B. Who is right or wrong doesn't matter to the person killed in a crash.

C. Defensive drivers are made:

1. Thorough experience using good driving techniques.
2. Practice both on and off public streets.
3. Knowledge of laws, driving theory and vehicle dynamics.
4. Development of proper attitudes.

D. 7.7% of vehicle crash casualties are the result of

Slide 1-32

driver intoxication. We must drive defensively to protect against the impaired drivers. (Virginia Department of Motor Vehicle Crash Statistics 2002).

II. Seat Adjustment

Slide 1-33

A. Use seat belt – control of vehicle is dependent upon remaining stationary.
B. With proper hand positioning – arms should be in a flexed position – adjust seat to allow wrist to touch the top of the steering wheel.
C. Legs should be slightly bent at the knees – do not stretch to reach pedals.
D. Seat height should be sufficient to allow ease of control and vision.

Air Ride Seat Information!

Air ride seats come in a multitude of shapes and sizes and configurations on today's modern emergency vehicles. Some of these air ride seats not only adjust height for an individual's comfort but are also ergonomically designed. It is important for the EVOC instructors to make sure the driver understands the importance of appropriate seat adjustment!

III. Position and Use of Feet

Slide 1-34

A. Right foot
    1. Should be placed squarely over the accelerator with knee slightly bent.
    2. Should only be positioned over brake in anticipation of use.
B. Left foot
    1. Never used for braking.
    2. Comfortably rest on floorboard to assist with balance.
    3. Do not rest foot on clutch pedal. If possible, rest knee against door. This allows for greater feel of the vehicle.

IV. Position of Hands

Slide 1-35

A. Holding the wheel
    1. Firm grip with both hands.
    2. Do not allow wheel to slide through hands.
    3. Do not let the wheel freely spin.

4. 8 – 4. Hand Position
    a. Less movement of hands is necessary to affect maneuvers.
    b. Department of Motor Vehicles

Slide 1-36

B. Shuffle

1. The hands do not cross each other.
2. Both hands remain in contact with the wheel at all times.
3. Use for turns and for counter-steering after turns.
4. Becomes more comfortable with practice.

Slide 1-37

V. Vehicle Mirrors

A. Use of Mirrors

1. Students will need to utilize mirrors to effectively operate emergency vehicles **(Emphasize!!!).**

Slide 1-38

B. Adjustments

1. Should be completed prior to moving vehicle.
2. Allow vision of side of vehicle and as much as lane beside vehicle as possible.
3. Use convex mirrors to get the big picture, remember, distances are distorted. (Objects in mirror are closer than they appear).

C. Blind Spots

1. Know the location of your vehicle's blind spots, each vehicle is different.
2. Compensate for it by using others to assist you.
3. Always attempt to use spotters to assist you while backing. Backing incidents are usually the largest percentage of crashes even though usually minor in nature.

Slide 1-39

D. Blind Spots / No Zones

1. Don't Hang out
2. Don't Tailgate
3. Pass Safely
4. You can't see them / they can't see you

Slide 1-40

VI. Signaling

A. Every driver must legally use signals to assist others in knowing what your intentions are.

Slide 1-41

B. Vehicles should be equipped with backup alarms.
C. Sound horn prior to backing up.
D. Does not use hazard (four-way) flashers while moving; most turn signals do not operate while hazard flashers are on.

VII. Braking

A. Only accomplished with right foot.
B. Gradual steady pressure on the brake pedal.
C. Engine retarders or engine brakes help in vehicle control.
    1. Reduce excessive brake wear.
    2. Follow manufacturer's recommendations especially for wet/slippery roads.

Slide 1-42

Engine Retarder/Brake Information!

Engine Brake (Jake Brake)

Known as a compression brake, it is and has been used by the trucking industry and emergency service providers for many years. Engine brakes on vehicles with automatic transmissions are typically not effective below 20 miles per hour (mph). This is due to the low rpm's of the engine while operating at low speeds in suburban hours and urban areas.

Automatic Transmission Retarder

Transmission retarders may be of two types; the input type, w hich operates at the input section of the transmission (between the torque converter housing and the main housing), or the output retarder which operates at the tail shaft of the transmissions. The output retarder is the most prevalent type on emergency vehicles.

Driveline Retarder

It can be installed directly to the front of a rear axle or as a mid-drive line mounting. Driveline retarders may be either of the hydraulic or electrical design with each having its advantages and disadvantages.

Secondary braking systems can increase brake lining life by as much as three (3) to five (5) times the normal service period depending upon the specific design application and use.

Engine Retarders

Some of the newer fire apparatus are equipped with engine retarders and these vehicles have operating characteristics that are similar to those of heavy commercial trucks. The use of engine retarders on wet pavement can lead to loss of control.

D. Abrupt stops can cause injury, mechanical failure and skidding.

Slide 1-43

E. Avoid locking-up brakes.
    1. Requires a greater distance to stop.
    2. Interferes with steering control.

Slide 1-44

F. More and more vehicles are being equipped with anti-lock brakes.

Anti-Lock Brake System (A.B.S.) Information!

The purpose of the A.B.S. is to permit the driver of the vehicle to stop the vehicle in the shortest possible distance while maintaining full control. By preventing the wheels from locking, A.B.S. allows steering during braking applications, and in most instances, reduces stopping distances, especially on wet, icy, or loose gravel surfaces.

It should also be noted that an A.B.S. is fully compatible with all types of air brake systems including drum, disc, and wedge as well as the various types of secondary braking systems (retarders). Automatic Traction Control (A.T.C.) can also be integrated into an A.B.S.

Slide 1-45

VIII. Stopping Distance

Slide 1-46

SD = Total stopping distance equals the driver reaction distance plus the vehicle braking distance.

Formula: SD = RD + BD

RD = Reaction Distance – the distance traveled from the time a hazard is noted, until you start to apply pressure on the brake pedal.

Average time is ¾ of a second.

BD = Braking Distance – the distance traveled from the time you apply pressure on the brakes until you completely stop.

Chart showing the increased braking distance that is required for fire apparatus vs passenger vehicles.

Slide 1-47

A. Following Distance

1. 3 second rule – gauges following distance for the travelling speed.
    a. Choose a fixed object.
    b. Vehicle rear bumper ahead passes that object.
    c. 1001, 1002, 1003
    d. Your front bumper passes object.
2. Distance varies with speed.
3. Due to emergency vehicle sizes and weight, following distances need to be increased during normal driving and emergency response. **(Emphasize!!!)**

Slide 1-48

Slide 1-49

IX. Visual Lead Time

A. Definition

The time and space allowed around your vehicle for response to a hazard.

B. 12-Second Rule

1. Distance you should be aware of potential hazards, ahead and behind.
2. Same as 3-Second Rule only count to 12.
3. Distance ahead increases with speed.

Slide 1-50

X. Smith System, (a type of defensive driving) the big picture helps drivers properly use their eyes.

Slide 1-51

A. Aim high in steering.

1. Find a safe path ahead (12 seconds) of the center of the intended driving lane.

Slide 1-52

B. Get the big picture.

1. See the entire roadway ahead.
2. Sweep the scene ahead.
    1. 1 city block.
    2. ½ mile in rural area.
3. Know what is going on around you.
    1. 360 degrees around vehicle.

C. Keep eyes moving.

1. Avoid eye-holding situations.
2. Fixed stares tend to over-relax.

Slide 1-53

D. Allow an out.
    1. Space cushion.
        1. The area allowed around your vehicle for maneuvering.
        2. 360 degrees.

XI. S.I.P.D.E. – A Five Step Approach To Safe Driving

A. Scan (Sense/Search) – using your senses to identify hazards.
    1. Vision – Look for hazards.
    2. Hearing – Listen for other emergency vehicles.
    3. Touch – the feel of your vehicle in motion.

Slide 1-54

B. Identify (Recognize)
    1. Specific hazards.
        1. Exhaust from parked cars.
        2. Children playing.
        3. Vehicles waiting at intersections.
        4. Potholes.
        5. Construction zones, etc.

C. Predict
    1. Anticipate possible actions from identifies hazards.
    2. Don’t assume the hazard won’t occur.

D. Decide
    1. Your plan of action before the hazard occurs.
    2. Weigh the potential for future hazards.

E. Execute
    1. Carry forth your evasive action in a controlled maneuver.

F. Sirens
    1. Usage is required by Virginia Motor Vehicle codes.
    2. Sudden usage behind a vehicle may startle the driver.
    3. Civilian drivers respond better to sounds that change pitch often.
    4. Short bursts with air horns and constant up and down oscillation of sirens are most effective.
    5. Emergency drivers must be aware of other emergency vehicles.

Slide 1-55

Slide 1-56

1. Emergency vehicles have difficulty hearing sirens of other emergency vehicles.
2. Report approach to common intersections by radio.
3. Especially in other jurisdictions.

6. Effective range of siren varies with speed from 300 feet at 40 M.P.H. to only 12 feet at 60 M.P.H.

Slide 1-57

7. Possible disadvantages of siren usage on highway/interstates.

Slide 1-58

1. Traffic is normally moving at speeds equal to top safe response speed.
2. Vehicles stopping or trying to get out of the way can cause serious accidents and traffic jams.
3. Evaluate legal implications of not using siren.
4. Color of vehicle.

Slide 1-59

i. Traditional vs. safety, color studies vary.
ii. D.O.T. regulations.

G. Keep your vehicle visible.

Slide 1-60

1. Consider Vehicle Color
1. Be Safe, Be Visible

XII. Seat Belts

A. Safety of others in vehicle is driver's responsibility and to assure everyone and everything is secured.

Slide 1-61

1. All riders must be fully dressed in proper attire before getting in/on.
2. All riders must wear seat belts.
1. Patient care may necessitate non-use of seat belt by attendants.
3. Riders should be seated and not permitted to stand while vehicle is in motion.
4. Riding on tailboard is UNSAFE and is NOT ACCEPTABLE

B. Passenger Restraints

1. Exception – necessary for patient care. ALWAYS ADVISE THE DRIVER WHEN YOU ARE UNBELTED!

2. Supplemental Restraint Devices / Systems
   1. Air Bags
   2. Seat Belt Pre-tensioners
   3. Remember, many vehicles have Supplemental restraint devices, i.e., air bags

Slide 1-62

XIII. Securing Occupants and Equipment

1. Risk of occupational injury and death is disproportionately higher for EMS personnel and majority of casualties are associated with transportation incidents
   1. Ambulances are not built or used as in the same manner of standard passenger vehicles.
   2. Causing safety concerns for caregiver and patient.
   3. There are inherent risks to occupants of ambulances, some vulnerability can be reduced by properly restraining occupants and equipment.

Slide 1-63

2. NIOSH Video, Squad Bench
   1. Interior view of crash test.
   2. Medic on left is unrestrained, medic on right is restrained.
   3. Patient is fully secured, including shoulder restraints.

Slide 1-64

3. Adult Patient Restraint
   1. No single position works, why is it difficult to restrain adult patients?
   2. Comfort issues?
   3. What medical equipment do you have in use?
   4. Limitations of your equipment?

Slide 1-65

4. Patient Stretcher
   1. Four things to make sure that the stretcher is properly secured:
      a. Secured in mounts.
      b. Patients faces rearward, ideally.

Slide 1-66

c. Head elevated, when appropriate.
d. Stretcher is the preferred location vs. side facing bench seat.

5. NIOSH Video, Overhead View, 30 mph crash — Slide 1-67

6. Patient Stretcher Restraints — Slide 1-68

1. Important to always use restraints properly.
2. Use manufacturer guideline, straps secure and snug.
3. Must use shoulder restraints.
4. Use restraints for patient only, not for equipment.
5. VA OEMS Rules requires use.
6. Do not be complacent, dangerous, unacceptable.
7. Better to use straps despite limitations than not at all.

7. Potential Projectiles — Slide 1-69

1. What are potential objects that could be projectiles in a rollover, collision, sudden stop?
   a. Oxygen cylinders
   b. Monitors
   c. Jump kits
   d. Laptops / tablets
   e. Sharps container
   f. Radios

8. Potential Projectiles, Ambulance Crash — Slide 1-70

1. Items on floor, were loose or fell from compartments
2. Items become projectiles
3. If possible, store in exterior compartments

9. Securing Equipment “Do’s” — Slide 1-71

1. Assure all daily equipment in place and secure
2. Use cabinets, secure with brackets and straps
3. Secure needed equipment in reach
4. Select soft sided kits in patient

compartment

5. Stow unnecessary items in exterior compartments
6. Use seatbelts in compartment to secure "surprise" items
7. Plan ahead to avoid last minute complacency

10. Securing Equipment "Don'ts"

Slide 1-72

1. Don't leave hard or heavy items unsecured while in motion
2. Don't have unnecessary items in the patient compartment
3. Don't attempt to secure monitors, oxygen bottles, with restraints intended to secure patients
4. Don't get complacent, laptops, portables radios, and other small items can be deadly projectiles

11. Occupants and Equipment

Slide 1-73

i. Final thought about securing everyone and everything
ii. We must do a better job securing ourselves, patients and equipment
iii. "Lead by Example" **(Emphasize!!!)**

THE TRANSPORATION SYSTEM

The transportation system is made up of three (3) components THE VEHCILE – THE DRIVER – THE ENVIRONMENT. All three are equally important as they relate to safe emergency vehicle operations. The following sections discuss each and how they relate to each other.

Slide 1-74

I. Maintenance

A. Daily – Beginning

1. Approaching vehicle.

Slide 1-75

a. Is it sitting level?
b. Fluid leaks underneath.
c. Exterior equipment secure.
d. Compartment and cab doors aligned properly.
e. Condition of glass and lights.
f. Is vehicle clean?

2. Engine Compartment Checks

Slide 1-76

   a. Oil level – allow at least 15 minutes after shut down before checking.
   b. Power steering fluid.
   c. Cooling system.
   d. Brake fluid.
   e. Batteries – check with hydrometer.
   f. Windshield washer fluid.
   g. Belts – no more than 1/2 inch play.
   h. Engine block.
   i. Filter, clean.
   j. Refer to manufacturer recommendations/specification.

3. Cab Compartment (Components)

Slide 1-77

   a. Controls.
   b. Seat – adjustment.
   c. Seat belts.
   d. Windows.
   e. Mirrors – adjustment
   f. Gauges.
   g. Equipment storage
   h. Refer to manufacturer recommendations/specification.

4. System Checks

Slide 1-78

   a. Lights – emergency and operating.
   b. Gauges – showing proper readings.
   c. Sirens and horns.
   d. Climate control.
   e. Auxiliary generator.
   f. Exhaust.
   g. Tires – wear and inflation.
   h. Refer to manufacturer recommendations/specification.

5. Equipment in compartments

Slide 1-79

   a. Equipment missing
   b. Properly stored and secured.
   c. Cleanliness.
   d. Proper working order.
   e. Interior and exterior.

6. Road check.
   a. Steering.
   b. Transmission.
   c. Brakes.
   d. Suspension.

Slide 1-80

7. Document all needed repairs and or defects.

Sample Vehicle Shift Inspection Report

Slide 1-81

B. Weekly / Monthly Maintenance

Slide 1-82

1. Same as daily with greater detail on all phases.
2. Thorough check of undercarriage should be included, look for leaks, or loose connections.

II. Vehicle Dynamics

A. Size

Slide 1-83

1. Increased vehicle size requires additional room for:
   a. Parking.
   b. Turning.
   c. Backing.
   d. Side to side clearance.
   e. Overhead clearance.
   f. Moving through traffic.

2. Weight – as weight increases

Slide 1-84

   a. Acceleration is slower.
   b. Braking distance increases
   c. Brake and engine wear increases.

3. Common causes of weight transfer.
   a. Too much speed in turn.
   b. Harsh or abrupt steering.
   c. Driving on too steep of slope.

4. Drivers must become familiar with the normal handling characteristics of their vehicles.

III. Starting and Driving The Vehicle

A. Following manufacturer's recommendations for starting, driving and operating emergency vehicles.

B. Students should have basic knowledge of emergency vehicles they are utilizing for course.

**** INSTRUCTORS NEED TO REINFORCE THIS PROCESS****

Slide 1-85

IV. General Driving Practices

A. Drivers must become familiar with normal operating and pressures readings to be able to recognize abnormal readings.

1. Do not move vehicle until the oil pressure gauge indicates sufficient pressure to lubricate the engine.
2. Drivers must consult operator's manual for permissible limits.
3. Drivers must be thoroughly familiar with operator's manual and consult them for permissible limits when in doubt.
4. Engine shutdown should never be made after full-load operation.
5. Allow hot engine to idle until cool. Do not race engine prior to shutdown. Turbochargers must cool or severe engine damage will result.

Slide 1-86

DRIVER

I. Attitude – the most important factor in emergency vehicle operations is driver attitude.

A. The #1 cause of vehicle crashes is driver error.

Slide 1-87

B. Pitfalls

1. Overconfidence.
2. False ideas.
3. Impatience.
4. Tension.
5. Exhibitionist.
6. "Road Rage."

Slide 1-88

C. Professionalism

1. Maturity.
2. Responsibility.

3. Courtesy.
4. Desire.
5. Restraint.

Distraction Free Driving — Slide 1-89

a. Increase risk of collisions
b. Music, cell phones, sightseeing, GPS, conversations.
c. Human aspects we can control.
d. When are these appropriate and when are they not?

6. Types of Distractions. — Slide 1-90

a. Visual.
b. Auditory.
c. Biomechanical.
d. Cognitive.

II. Text Messaging.
III. "Protective" Distractions.

1. Visual Distractions. — Slide 1-91

a. These things that take your eyes off the road.
b. What are some examples?

2. Auditory Distractions — Slide 1-92

a. Sound that take your mind off the road.
b. What are some examples? Occupants, Cell phone, radios, siren, pager, etc.

3. Biomechanical Distractions — Slide 1-93

a. Distractions that take your hands off the wheel.
b. What are some examples? GPS, computer, emergency radios, siren controls, rear view cameras, etc.

4. Cognitive Distractions — Slide 1-94

a. Distractions that take your mind off the road.
b. What would some cognitive distractions be? An argument, shopping list, errands that need to be done, personal issues/problems, etc.

5. Text Messaging

   a. Texting is a “perfect storm” of distraction.

   b. Requires you to look at keyboard, (visual), type keys, (biomechanical/manual), alert tones, (auditory), think about writing, (cognitive).

   c. Means texting is visual, biomechanical, auditory, and cognitive all in one.

Slide 1-95

6. Test Messaging crash chart - Data from VA Tech study shows texting increases your odds 23.2 times of having a crash.

Slide 1-96

7. Protective Distractions

   a. Some distractions improve safety, may have a protective effect.

   b. Talking to a passenger, adjusting radio, may combat fatigue, passengers also may serve as a collision warning.

   c. When a partner is riding “shotgun”, they should assist you at intersections by assuring the right-of-way is available.

Slide 1-97

8. Distracted Driving

   a. Our habits need to change.

   b. What can we do to combat distracted driving?

Slide 1-98

9. Fatigue / Effects

   a. Slow motor skills

   b. Delayed reaction time

   c. Poor concentration

   d. Bad judgement

   e. Blurred Vision

   f. Driving to slow / fast

   g. Driving across lanes

   h. Rolling stops

   i. Agitation / impatience w/ others

Slide 1-99

IV. Mental Fitness – operation of an emergency vehicle often involves high speeds, driver stress and danger to life and/or property. Driving under emergency conditions requires extra sensitive judgment and refined driving skills.

Slide 1-100

Personal habits – behavior patterns developed through repetition.

Slide 1-101

A. Knowledge
   1. Knowing the capabilities of your vehicle and yourself.
   2. Being familiar with the driving task.
      a. Streets and roads
      b. Capabilities of unit
      c. Proper safety procedures
      d. Driving theory
      e. Adverse conditions

B. Judgment
   1. Decision making should be appropriate for the conditions and determined by the following.
      a. Data received
      b. Past experience
      c. Personal values
      d. Common sense
      e. Department policies

C. Stress and reaction to stress
   1. Everyone is affected by and handles stress differently.
   2. Causes of stress
      a. An emergency exists
      b. Long periods away from home
      c. Physical demands
      d. Illness or death in family
      e. Financial difficulties

D. Experience – continued practice of good driving habits on which the driver can rely.

E. Substance Abuse – commonly seen in high stress positions.

Slide 1-102

a. Researchers determined that between 10 PM and 2 AM – 3 out of every 10 drivers is drunk
b. Nearly 50 % of DUI arrests are social/moderate drinkers
c. Coffee does not help eliminate alcohol or other substance from the body.

V. Physiological Aspects

A. Visual perceptions

Slide 1-103

1. 90 – 95% of all incoming data is obtained through vision.

2. Eye

Slide 1-104

a. Eye Sight – should meet or be corrected to meet the Virginia Department of Motor Vehicle requirements.
b. Glare recovery
    a. The average individual is 1 to 10 seconds.
c. Depth perception
d. Peripheral vision

3. Moth Effect

Slide 1-105

a. Tendency for the eyes especially when fatigued or drug influenced to be attracted to light. You will drive in the direction you are looking if sustained.
b. Tunnel Vision

Slide 1-106

    a. A tendency to fixate on small area.
    b. Increases with vehicle speed.

4. Physiological Aspects

Slide 1-107

a. Disabilities and Injuries – any driver suffering from a disability or injury, which affects that driver's ability to drive in any way, should be relieved from performing that

task.

b. Chronic Conditions – those conditions both mentally and physically which develop over a long period of time.

ENVIRONMENT

Slide 1-108

A. Drivers must recognize the danger in rain, ice or any slippery road condition.

Slide 1-109

1. Stopping a distance is 3 to 15 times greater on snow and ice than on dry concrete.
2. Snow tires and chains reduce stopping distances and increase traction on snow and ice.
3. Keep windshield clean with good wipers and defroster.

B. Traction – effected by weather – compensate with speed adjustment

Slide 1-110

C. Velocity – distance traveled in a specific amount of time – formula for MPH or FPS

Slide 1-111

D. Kinetic Energy and Force of Impact

Slide 1-112

II. Roads

A. Types

Slide 1-113

1. Interstate
   a. Higher speeds.
   b. Few entrances and exits.
   c. Hard surface.
   d. Good traffic flow.
   e. Few intersections.

2. Primary Roads

Slide 1-114

   a. Moderate to high speeds.
   b. Increased business traffic.
   c. Hard surface.
   d. More intersections.

3. Secondary Roads

Slide 1-115

   a. Moderate speeds.
   b. May not be hard surface.

a. Increase in pedestrian and animal traffic.

B. Design

Slide 1-116

1. Flat
2. Crowned
3. Banked
4. Grooved
5. Shoulders

Slide 1-117

6. Straight
7. Curves

C. Roads Surface Construction

Slide 1-118

1. Concrete
2. Asphalt
3. Tar and gravel
4. Dirt
   a. Asphalt is better than gravel.
   b. Dry roads are better than wet.

III. Population

Slide 1-119

1. City
   a. Usually heavier traffic
   b. Vehicular
   c. Pedestrian

2. County (Rural)
   a. Higher speeds
   b. Pedestrians and wildlife
   c. Possible poor construction and design

Slide 1-120

3. Time of Day
   a. Rush hour
   b. School hours
   c. Late night, early morning

4. Day of Week
   a. Monday – Friday
   b. Weekends

5. Holidays

SUMMARY Session 1

Slide 1-121

IV. Advice to Live By

Slide 1-122

a. You are a Professional Driver, we drive more than we intubate, yet we practice intubations skills more than we practice driving.
b. Anything that distracts your attention is dangerous.
c. Safe driving is not something you practice just some of the time.
d. Make a commitment to take driving seriously.

V. "Top Ten Safe Driving Behaviors"

Slide 1-123

1. Eliminate distractions.
2. Don't drive drowsy.
3. Maintain a safe following distance.
4. Don't speed, know your limitations.
5. Communicate your intentions to other drivers and pedestrians.
6. Continually survey your surroundings.

Slide 1-124

7. Slow down in rain, snow, ice and fog.
8. Be cautious of every intersection-regardless of right-of-way.
9. Never roll-through a stop sign.
10. When backing up, use a spotter.

Slide 1-125

Any Questions???

Virginia Department of Fire Programs
Virginia Association of Volunteer Rescue Squads, Inc.
Emergency Vehicle Operator's Course

Lesson Outline

INTRODUCTION/MOTIVATION

Explain This class DOES NOT teach you how to drive; it is designed to explain how emergency driving differs from non-emergency driving and to evaluate various skills.

Discuss The main purpose of the Emergency Vehicle Operator's Course.

Review The specific objectives you plan on teaching.

PRESENTATION OUTLINE	VISUALS/NOTES
EVOC Title Slide	Slide 2-0
Session 2	Slide 2-1
LEGAL ASPECTS	Slide 2-2
I. Moral Implications A. Public Relations 1. Poor driving skills and practices reflect directly on the agency/department as a whole.	Slide 2-3
B. Self-Esteem 1. Nobody wants to be involved in a vehicle crash. 2. Causing a vehicle crash can affect you for the rest of your life.	
C. Crashes can be avoided, even if you have to give up your legal right of way to the other drive.	

II. Civil Implications

A. You can be sued by anyone, for any reason, at any time.

B. The Good Samaritan Law does not apply to emergency vehicle operations.

Slide 2-4

III. Driving Regulations

A. Emergency vehicle operators are subject to all Motor Vehicle Codes in the Commonwealth of Virginia unless specifically exempted by the law.

Slide 2-5

1. Apparatus drivers responding in emergency vehicles are subject to civil liability and criminal prosecution for negligent actions.

2. Exemption applies only if due regard is taken for safety of persons and property

3. Vehicles must be covered by liability insurance according to the Code of Virginia or have a certificate of self-insurance.

4. What is negligence?

Slide 2-6

a. Any action which violates a standard practice or care.

b. Necessary elements.

I. Duty to act.

II. Breach of duty.

III. Injury or loss.

5. Exemptions only apply if operator Operates with “DUE REGARD”

Slide 2-7

B. The Code of Virginia, Title 46.2 contains certain motor vehicle laws which pertain specifically to emergency vehicle operation and which are in addition to other laws governing the operation of motor vehicles.

Slide 2-8

a. Your Knowledge of these laws, some of which will be discussed in length, is essential to the safe operation of all vehicles.

1. § 46.2-818.2 Use of handheld personal

communications devices in certain motor vehicles; exceptions; penalty – became effective January 1, 2021

Slide 2-9

2. § 46.2-829 Approach of law-enforcement or fire-fighting vehicles, rescue vehicles, or ambulances; violation as failure to yield right-of-way.

Slide 2-10

3. § 46.2-844 Passing stopped school buses; penalty; prima facie evidence. And § 46.2-859 Passing a stopped school bus; prima facie evidence.

4. § 46.2-890 Stopping in vicinity of fire or emergency.

5. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.

Slide 2-11

A. The driver of any emergency vehicle, when such vehicle is being used in the performance of public services, and when such vehicle is operated under emergency conditions, may, without subjecting himself to criminal prosecution:

6. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.

Slide 2-12

1. Disregard speed limits, while having due regard for safety of persons and property;

7. §46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.

Slide 2-13

2. Proceed past any steady or flashing red signal, traffic light, stop sign, or device indicating moving traffic shall stop if the speed of the vehicle is sufficiently reduced to enable it to pass a signal, traffic light, or device with due regard to the safety of persons and property; **THE SAFEST PRACTICE IS TO COME TO A COMPLETE STOP AT ALL INTERSECTIONS!**

8. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.
    3. Park or stop notwithstanding the other provisions of this chapter;

Slide 2-14

9. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.
    4. Disregard regulations governing a direction of movement of vehicles turning in specified directions so long as the operator does not endanger life or property;

Slide 2-15

10. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.
    5. Pass or overtake, with due regard to the safety of persons and property, another vehicle at any intersection;

Slide 2-16

11. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.
    6. Pass or overtake with due regard to the safety of persons and property, while en route to an emergency, stopped or slow moving vehicles, by going to the left of the stopped or slow moving vehicle in a no-passing zone or by crossing the highway centerline;

Slide 2-17

12. § 46.2-920 Emergency vehicles exempt from regulations in certain situations; exceptions and additional requirements.
    7. Pass or overtake with due regard to the safety of persons and property, while en-route to an emergency, stopped or slow- moving vehicles, by going off the paved or main traveled portion of the roadway on the right. Not withstanding other provisions of this section, vehicles exempted in this instance will be required to sound a siren or any

Slide 2-18

device to give an automatically intermittent signals.

13. § 46.2-920 B. The exemptions granted to emergency vehicles by subsection A in subdivisions A1, A3, A4, A5, and A6 shall apply only when the operator of such vehicle displays a flashing, blinking, or alternating emergency light or lights as provided in § 46.2- 1022 or § 46.2-1023 and sounds a siren, exhaust whistle, or air horn designed to give automatically intermittent signals, as many be reasonably necessary.

Slide 2-19

14. § 46.2-920 B. The exemption granted under subdivision A 2 shall apply only when the operator of such emergency vehicle displays a flashing, blinking, or alternating emergency light or lights as provided in § 46.2-1022 and § 46.2-1023 and either (a) sounds a siren, exhaust whistle, or air horn designed to give automatically intermittent signals or (b) slows the vehicle down to a speed reasonable for the existing conditions, yields right-of-way to the driver of another vehicle approaching or entering the intersection from another direction or, if required for safety, brings the vehicle to a complete stop before proceeding with due regard for the safety of persons and property.

Slide 2-20

I. Regulation Relating to Emergency Operations

A. The Code of Virginia, Title 46.2 contains a number of laws other than driving regulations which directly impact Emergency Vehicle Operation.

1. The Superintendent of State Police has broad powers to regulate and approve safety equipment for emergency vehicles
2. Some of these laws must be observed before emergency vehicle exemptions to driving regulations are valid and effective.

Slide 2-21

1. § 46.2-921 Follow or park near emergency vehicle
2. § 46.2-1019 Spotlights.
3. § 46.2-1020 Other permissible lights.

Slide 2-22

4. § 46.2-1022 Authorizes flashing blue, red and blue, blue and white, or red, white, and blue warning lights for law enforcement vehicles.

Slide 2-23

5. § 46.2-1023 Authorizes use of red or red and white warning lights on fire apparatus, rescue vehicles and ambulances.

6. § 46.2-1024 Authorizes the use of flashing or steady-burning red or red and white warning lights on one privately owned vehicle of fire fighters and rescue squad personnel

Slide 2-24

7. § 46.2-1025 Flashing amber, purple or green warning lights

8. § 46.2-1028 Auxiliary lights on fire-fighting, Virginia Department of Transportation, and other emergency vehicles.

Slide 2-25

9. § 46.2-1029.1 Flashing headlights on certain vehicles.

10. § 46.2-1029.2 Certain vehicles may be equipped with secondary warning lights.

Slide 2-26

11. § 46.2-1060 Illegal sirens, whistles, etc.; unlawful use of warning devices; exceptions.

Slide 2-27

12. § 46.2-1061 & 1062 Sirens or exhaust whistles on emergency vehicles./Approval of warning devices.

13. § 46.2-1078 Unlawful to operate motor vehicle, bicycle, electric personal assistive mobility device, electric power-assisted bicycle, or moped while using earphones.

Slide 2-28

14. § 46.2-1094 Occupants of front seats of motor vehicles required to use safety lap belts and shoulder harnesses; penalty.

Slide 2-29

15. § 46.2-1095 Child restraint devices required when transporting certain children; safety belts for other children less that eighteen years old required; penalty.

16. § 46.2-1157 Requirement of inspection; well drilling machinery, antique motor vehicle or antique trailer and certain commercial vehicle, trailers, and semitrailers excepted.

Slide 2-30

II. Other Considerations

A. The Commonwealth of Virginia does not specifically define what constitutes an emergency.

B. Due regard is the actions of a prudent person faced with similar and like conditions.

C. Individual department policies cannot legally allow other exemptions than those stated by Virginia law.

Slide 2-31

III. Other Pertinent Laws

1. § 18.2-174.1 willfully impersonates certified emergency medical services personnel, firefighter. (any person who willfully impersonates, with intent to make another believe he is, a certified emergency medical services personnel, firefighter).

Slide 2-32

SUMMARY

The Virginia Law Manual provides additional laws for your reference.

Slide 2-33

1. You must obey all Virginia Laws unless a specific exemption is granted to emergency vehicles.

2. If an exemption is granted you must adhere to all of the requirements specified in that exemption.

3. Remember and apply "Due Regard" at all times.

4. If you are utilizing emergency lights you must engage your siren as "may be reasonably necessary".

QUESTIONS

Slide 2-34

Virginia Department of Fire Programs

Virginia Association of Volunteer Rescue Squads, Inc.

Emergency Vehicle Operator's Course

Lesson Outline

INTRODUCTION/MOTIVATION

Explain This class DOES NOT teach you how to drive; it is designed to explain how emergency driving differs from non-emergency driving and to evaluate various skills.

Discuss The main purpose of the Emergency Vehicle Operator's Course.

Review The specific objectives you plan on teaching.

PRESENTATION OUTLINE	VISUALS/NOTES
EVOC Title Slide	Slide 3-0
Session 3	Slide 3-1
RESPONDING TO THE INCIDENT	
I. Emergency Driving A. An extremely complicated form of driving. 1. Higher speeds. 2. Evasive maneuvering.	Slide 3-2
II. Communications A. It is a vital link in our system. B. While not under our control; dispatchers can affect how we respond. C. Driver should take time to review the incident location and factors, which may affect the response route. 1. Consider traffic conditions, road changes, etc. 2. Officer-In-Charge, on board, should signal when to begin response.	
III. Intersections A. The number one place where emergency vehicle crashes occur.	Slide 3-3

B. Negotiating Safety.

1. Blind and heavily traveled intersections should be approached and crossed at 15 M.P.H., or less.
2. *****The safest practice is to come to a complete stop at all intersections!!!*****
   a. Use of warning devices is essential.
   b. Make eye-to-eye contact with each driver at the intersection to insure they see you.
   c. Check for hazards by looking left, the right, and the left again.
   d. Multiple lane intersection require each lane to be cleared prior to proceeding
   e. ***Your closet danger is from the left.***

Slide 3-4

IV. Passing

A. Pass on the left whenever possible.

Slide 3-5

V. School Bus

A. Loading or Unloading

1. **YOU WILL STOP.**
   a. Wait for driver's signal to pass.

VI. Short Cuts

A. Should not be used.

1. Unfamiliar with the road conditions and surrounding areas.
2. Neighborhood residents (children) are not used to emergency vehicles and rush to the street to see the action.

Slide 3-6

VII. Sirencide – the emotional reaction of emergency vehicle drivers when they begin to feel a sense of power and urgency that block out reason and prudence, leading to the reckless operation of the emergency vehicle.

A. A driver depends on his siren to move traffic for him and will eventually get over-relaxed to the conditions.

B. The only way to prevent it is to know that it happens and guard against it.

Slide 3-7

VIII. Three Dimensional Thinking

Slide 3-8

A. What is in front and back of you?
B. What is to your left and right?
C. What is above and below you?
    1. Power lines.
    2. Slippery or soft surface.

IX. Headlights

Slide 3-9

A. The most effective warning lights you have.
    1. They can usually be seen farther away than red, white or blue lights.
    2. They will project in all types of weather conditions.

X. Following Other Emergency Vehicles

A. Units responding along the same route should maintain 500 feet distance between them.

B. Use a different siren tone than the vehicle ahead of you.
    1. Change tones at intersections.
    2. Allow siren to partially wind down prior to intersection – this will enable you to hear other emergency vehicle sirens or potential problems.
    3. Hearing more than one siren, the public should be alerted to multiple emergency vehicles.

XI. Speed Adjustment

Slide 3-10

A. Type of Call
B. Weather Condition

XII. Traffic Control Devices

Slide 3-11

A. Remote controlled traffic devices along pre-determined routes.
B. Some cities use strobe lights on emergency vehicles and sensors on traffic lights (Opticoms).
    1. Sensors detect approaching strobe lights and change traffic signals in favor of responding emergency vehicles.
C. Traffic control devices have increased efficiency, but should not be considered fool proof.

A. Roundabouts

1. Approach slow – look for direction sign
2. Yield to pedestrians / bicycles
3. Yield to traffic in roundabout
4. Enter when clear
5. Select lane for your intended route

Slide 3-12

I. Pedestrians

A. Prone to serious injury
B. Caution schools, playgrounds, residential areas
C. Watch for elderly – disabilities
D. Caution when making turns
E. Pedestrians have the right-of-way
F. Passing at a crosswalk is illegal
G. Slow down and be prepared to stop.

Slide 3-13

I. Bicycles

A. Slow down on approach
B. No motor vehicle allowed in bicycle lane
C. Minimum 3 ft. clearance
D. Be prepared to stop suddenly
E. Check blind spots
F. Always check for bicycles When:

1. Pulling out
2. Changing lanes
3. Any turns
4. Open your door
5. proceed thru an intersection

Slide 3-14

Slide 3-15

CRASH AVOIDANCE

Slide 3-16

I. Driver Error

A. The leading cause of vehicle crashes.

1. Overconfidence tends to influence the driver into exceeding his/her own skills.
2. Information gained from vehicle crashes can assist drivers in not repeating the same mistakes.

Slide 3-17

II. Types of Crashes

A. Vehicle ahead of you

1. Are you too close?
2. Did they signal?

B. Vehicle behind you
    1. Are your taillights working?
    2. Give proper signals.
    3. Is other driver tailgating?
        a. Slow down.
        b. Encourage him/her to pass.

C. Collision from side
    1. Yield the right-of-way if necessary.

D. Passing other vehicles
    1. Insure sufficient room to pass
    2. Signal intentions
        a. Blinkers
        b. Sound horn
    3. Do not cut back too soon

E. Vehicle passing you
    1. Watch your blind spots
    2. Assist other drivers in his/her pass
    3. Slow down if necessary

F. Head on collision
    1. At least one person was in the wrong lane
    2. The worst possible multi-vehicle crash, more kinetic energy.
    3. Attempt to avoid
        a. Flash lights
        b. Sound horn
        c. Slow down
        d. Move right, never left
        e. Drive off the road if possible

G. The two-vehicle crash accounts for more fatalities, injuries and property damage than any other type of crash.

Slide 3-18

H. 70% of serious vehicle crashes occur are at intersections.

I. Time Of Day

Slide 3-19

a) Allow extra space cushion.
b) Consider lane choice.
c) Be aware of impaired drivers

IV. Backing

A. Use spotter whenever possible

Spotter Information – See Appendix D

Slide 3-20

B. Accomplish slowly
C. Steady and deliberate slow speed
D. Concentrate attention
    1. On your spotter
    2. In the direction you are backing
E. Rear and Side cameras are tools
F. Avoid backing if possible – use spotter
    1. Department policy
    2. Positioning
    3. Areas of responsibility
    4. communication

Slide 3-21

G. Backing Using Hand Signals

1. Hand signals need to be seen from a distance.
2. Straight back.
3. Right.
4. Left
5. STOP
6. Always use a spotter.

Slide 3-22

V. Braking Techniques

Slide 3-23

A. Apply steady pressure just prior to the point of incipient skid – hold same
B. *Pumping action not recommended for ABS equipped vehicles.*
C. *Do not lock brakes*

VI. Skids

Slide 3-24

A. Loss of traction between road surface and tires

.

B. Types of skids — Slide 3-25
   1. Front wheel – front wheel(s) locked
   2. Rear wheel – rear wheel(s) locked
   3. Four wheel – all wheels locked
   4. Power skid – excessive acceleration
   5. Spin out too fast for turns
   6. Hydroplaning
      a. Tires riding on fluids instead of road surface.
      b. Can begin at 30 M.P.H.

C. Weight shifts can contribute to skids. — Slide 3-26

D. Adequate tire pressure and tread are critical for skid prevention.
   1. Skid Control Release brakes
   2. Turn steering wheel so the front wheels point in the direction of the skid. — Slide 3-27
   3. Do not over steer – secondary skid is usually worse.
   4. Once skid is controlled, gradually apply power.

E. Skid Control - Diagram
   1. Turn into the skid
   2. Rear skid lt. turn wheels left
   3. Do Not Overact

VII. Lessen the Degree — Slide 3-28

A. Lessen the severity of the crash
   1. Decrease speed
   2. Go off the road if necessary
      a. Control the maneuver
      b. Slow down gradually
      c. Ease back onto the road when safe to do so.

I.

IX. Summary of Responding to Incidents

A. We've discussed the importance of responding to the incident safely. — Slide 3-29

B. How do we maintain our safety once we arrive on the scene? **ENCOURAGE CLASSROOM**

DISUCSSION!

C. Scene safety is a priority, but even by doing things the correct way, **"Bad Things Happen To Good People."**

Organizational Philosophy

"Firefighters responding to calls need to operate as if someone is trying to run them over."

James Joyce, Retired Commissioner

Chicago Illinois Fire Department, January 2001

Slide 3-30

Organizational Philosophy

"All Highly Predictable Incidents Are Highly Preventable Incidents!!!"

Dennis Rubin, Fire Chief

Atlanta Georgia Fire Department, February 2004

Slide 3-31

The Numbers

Deaths in crashes involving emergency vehicles

2018 Data

Fatalities: 168

74 % were multiple vehicle crashes

Slide 3-32

E. Impact of Roadway Incidents

1. Congestion
2. Clearance time.
3. Secondary events
4. Responder struck-bys

Slide 3-33

F. Three classes of Traffic Incidents

1. Major –
   a. expected duration of more than two (2) hours.
2. Intermediate –
   b. expected duration of thirty (30) minutes to two (2) hours.
3. Minor –
   c. expected duration under thirty (30) minutes.

Slide 3-34

D. "Best Practices"

Slide 3-35

1. Limit the Exposure
    a. Minimum apparatus and personnel
    b. Limit crews on scene to only those necessary to meet objectives
    c. IDLH environment

3. Limit the Time On Scene
    a. Clear-up crews as soon as possible

E. Five Parts of a Traffic Temporary Traffic Control Zone – references Virginia Department of Transportation (V.D.O.T.), Work Zone Safety, Guidelines for Temporary Traffic Control, September 2019.

Slide 3-36

1. Advanced Warning Area – alerts motorists to accident ahead.
2. Transition Area – shifts traffic into a new path
3. Buffer Space Area – safety area created by additional blocking/shielding emergency vehicles
4. Work/Activity Area – location of police, fire and EMS work being performed
5. Termination Area – returns motorist to normal driving patterns

H. Traffic Flow Patterns

Slide 3-37

1. Upstream – Approaching traffic
2. Downstream – Departing traffic

I. Traffic Lane Designations – Should be used by responders to designate lanes for work, or set up Traffic Control Zones. (i.e., Warning Area, Transition Area, etc.,

Slide 3-38

1. Left Shoulder
2. Left Lane or lane 1
3. Left Center Lane or lane 2
4. Right Center Lane or lane 3
5. Right Lane or lane 4
6. Right Shoulder

L. Staging Distances at the Scene (recommendations)

Slide 3-39

1. Can be as dangerous as travelling to and from the scene
2. 50 feet (if no fire involved)
3. 150 feet (if potential for fire)
4. 2,000 feet (binocular distance) for possible Hazardous Material, DOT ERG recommends minimum of 150 feet until investigate
5. Two (2) utility poles away from damage
6. Uphill if possible
7. Upwind if possible

Slide 3-40

M. Highway Responses on Interstates (General)

Slide 3-41

1. Block all necessary traffic – cooperate with law enforcement
2. Use vehicle as safety barrier

N. Curved and Straight Road

1. Anticipate hazards from both directions
2. Place warning devices to channel traffic to desired areas, i.e.; flares, cones, directional signs.

O. Warning Device Placement (General Guidelines)

Slide 3-42

1. Appropriate distance for road speed
2. Should be visible during all conditions
3. Should not create additional hazards
    a. Do not use flares near fuel spills
    b. Cones are more common and cost effective.

I. Vehicle Placement (General Information)

A. Every incident presents its own requirements, consider the following:

Slide 3-43

1. Type of Incident
    a. EMS
    b. Fire
    c. Rescue
2. Location of Incident
    a. Hazards
    b. Congested areas
    c. Amount of room/space needed

3. Type of vehicle
    a. Ambulance / Medic – patient care
    b. Engine – attack and water supply
    c. Rescue squad – extrication
    d. Aerial – limited reach
    e. Support vehicle(s) – specialized equipment and/or personnel

Slide 3-44

4. Apparatus Positioning and Arrangement "Best Practices"
    a. Block left, block right.
    b. Guard the scene, guard the crew.
    c. Park apparatus at an angle and turn the wheels away from the incident scene.

Slide 3-45

5. Example of a single engine company response for an incident (vehicle fire) in the right hand lane of a limited access highway.
    A. Discuss safety factors associated with incident and apparatus positioning.
    B. Review five (5) areas of a temporary traffic control zone.

6. "Best Practices" Scene Lighting
    a. Reduce emergency lights, use "blocking" mode, (Sign Boards, Arrow Boards, Arrow Sticks of while vehicle is in motion)
    b. If available, turn off all facing forward lights while vehicle is parked at incident scene.
    c. Provide scene iiiumination after dark.
    d. Presence of law enforcement vehicle has shown to slow traffic.

Slide 3-46

III. "Best Practices" at the Scene

A. Work on side away from traffic.

1. Look! Before disembarking apparatus.
2. Consider Pump Operators and location of equipment.

Slide 3-47

B. Match Crew Size to Objectives

1. Do not keep a large crew on scene.

Slide 3-48

C. Match PPE Level to Risk

1. Rescue call - PPE, Vest.
2. Fire - PPE, SCBA.

Slide 3-49

E. ANSI Compliant Public Safety Vests

1. Must provide access to equipment while worn.
2. Can be easily worn over firefighting PPE.
3. Optional breakaway safety feature.

Slide 3-50

G. "Best Practices" PPE

1. Require Retro-Reflective or Fluorescent Clothing/PPE.
    a. Structural gear may not offer "high visibility"
    b. Safety Vests – get them and use them!
    c. ANSI compliant High Visibility Safety Apparel.

Slide 3-51

H. Personal Protective Equipment (PPE)

1. Use of helmets (chinstraps in place under chin) and turnouts prevent more serious injuries.
2. Personal Protective Equipment (PPE) Hazard Assessment is required of each public safety agency.

Slide 3-52

IV. Traffic Control Devices

A. (Cones MUTCD)

1. 28" minimum height, 36" height suggested
2. Cones used at night require a 6" retroreflectorized band with a 4" retroreflectorized band spaced 2" apart.
3. Orange color approved for roadway usage, lime-green not approved.
4. Based on NFPA 1901 Revision.

Slide 3-53

B. Cone Placement

Slide 3-54

1. 35 mph at 100 feet or 35 steps
2. 45 mph at 150 feet or 50 steps
3. 55 mph at 200 feet or 70 steps
4. 55 mph at 250+ feet or 100 steps

C. Cone Deployment

Slide 3-55

1. At a minimum, apparatus should be able to deploy a 200' taper with five (5) cones.
2. A "safety zone" should be placed approximately 10' behind the apparatus so that it provides a safe work zone next to the vehicle.

D. Proper cone placement example

Slide 3-56

E. Traffic Control Devices, Signs

Slide 3-57

1. 48" X 48" standard size.
2. Orange prismatic lens sheeting for daytime or nighttime is the standard background color with black lettering.
3. Fluorescent Pink (Coral) for daytime or nighttime operations is now an option for emergency responders.
4. NFPA 1500

V. Vehicle and Cone Placement

A. Example of a single engine company response for an incident (vehicle fire) in the right hand lane of a limited access highway. You respond with one engine. How would you stage your equipment and cones for this scenario? What are some safety factors to consider?

Slide 3-58

B. Example of a single company response for an incident in the right hand lane and shoulder of a limited access highway. You respond with one engine and an EMS ambulance to a two car accident. How would you stage your equipment and cones for this scenario? What are some safety factors to consider?

Slide 3-59

C. Example of a multiple company response for an incident in two lanes of a limited access highway. You respond with two engines and an EMS ambulance to a two car accident. How would you set up your equipment and cones for this scenario? They have blocked in a V pattern with EMS in front. What are some safety factors to consider?

Slide 3-60

E. Example of a multiple company response for an incident in the median of a limited access highway. You respond with two engines and one EMS ambulance to a two car accident. How would you set up your equipment and cones for this scenario? They have a lane to block on each road. What are some safety factors to consider?

Slide 3-61

F. Example of a multiple company response for an incident in a multiple lane intersection. You respond with two engines and two EMS ambulances to a two car accident. How would you set up your equipment and cones for this scenario? They have blocked with engines and cones. What are some safety factors to consider?

Slide 3-62

G. Example of a company response to an incident in a residential neighborhood with emergency apparatus backed into the driveway. You respond with one engine and one EMS ambulance. How would you set your equipment and cones for this scenario? What are some safety factors to consider?

Slide 3-63

H. Example of a company response to an incident in a residential neighborhood. You respond with one engine and one EMS ambulance. The property owner has their car in the driveway; EMS is on the street with the engine company. How would you set up your equipment and cones for this scenario? What are some safety factors to consider?

Slide 3-64

Take Action!

Slide 3-65

I. Awareness
II. Training
III. Equipment (new and existing)
IV. Strategy and Tactics
V. Standard Operating procedures (SOP's) or Standard Operating Guidelines (SOG's)
VI. Leadership

Summary

Slide 3-66

Questions and Comments!!

Slide 3-67

Virginia Department of Fire Programs
Virginia Association of Volunteer Rescue Squads, Inc.
Emergency Vehicle Operator's Course

Lesson Outline

INTRODUCTION/MOTIVATION

Explain Course administrators fully realize the rules of your course can and may vary from this presentation. Explain the variances to your students so they will know what to expect during the instruction and judging of the cone judgement course.

Discuss The main purpose of the Cone Judgement Course.

Review The specific objectives you plan on teaching.

PRESENTATION OUTLINE	VISUALS/NOTES
EVOC Title Slide	Slide 4-0
Session 4	Slide 4-1
GUIDELINES FOR THE DRIVING RANGE	
I. Rules - Examples • Arrive on time • No persons allowed in the vehicle except the driver during testing. • Seat belts will be worn at all times. • Horn must be sounded before any reverse maneuver. • Engage parking brake and wheel chocks (Class 3 and above) when vehicle is stopped. • Emergency flashers on when vehicle is parked. • Door closed when driver exits vehicle • Other course/location/vehicle specific rules	Slide 4-2

II. Scoring

A. Students must pass minimum skill test requirements on all range work. Minimum passing is:

B. Successfully complete each course set-up on the range.

C. Does not exceed the number of points assigned to the driving course by the lead instructor

D. Points are assessed for cone strikes and range rule violations

E. A student may be tested up to two (2) times during the course.

F. Time requirements for completing the driving course are flexible according to the course set-up.

Slide 4-3

Sample Course Obstacles – cover as necessary

Blindside Backing Exercise	Slide 4-4
Diminishing Clearance Exercise	Slide 4-5
Light Bulb Exercise	Slide 4-6
Offset (Opposite) Alley Exercise	Slide 4-7
Perpendicular Backing Exercise (Alley Dock)_	Slide 4-8
Serpentine	Slide 4-9
Straight Line Exercise	Slide 4-10
Turn and Back Exercise	Slide 4-11
Parallel Parking Exercise	Slide 4-12
Cone Course Layout - Suggestion #1	Slide 4-13
Cone Course Layout - Suggestion #2	Slide 4-14
Cone Course Layout - Suggestion #3	Slide 4-15
Cone Course Layout - Suggestion #4	Slide 4-16
Backing Spotter Exercise - suggested	Slide 4-17
Backing Spotter Exercise - suggested	Slide 4-18
Final Slide–BUCKLE UP – SLOW DOWN – STAY ALERT	Slide 4-19