



## Implementing a Results Driven Driver Training Simulation Program

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### What Are You Currently Teaching?

- What do you teach?
  - EVOC, CEVO, Accident Retraining
  - Lecture only
  - Lecture and skills
    - Cone course
    - Street driving
  - Simulation Training
- How long is the program?
- Who teaches your program?
- How serious are you and the department about Driver Training?



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### Academic Policy

- The policy should spell everything out
  - For the student
  - For the instructor
- It builds credibility
- Reduces stress
- At minimum it should explain:

**Remember,  
Your House,  
Your Rules**

Passing criteria	Types of maneuvers
How grading occurs	Written exams
Attendance	Dress code
Classroom conduct	Integrity



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## Instructor Certification

- No national EVOC program.
- EVOC Instructor Training through state sponsored programs
- Learn from others
  - Get CDL training from Transit Training
  - Learn how other EMS, Fire, Police and Transit agencies grade and teach driver training.
  - Share lesson plans and lecture material from other departments; Fire, Police, EMS, etc.

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## Instructor Certification

- NFPA
  - 1002
    - Standard for Fire Apparatus Driver/Operator Professional Qualifications
  - 1451
    - Standard for a Fire Service Vehicle Operations Training Program
  - 1500
    - Standard on Fire Department Occupational Safety and Health Program
- NFFF
  - Life Safety Initiatives
- ISFSI
- USFA
- IFSTA
  - Apparatus Operator
- CEVO III
  - Fire & Ambulance Programs
- State Certifications
  - OFPC
  - DOH

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## So Now I Have a Box, What Do I Put In It?



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## Knowledge & Skills

- **Knowledge:** the information to process the situation and come to a reasonable conclusion.
  - What type of training develops **knowledge** of department policies and state laws?
- **Skills:** the aptitude needed to maintain control of a vehicle in different types of driving conditions.
  - What type of training develops **skills** in vehicle handling and spatial perception?

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## Judgment & Experience

**Judgment:** the cognitive process of reaching a decision or drawing conclusions.

- **Experience:** the accumulation of knowledge and/or skill that results from direct participation in events or simulations.
  - What is the definition of **experience**?
  - What type of training develops the **judgment** and provides **experience** without risk of damage, injury or death?

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## Attitude & Behavior

- Attitude is a complex mental state involving beliefs, feelings and values to act in certain ways.
- Behavior is the manner in which one acts or controls themselves.
- **Bad behavior without consequence leads to more bad behavior!**
- **Bad behavior with consequence eliminates bad behavior.**

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## So How Much Do I Need?

AAA Foundation, NHTSA, DOT, NTSB, CDC Studies show the average driver needs:

- 10 % Knowledge
- 10 % Skills
- 80 % Attitude
- 100%

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## Are Collisions a Part of the Job?



Can you influence  
Driver Behavior?

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## DRIVER TRAINING Triangle of Training

▪ EVOC training programs should consist of:

- Didactic (Lecture)
- Training manuals
- Defensive Driving Point Exams
- Psycho-Motor (Skills)
- Static Core Course
- Competency based
- Decision-making Skills
- Simulation Training



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## What is the goal of Driver Training?

- Raise Awareness Level of the EVO.
- Improve Driving Skills of the EVO.
- Increase Safety for all.
- Decrease Liability to Department.
- Improve effectiveness of the department's mission.

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## What Are Your Needs?

- Dedicated Training Facilities or
- Transportable classroom
- Instructors
  - Dedicated
  - Passionate
  - Knowledgeable
- Classroom Space
  - Instructor space
  - Student space
  - Simulator space

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## Training Vehicles

- Vehicles: training vs. operational
  - Training vehicles
    - Older vehicles retrofitted
      - Instructor brake/controls
      - Lower miles, but harder miles
      - Storage needs
- Operational vehicles
  - Tend to be newer
  - In better shape and maintained
  - Students come with them

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## Training Field

- Location close to classroom/simulator room
- Space
  - Large enough to accommodate all maneuvers safely
- Safety
  - minimal barriers or poles in the way
    - Ideal would be none
  - Safe areas for students waiting to drive
- Number of vehicles allowed on field.

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## How Many Employees?

- Are you training:
  - ALL employees
    - Refresher employees
  - ONLY new employees
  - Employees that pose a liability
  - Specialized vehicle drivers



Training should be from  
“hire to retire” and  
performed annually.

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## How Many Hours?

- ***What came first, the hours or the curriculum?***
- The two go hand in hand
- ***How much time do you need?***
- Depends on instructor/student ratio
- Depends on the number of vehicles used.
- Depends on the amount of curriculum to be taught.

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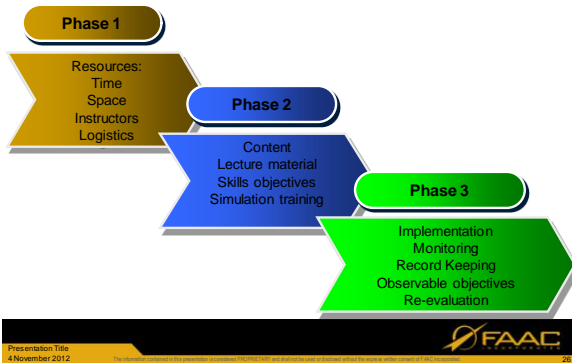
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## Developmental Phases



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## Lecture Time

- Didactic material can range from 4-8 hours and can be supplemented with CBT.
  - No more than 20 minutes per section
  - No more than 90 minutes per session
- Computer Based Training (CBT)
  - Great for standardized procedures
  - Eliminates conflicting information from various instructors
  - Can include multimedia enhancement of concepts



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## Making It All Fit

### Student/Instructor Ratios:

- 3:1
  - Most conducive for training and effectively using time

### Vehicle/Space Ratio:

- Depends on:
  - Type of vehicle
  - Type of maneuver

### Simulator Space

- Can fit in 10' x 10' environmentally controlled room



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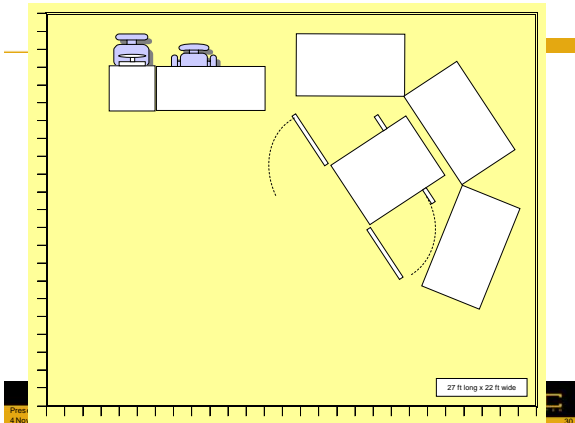
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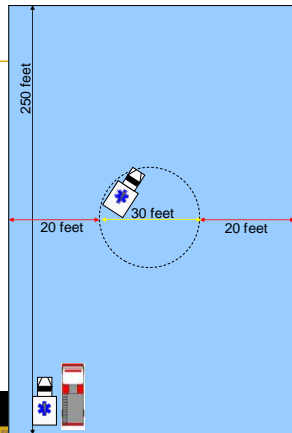
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### Skills Space

- How big a field?
  - "The Raheb Formula"
  - Minimums:
    - Length: 10 times vehicle length
    - Width: Turning Radius x  $\frac{2}{3}$  TR x 2 (each side)
  - Example:
    - Length: 25 ft vehicle x 10 = 250 ft long field.
    - Width: 30 ft TR x .66 = 20 ft x 2




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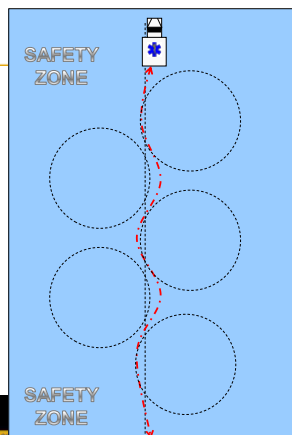
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### Skills Space

- This will allow one vehicle to operate
- Overlapping space is:
  - Dangerous
  - Nonproductive.
- Illustration of a basic maneuver
  - Note the safety zones
  - Note the areas for correction




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## Skills Time

- Most students will spend approximately 25% of their time driving.
- The remaining time will be setting up and breaking down maneuvers and watching classmates perform.
- Use this time to incorporate the simulator

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## Skills Time

- Maneuvers:
  - Basic
    - Backing concepts
    - Spatial concepts
    - Mirrors and side judgment concepts
  - Advanced
    - Forward concepts
      - "Not driving over the hood"
      - Forward planning
    - Spatial concepts
      - Building confidence
      - Mirrors and side judgment concepts

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## Scene Safety

- Always return to the basics.
- Scene Safety
- Lighting and placing flares.
- Traffic control
- Vehicle placement
- PPE
- Nighttime Operations



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## Roadway Test 4.5 Mile Loop



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## Training

- Analytical training is approximately 80% of what and how we teach EVOC.
- Analytical training is also the least effective way to train drivers.
- So why do we train this way?
  - Measurable
  - Scientific
  - Laws and regulations
  - CYA



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## Training

- Behavioral training is used in approximately 20% of training
- Behavioral training helps the student to make good decisions
- All training has an analytical component and needs more behavioral training.



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## Simulators



Open cab  
3 or 5 channel view



Custom cab fully enclosed  
5 or 7 channel view

- Full accurate detailed cab compartment controls
- Accurate vehicle brakes
- Accurate steering feedback
- Flat screen monitors

- Engine, environmental and Doppler effect sounds
- Control weather and traffic conditions
- 2 way radio communications
- Combine simulators for interactive training between members

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## Simulation Training

- Students rotate through the simulator during skills practice and testing.
- Students spend approximately 15 min/session of simulation training
- Students are NOT tested on the simulator
- Learning experience only
- Prefer crashing to driving simulator safe



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## Simulation Training

- Acclimation:
  - 3 scenarios
    - Highway driving
    - Stop and Go
    - Crazy 8's
  - 2 minute scenarios
    - Simple driving maneuvers
    - Reinforce lecture material



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## Simulation Training

- Progression
  - Basic
    - Mirrors
    - Depth perception
    - Blind spots
    - Following distances




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## Simulation Training

- Advanced
  - Multi-tasking
  - Decision making
  - Identifying potential hazards
- Ancillary learning items
  - Map reading
  - Radio Communications
  - Scene Survey




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## Additional Simulation Training



Simulator becomes additional skills space

- Students identified on skills course
  - Weak drivers
  - Weak mirror use
  - Weak dimensional analysis
- Serpentine through EI pillars
  - Cone courses
  - Scenarios are not used

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## Simulation Training

- Instructor/Student Interaction
  - During Practice Session
    - Students gather around sim for demonstration
    - Students watch each other while rotating through
    - Instructor moves around sim pointing out various items as needed
  - During Evaluation Session
    - One student at a time
    - Instructor sits at IOS behind screen
    - Student makes all decisions

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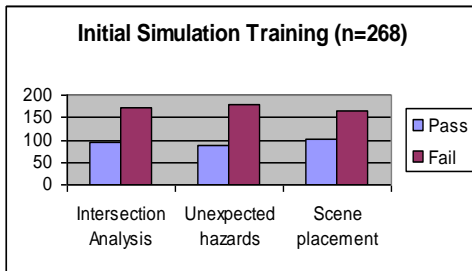
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## Simulator Results



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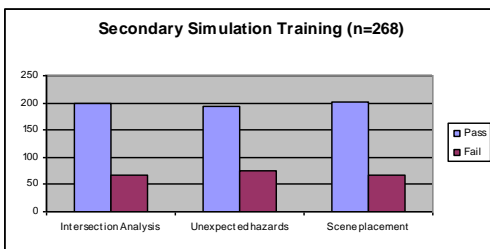
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## Simulator Results



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## Simulation Training



- Simulator:
  - Is a tool
  - Simulation does not replace actual EVOC program
  - Only as good as your instructor

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## Simulation Training

- Scenario:
  - Real world situations
  - Every scenario must be "winnable"
  - Gradually increasing multi-tasking skills
  - Duplicable, fair, and reviewable

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## Does It Work?

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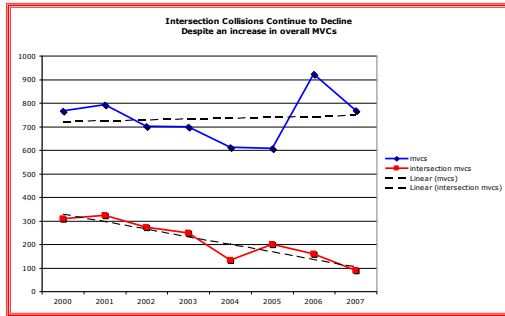
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## Some Stats



Presentation Title  
4 November 2012



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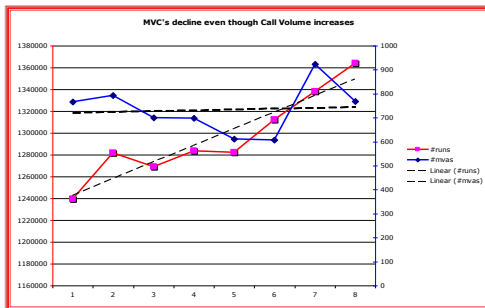
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## Some Stats



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## Four Year Comparison

### 2000-2003

- Average of 700 collisions per year
- 40% are Intersection collisions
- 60% are caused by employees with less than 3 years employment

### 2004-2007

- Average of 700 collisions per year
- 20% are Intersection collisions
- 60% are caused by employees with less than 3 years employment

50% Reduction

Presentation Title  
4 November 2012



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## Summary

- Determine your needs early on into the program.
- Don't be afraid to "tweak" them multiple times during development.
- Incorporate the three aspects of training "Triangle of Training".
- Develop measurable studies that produce outcomes early on.
- Have an Academic Policy in place
- Train on the vehicle they are expected to drive.

## QUESTIONS?

**Contact:**

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Check us out at [www.faac.com](http://www.faac.com)

## THE END