




SFFMA Volunteer Fire Chief Academy

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SFFMA Volunteer Fire Chiefs Academy

**Session 3
Operations Management**

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Safe Practices

Protective Clothing






Work Environments





Station Activities



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Weekend Two (Homework Assignment)



- A. What is your current 2016 fire department's operating budget? What was your 2015 and 2014 operating budgets?
- B. What is your current 2016 fire department debt service obligations? What was your 2015 and 2014 fire department debt service obligations?
- C. Total cost for fire services (all services offered by your fire department) per capita? Using your current budget and population served.
- D. Total 2015 responses per 1,000 population (including fire, medical and false alarm responses, etc.). What were your 2014 and 2013 total responses per 1,000 population?
- E. What is your number of firefighters per 1,000 people
- F. What is your present ISO Public Protection Classification?
- G. What was your former ISO Public Protection Classification?
- H. What is your present fire department's service district size and population?
- I. What was your fire department's service district size and population ten years ago?

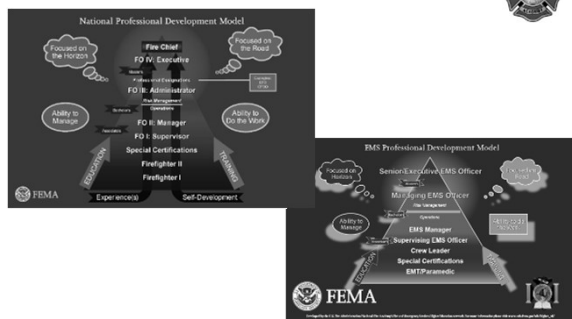
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Fire and Emergency Services Higher Education



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Introduction

Risk Management/Safety Programs –Session III

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Introduction

- **What is Risk Management?**
 - Enterprise Risk Management (ERM)
- **Fire Ground**
 - Emergency Scene Tactics And Changes
- **Apparatus**
- **Personal Health and Wellness**
- **Station**
- **Resources**
- **Highway Incidents**
- **Hazardous Material Incidents**
- **TIMAS and AHIMTs**



The identification, analysis, assessment, control, and avoidance, minimization, or elimination of unacceptable risks.

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Objectives

- Define risk management pertaining to all areas within your department
- Understand five components for the risk management process.
- Identify risk management practices in your agency and the resources available.
- Understand emergency scene tactics and changes occurring



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Need (National)

Table A2
Average Number of Fires and Non-Fire Incidents by Community Size, 2012-2014

	Community Size					
	1,000-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000+
Fires	1,517	1,338	968	654	503	387
Non-fire incidents	1,017	893	627	417	327	247
Total	2,534	2,231	1,595	1,071	830	634

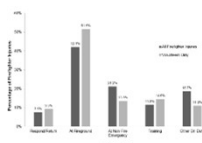


Figure 1: Volunteer Firefighters by Type of Fire (by 10,000 population)

Table 3:
Causes of Volunteer Firefighter Injuries at the Fireground, 2012-2014 Average.

Cause of Injury	Volunteer Only		All Firefighters	
	Number	Percent	Number	Percent
Exposure to fire	1,375	38.1%	2,675	33.3%
Exposure to chemicals, etc.	583	16.2%	643	8.1%
Fall, trip, slip, etc.	1,589	43.7%	1,600	20.1%
Overexertion, strain	1,367	37.5%	1,645	20.7%
Contact with objects	670	18.3%	2,475	31.0%
Struck by	248	6.8%	1,210	15.2%
Extreme weather	430	11.8%	700	8.8%
Other	630	17.1%	3,010	37.8%
Total	4,240	100.0%	25,135	100.0%

Source: NFPA Annual Fire Experience Survey, 2012-2014

Volunteer firefighter injuries are based on results for departments that protect communities of less than 10,000 population. These departments are compared solely to volunteer firefighters.

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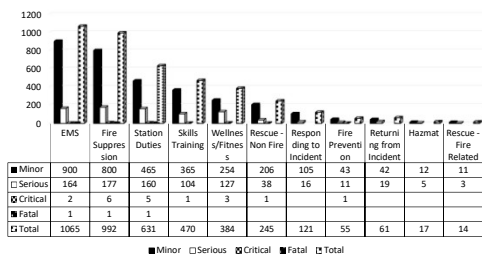
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Need (TCFP)



INJURIES 2014



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Texas Mutual (1st Qtr. 2016)



Cause of Loss	Specific Cause of Loss	Incurred \$	Claims	Per Claim
STRAIN/INJURY	Strain or injury by lifting	40,844	6	6,807
STRAIN/INJURY	Strain or injury by miscellaneous	896	4	224
STRAIN/INJURY	Strain or injury by reaching	23,916	3	7,972
STRAIN/INJURY	Strain or injury by pushing or pulling	5,400	3	1,800
STRAIN/INJURY	Strain or injury by twisting	1,132	2	566
STRAIN/INJURY	Strain or injury by repetitive motion	189	1	189
STRAIN/INJURY	Strain or injury by holding or carrying	8,344	1	8,344
FALL/SKIP OR TRIP	Fall, slip, or trip injury on same level	1,269	6	212
FALL/SKIP OR TRIP	Fall, slip, or trip injury from different level (ste	1,266	6	211
FALL/SKIP OR TRIP	Fall, slip, or trip injury, miscellaneous	10,729	2	5,364
FALL/SKIP OR TRIP	Fall, slip, or trip injury from ladder or scaffoldin	0	1	0
FALL/SKIP OR TRIP	Fall, slip, or trip injury on stairs	0	1	0
INDUSTRIAL HYGIENE	Absorption, ingestion, or inhalation, miscellaneous	21,442	14	1,532
MISC. CAUSES	Miscellaneous - other	34,258	8	4,282
MISC. CAUSES	Miscellaneous - other than physical cause of injury	0	1	0
MOTOR VEHICLE	Collision or sideswipe with another vehicle	1,442	5	288
MOTOR VEHICLE	Vehicle upset	232,199	3	77,400
STRUCK BY	Struck or injured by fellow worker; patient	3,288	2	1,644
STRUCK BY	Struck or injured by motor vehicle	0	1	0
STRUCK BY	Struck or injured by object being lifted or handled	24,034	1	24,034
STRUCK BY	Struck or injured by falling or flying object	0	1	0
CUT/PUNCTURE/SCRAPE	Cut, puncture, scrape, injured by miscellaneous	404	2	202
CAUGHT IN/UNDER/BETWEEN	Caught in, under, or between machine or machinery	186	1	186
STRIKE AGAINST	Striking against or stepping on stationary object	0	1	0

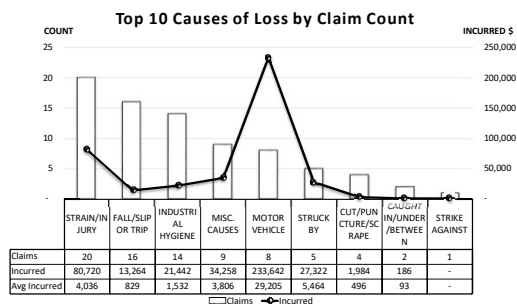
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Texas Mutual (1st Qtr. 2016)



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The Real Need



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Risk Management


Risk Management/Safety Programs –Session III

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Goal



To reduce your liabilities through a formal loss control and risk management practices and/or processes within your department. While identifying resources to help with the implementation phases of these methods.

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What Is Risk Management?



- Literally speaking, it begins with the identification and assessment of **risk**. **management is the process of minimizing or mitigating the risk** followed by **optimum** use of **resources** to monitor and reduce the same.
- Risk generally results from uncertainty. In organizations this risk can come from **uncertainty in the work place (demand, supply and community market)**, failure of projects, expectations, accidents, natural disasters etc. There are different tools to deal with the same depending upon the kind of risk.
- Ideally in risk management, a risk prioritization process is followed in which those risks that pose the threat of great loss and have great probability of occurrence are dealt with first.

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Duty of Care



- To deliver safe systems of work and a working environment whereby personnel are not exposed to threats and risks within the work place.
- Expected of "reasonable" employers and employees

OSHA: Complying With Workplace Health and Safety Laws

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Risk Prioritization Process



The two factors govern the action required:

- the probability of occurrence
- the impact of the risk.

IMPACT	ACTIONS		
SIGNIFICANT	Considerable Management Required	Must Manage and Monitor Risks	Extensive Management essential
MODERATE	Risk are bearable to certain extent	Management effort worthwhile	Management effort required
MINOR	Accept Risks	Accept but monitor Risks	Manage and Monitor Risks
	LOW	MEDIUM	HIGH
	LIKELIHOOD		

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Process of Risk Management

- First step is the assessment of risk
- Evaluation
- Management
- Last step is measuring the impact.

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Project Management Body Of Knowledge (Risk Management)

(PMBOK)

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PMBOK (Cont.)

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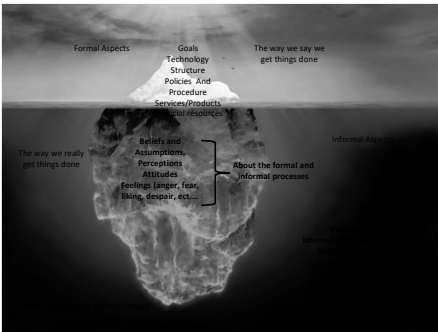
Various Aspects of Risk Management





- **What does risk management mean?**
 - The identification, assessment and planning and controlling social, economic or physical threat to the organization?
- **Is the concept only about transferring the risk or reduce its negative effects?**
 - No - much deeper concept that also involves risk avoiding as well as risk taking. Every work place involves some or other kinds of risk. Sometimes you avoid, sometimes you control the phenomenon and sometimes you simply let it come.

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Cultural Iceberg Theory

The diagram illustrates the Cultural Iceberg Theory. Above the water line (visible culture) are 'Formal Aspects' including 'Goals', 'Technology', 'Structure', 'Policies And Procedure', and 'Services/Products'. To the right, it says 'The way we say we get things done'. Below the water line (invisible culture) are 'Informal Aspects' including 'Beliefs and Assumptions', 'Perceptions', 'Attitudes', and 'Feelings (anger, fear, being, despair, etc.)'. To the left, it says 'The way we really get things done'. A bracket on the right side of the submerged part says 'About the formal and informal processes'.

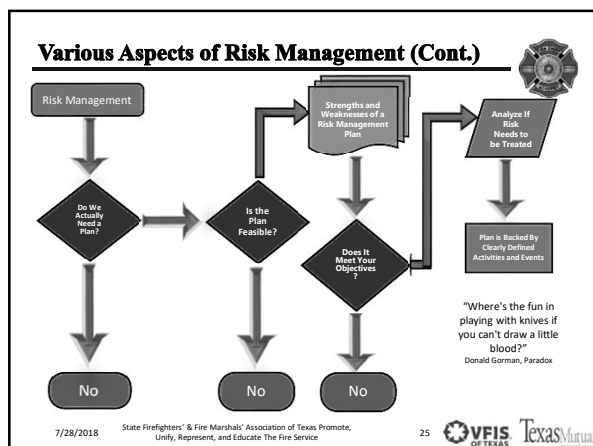
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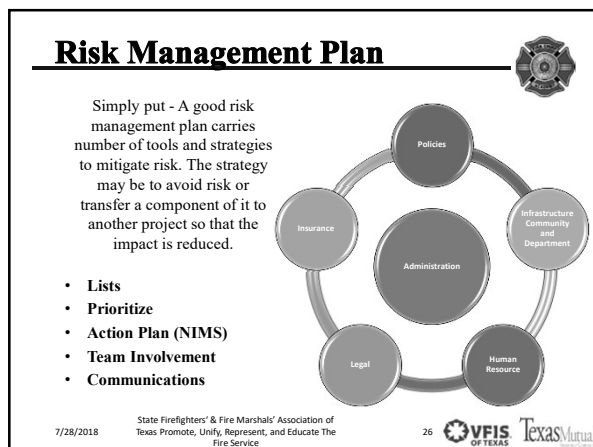
What are the Benefits of Risk Management?

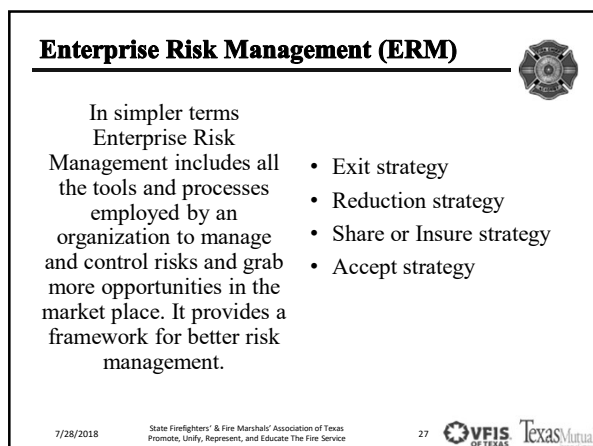



- More effective decisions
- Efficient allocations of resources
- Increased standard of accountability
- Creativity and Innovation
- Increase capacity to manage competing issues
- Flexibility in meeting objectives
- Transparent decision making


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ERM Framework




ERM Framework				
Process Steps	Types of Risk			
	Hazard	Financial	Operational	Strategic
Establish Context				
Identify Risks				
Analyze/Quantify Risks				
Integrate Risks				
Assess/Prioritize Risks				
Treat Risk				
Monitor and Review				


- Hazard Risk: Natural disasters, liability damages, Property damages due to fire, tornado etc, injury or illness to its employees.
- Financial Risk: Risks like processing risk, commodity risk, pricing risk, asset risk, liquidity risk.
- Operational Risk: labor relations, customer satisfaction, product failure etc.
- Strategic Risk: Competition, fluctuation in demand and market, regulatory and political trends, social trend, capital availability.



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Emergency Service Risk Management







The systematic application of management policies, procedures and practices to tasks of identifying, analyzing, assessing, treating and monitoring risk.




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Risk Management and Best Practices

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Fire Operations Management

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Objectives





Review Standards and regulations that affect Emergency Operations in Texas.

Explore Staffing issues in Texas Volunteer and Combination Fire Departments.

Discuss Emergency response strategy and tactics based upon available resources.

Modern Firefighting Principles.


Review Rural Water Supply Management.



Standards and Regulations



- Difference between Standards and Regulations
- Standards for Safety and Efficiency
 - NFPA
 - SFFMA
 - OSHA
- Regulations that affect the Fire Service
 - TCFP
 - DSHS
 - DPS
 - OSHA
 - USDOT











Staffing Issues

- Size DOES matter!
- Operational planning must match resources
- Intelligent Assessment.

"Many fire departments are operating at staffing levels below recommended levels, and with the state of the current economy we will likely not see a lot of improvement in the near future. But operating with fewer numbers does not mean our firefighting forces cannot be aggressive, safe and successful."

We must explore tactics, strategies, and philosophies that can help our departments to continue to provide safe and effective firefighting services to our community, even when our department must arrive at the fireground with limited staffing."






Staffing Issues


"Staffing has been a one-way argument for too long. It has stagnated strategic and tactical evolution. We must address successful strategies for operating with fewer people on the fireground because this is a reality. If we ignore this reality and simply keep stating that we must have more, we are increasing firefighter risk. To continue to say that 4 or more is the only way, is dangerous to the reality of 2 or 3 arriving. To continue this way, we only allow two options on arrival,

- 1) Do nothing (Unacceptable...what is our mission?) or
- 2) Use tactics and strategies developed for 4 person crews...this WILL result in firefighter injuries and deaths.

Aggressive strategies CAN be deployed for 2 or 3 person arriving crews.



Aggressive attack does not have to be interior."







Operational Strategies

- History of Firefighting Principles
- UL and NIST Studies
- Modern Firefighting Practices
 - UL\NIST Studies
 - Efficiency and Safety for our customers, both internal and external
 - No Compromise!
 - What are the Opportunities





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Operational Strategies

Modern Firefighting Practices

Flow Path Management

- NIST Wind-Driven Fire Studies
- Air ingress and egress
- Ventilation Limiting
- Control the Door
- Close the Door Message for Occupants

Operational Strategies

Transitional Attack

- Aggressive Interior Attack vs Aggressive Exterior Attack
- SLICE-RS
 - Sample SOG
- RECEO-VS
- VEIS


““Aggressive” is an ACTION... not a Location!”

Operational Strategies

Modern Attack



- Innovation
- Residential
- Commercial
- Playbook
- CAFS
 - Tonka
 - Shumway


Operational Strategies




Other Considerations

- Rural Water Supply Challenges
- Stressed Budgets
- Morale

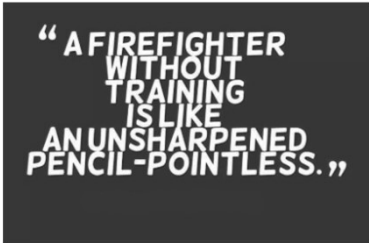



Operational Strategies




And Most Importantly.....

TRAINING, TRAINING, TRAINING






Operational Strategies



Additional Resources

- [Modern Fire Behavior Handout](#)
- [Small Unit Firefighting PPT](#)
- [Can You Really Push Fire?](#)
- [Flow Paths Rules of Engagement](#)
- [Video: LA County- "Softening the Target"](#)
- [Fireground Command Sheet](#)
- [Art of Reading Smoke](#)



Fire Ground Risk Management

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Introduction

- Understand a proficiency cycle with the goal of preventing skill degradation and operational deficiencies.
 - Organizational and personal behavior
 - Understand systems for mitigating incident processes.
 - Incident Familiarization
 - Engineering utilization

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Concern


The dynamics of emergencies destroy the fabric of safety and normalcy for victims, create hostile environments, and tax the abilities of systems.

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Risk Management / Safety Fundamental





- **Normalization of Deviance** - people within the organization become so much accustomed to a deviant behavior that they don't consider it as deviant, despite the fact that they far exceed their own rules for the elementary safety.

(Diane Vaughan Ph.D.)

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Normalization of Deviance (Cont.)






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Normalization of Deviance (Cont.)





- **Prevention**
 - Understanding
 - Legal Liabilities
 - Policies
 - Training/Education
 - Enforcement
 - Discipline
 - Self
 - Others




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Risk Assessment



Risk Assessment/Rules of Engagements			
Fire Fighter Injury/Life Safety Risk	High Probability of Success	Marginal Probability of Success	Low Probability of Success
Low Risk	Initiate offensive operations. Continue to monitor risk factors.	Initiate offensive operations. Continue to monitor risk factors.	Initiate offensive operations. Continue to monitor risk factors.
Medium Risk	Initiate offensive operations. Continue to monitor risk factors. Employ all available risk control options.	Initiate offensive operations. Continue to monitor risk factors. Be prepared to go defensive if risk increases.	Do not initiate offensive operations. Reduce risk to fire fighters and actively pursue risk control options.
High Risk	Initiate offensive operations only with confirmation of realistic potential to save endangered lives	Do not initiate offensive operations that will put fire fighters at risk for injury or fatality	Initiate defensive operations only.



Hazard




Definition

A hazard is any condition, activity, object, substance or force that exists with in the working environment with the potential to cause injury, negatively affect health and/or the environment.


Characteristics

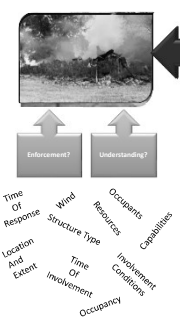
- **Visible Hazard** – those readily seen, heard, smelt, tasted or otherwise sensed
- **Hidden Hazard** – Those not readily seen without prompting or more detail searching.
- **Developing Hazard** – Those which get worse over time, may not be detected without measurement.

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10 Rules of Engagement influencing Factors (Cont.)






Time
Discovered
Dispatched
Response
Segment deployment / With Arrived
Apparatus Needed
Engines
Tankers/Tenders
Ladders/Master Streams
Personnel Needed
Rescue/Search
Suppression/Attacked Lines
Ventilation
Refuels




Hazard and Risk

Hazard/Cause





Source of Danger

Risk/Effect




Exposure of Danger

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Hazard and Risk (Cont.)

Hazard/Cause





Source of Danger

Risk/Effect




Exposure of Danger

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Hazard and Risk (Cont.)

Hazard/Cause





Source of Danger

Risk/Effect




Exposure of Danger

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Hazard and Risk (Cont.)

Hazard/Cause





Source of Danger

Risk/Effect



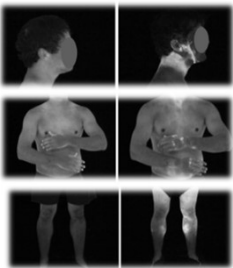
Exposure of Danger

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Structural Fire Ground Operations

- **Smoke Toxicity** - When inhaled in a low-oxygen environment, cyanide becomes 10 times more toxic. Just the beginning.....
 - Autopsies and experimental data show that serious injury and death result from exposure to contact irritants, primarily hydrogen chloride, and the central systemic poisons, carbon monoxide (CO) and cyanide.
- **Skin heats it expands which increases external absorption**



Before And After Particle Exposure

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Behavioral Risk Assessment

- **Thinksafe - SAM**
 - S – Spot the hazard
 - A – Assess the Risk
 - M – Manage the change
- **PASS**
 - P - Positive
 - A - Attitude
 - S - Safety
 - S - System

- **STOP**
 - S - Step Back
 - T - Think
 - O - Observe
 - P - Proceed

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Apparatus

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Objectives

To procure, operate, maintain, and replace apparatus that will maximize the safety, efficiency, and fiscal responsibility of your Fire Department.

Review the Standards relating to Fire Apparatus.

Understand the Importance of a Documented Maintenance Program.

Understand the need for a planned vehicle replacement program.

Understand the issues involved in purchasing Fire Apparatus.

Standards


- NFPA
- ISO
- NWCG
- TFS

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Standards




NFPA

- 1901 - Standard for Automotive Fire Apparatus
- 1906 - Standard for Wildland Fire Apparatus
- 1911 - Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service, Automotive Fire Apparatus
- 1912 - Standard for Fire Apparatus Refurbishing
- 1914 - Standard for Testing Fire Department Aerial Devices
- 1915 - Standard for Fire Apparatus Preventive Maintenance
- 1071 - Standard for Emergency Vehicle Technician Professional Qualifications
- 1002 - Fire Department Vehicle Driver/Operator Professional Qualifications

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Standards




ISO

- Differences exist from NFPA 1901
- Engine Company Equipment List
- Ladder Company Equipment List
- FSRS Equivalency List

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Standards



NWCG

- NIFC/NWCG

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Standards



TFS

- HB 2604 Program
- HB 2604 Minimum Vehicle Standards
- HB 2604 Minimum Vehicle Standards with CAFS

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Vehicle Design



Design:

- Total weight distribution
- Chassis and suspension adequacy
- Vehicle size, location and baffling
- Tires and wheels
- Technological aids (I.e. ABS, driveline retarders, Stability Systems, ect.)

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NFPA 1901 & Related Issues



NFPA 1901

- Lighting
- Reflective striping
- Safety enhancements...



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NFPA 1901



• Rear Reflective Markings

- 50% of the rear-facing vertical surface of all vehicles must now be covered with reflective red and yellow stripes in a chevron pattern sloping downward from the center of the vehicle at a 45-degree angle.
- The stripes must be 6" wide, instead of the minimum combined width of 4" specified on the sides and front.
 - Although there is some latitude on the exact shade of yellow to be used, other colors may not be substituted.

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Reflective Markings



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Documented Maintenance Program



- Importance of documentation
- Standards
- Credentials
- Testing



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Apparatus Replacement


- Repair or Replace?
- Apparatus Replacement Planning



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Apparatus Purchasing



- Needs Assessment
- Specifications Development
- Purchasing Rules



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Objectives

Describe apparatus features that should be considered for increasing the degree of safety.

Introduction



- Types
- Design
- Ergonomic Considerations
- Functional Safety
- Maintenance Processes




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Types



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Vehicle Design



Design:

- Total weight distribution
- Chassis and suspension adequacy
- Vehicle size, location and baffling
- Tires and wheels
- Technological aids (I.e. ABS, driveline retarders, Stability Systems, ect.)


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NFPA 1901 & Related Issues





- Lighting
- Reflective striping
- Safety enhancements...

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NFPA 1901

- **Rear Reflective Markings**
 - 50% of the rear-facing vertical surface of all vehicles must now be covered with reflective red and yellow stripes in a chevron pattern sloping downward from the center of the vehicle at a 45-degree angle.
 - The stripes must be 6" wide, instead of the minimum combined width of 4" specified on the sides and front.
 - Although there is some latitude on the exact shade of yellow to be used, other colors may not be substituted.

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Reflective Markings



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Apparatus Design



Rear Safety Striping



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Apparatus Design



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Existing Apparatus Design



Jacksonville Beach Fire Department Apparatus



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Other Designs



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Upgrading or Refurbishing Fire Apparatus



NFPA 1901 – all must Fully enclosed seating meet the current standard

- Warning lights
- Reflective striping
- Slip resistance of walking surfaces and handrails
- A low voltage electrical system load manager
- Where the GVWR is 36,000 pounds or more,
- Ground and step lights
- Noise levels in the driving and crew
- Engine belts, fuel lines, and filters have been replaced
- Brakes, brake lines and wheel seals have been replaced or serviced
- Tires and suspension are in serviceable condition
- All horns and sirens are relocated
- Seat belts are available for every seat and are new or in serviceable condition
- Sign plates are present stating no riding on open areas
- A complete weight analysis shows the fire apparatus is not over individual axle or total GVW ratings
- The fire pump meets or exceeds its original pump rating
- Alternator output meets its rating
- Water tank and baffles are not corroded or distorted
- A transmission shift pump interlock is present
- All loose equipment in the driving and crew areas is secured
- The radiator has been serviced
- If so equipped, the generator and line voltage accessories
- If equipped with an aerial device, a complete test

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Conclusion



- Emergency vehicle is designed to do the right job accurately.
- Emergency vehicle visibility and designed as a traffic control equipment to enhance personnel safety
- Ensure all equipment meets applicable requirements

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Station

Risk Management/Safety Programs –Session III

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What is a Fire Station ?

- Kitchen Facility
- Eating Facility
- Sleeping Facility
- Personal Hygiene Area
- Office

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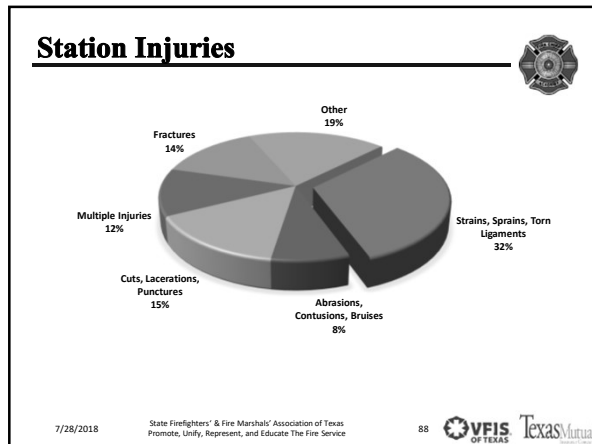
What is a Fire Station ? (Cont.)

- Garage Facility
- Storage Facility
- Training & Educational Facility
- Social Gathering Place
- Public Occupancy

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Station Designs

- Exterior/Site Considerations
- Historical Design/Refinements
- Garage Area Hazards
- Storage/Special Use Hazards
- Other/Miscellaneous Hazards

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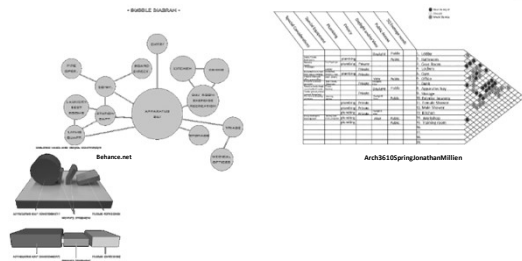
Station Design The Processes

Considerations:

- Land
 - 1 ½ Road Miles
 - Response Time
- Designed Build (Builder Oversight)
- Builder at Risk – (Building Architect Works for Your Interests)
- Flow of People
- Garage Doors/ Traffic
- Medical Room
- Security of Property
- Emotional Safety

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Station Design The Processes (Cont.)



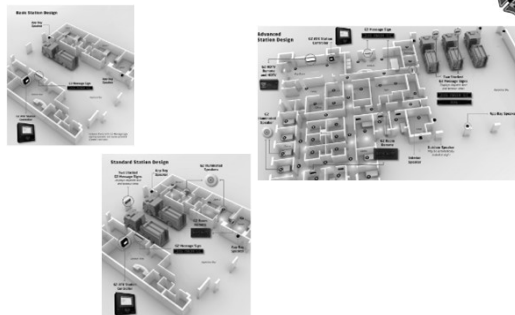
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Station Design The Processes (Cont.)



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Station Design Safety



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Station Design Safety (Cont.)



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Purchasing Law

Risk Management/Safety Programs –Section III

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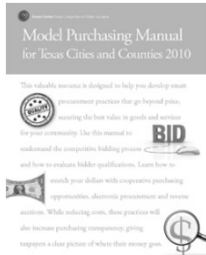


Objectives

- To review Purchasing requirements for governmental subdivisions in Texas.
- To review Best Practices for purchasing for other entities in Texas.
- To review Cooperative Purchasing Opportunities in Texas.






Texas State Purchasing


- Current Law
- Texas Purchasing Rules Simplified
- TCPA Model Purchasing Manual

Texas COOP Purchasing



- Texas Cooperative Purchasing Manual
- Texas Cooperative Purchasing Program
- HGAC
- Buy-Board
- Others
 - County Coops
 - COG's
 - Associations
 - Multiple Entity Programs




Highway Safety

Risk Management/Safety Programs –Session III

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Safe Highways Application and Reporting Program




SHRP2

- VFIS - Highway Safety
- TEEX – Safe Practices For Traffic Incident Responders
- **Mandated**
 - SFFMA – certification
 - TCFP
- **Purpose**



The National Highway Traffic Safety Administration (NHTSA) is one of 11 agencies within the Department of Transportation and is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes.

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SHRP2 (Cont.)



- **Federal guideline for all traffic control nationwide**
- **It also covers all “workers” on all streets, roadways, or highways**
- **This course addresses what is required to adhere to (Manual on Uniform Traffic Control Devices) TMUTCD standards**

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SHRP2 (Cont.)





- The three factors most frequently reported as contributing to emergency service personnel's death were:
 - Lack of visibility of the victim,
 - Distractions, and
 - Blinding caused by emergency vehicles at the incident.
- TMUTCD vs NFPA
 - Texas - Responders....should initiate procedures to have the appropriate temporary traffic controls setup."
 - NFPA - "The first arriving unit shall ensure that traffic is controlled before addressing emergency operations."


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SHRP2 (Cont.)





- Scope
 - Responder Safety
 - Incident Notification
 - Incident Blockage
 - Closure of Roadway/Highway by Firefighter
 - Quick Clearance Reduces Secondary Crashes
 - Three types of work durations :
 - Minor (less than 30 minutes)
 - Intermediate (30 minutes - 2 hours)
 - Major (more than 2 hours)
 - Moving Drivable Vehicles off Freeways
 - Cargo Removal
 - Debris Removal
 - Prompt, reliable, interoperable communications.




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Conclusion





- Create Awareness
- Improve Safety
- Reduce Your Risk




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Hazardous Materials

Risk Management/Safety Programs –Session III



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Hazard Materials Federal Regs.




Federal Regulations



- **1910.120**
 - Scope - Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.
 - Definitions –
 - Emergency response or responding to emergencies means a response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of this standard. Responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

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Hazard Materials Federal Regs. (Cont.)



- Emergency response organizations may use the **local emergency response plan** or the **state emergency response plan** or both, as part of their emergency response plan to avoid duplication. Those items of the emergency response plan that are being properly addressed by the SARA Title III plans may be substituted into their emergency plan or otherwise kept together for the employer and employee's use.
- The senior emergency response official responding to an emergency **shall** become the individual in charge of a site-specific **Incident Command System (ICS)**. All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer. **OSHA Requirement**
- The individual in charge of the ICS **shall designate a safety officer**, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand. **OSHA Requirement**

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Department of Transportation (DOT)



OSHA 1910.120(q) and EPA 311 apply to employers whose employees are engaged in emergency response to hazardous materials incidents. Employer responsibilities under these regulations fall into four primary areas:



- Development of an emergency response plan
- Development of specific procedures for handling hazardous materials incidents
- Training requirements
- Health and safety requirements (medical monitoring for the use of chemical protective clothing and exposure records)

- **First Responder Awareness Level - No Hour Requirement**
 - An understanding of what hazardous materials are and the associated risks
 - An understanding of potential outcomes when hazardous materials are present
 - The ability to recognize the presence of hazardous materials
 - An understanding of the first responder's role and use of the North American Emergency Response Guidebook
 - The ability to recognize the need for additional resources and the knowledge of the procedures to make the appropriate notifications


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Department of Transportation (DOT) (Cont.)





- **First Responder Operations Level - OSHA minimum requirement = awareness + 8 hours at operations level**
 - Know basic hazard and risk assessment
 - Know how to select and use protective equipment provided to the first responder
 - Understand basic hazardous materials terms.
 - Know how to perform basic control, containment, and/or confinement operations within the capabilities of their resources and protective equipment
 - Know basic decontamination procedures
 - Understand relevant SOP's and termination procedure


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Department of Transportation (DOT) (Cont.)





- **Hazardous Materials Technician - OSHA minimum requirement = 24 hours at operations level + technician training**
 - Know how to implement the employer's emergency response plan
 - Know how to identify materials by using field survey instruments
 - Be able to function in an assigned role in the incident command system
 - Know how to select and use specialized personal protective equipment
 - Understand hazard and risk assessment techniques
 - Be able to perform advanced control and containment operations within the resources and equipment available.
 - Understand and implement decontamination procedures

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Department of Transportation (DOT) (Cont.)

- **On Scene Incident Commander - OSHA minimum requirement = 24 hours at operations level + incident commander training**
 - Are able to implement the employer's incident command system
 - Are able to implement the employer's emergency response plan
 - Understand the risks associated with working in chemical protective clothing
 - Know how to implement the local emergency response plan
 - Know of the State emergency response plan and the Federal regional response team
 - Understand the importance of decontamination
- **Safety Officer at Hazardous Materials Incidents and Hazardous Materials Branch Safety Officer**
 - Identify and evaluate hazards, and assist in developing a safe response plan
 - Identify and evaluate unsafe operations, activities, and/or conditions
 - Identify appropriate interventions and coordinate with incident commander

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**Department of Transportation (DOT) (Cont.)**

- **Terrorist Incident Response Training Guidelines:**
 - More Detailed / Recommended Training Objectives

First Responder at Awareness Level			
Audience	Prerequisites	Training	Refresher
Very broad. All who may first respond to hazmat incidents.	None	<ul style="list-style-type: none"> • No length required; 4-16 hours is common practice • Traditional classroom format. • Competencies: <ul style="list-style-type: none"> • Understanding of hazmat and the role of first responder. • Ability to recognize and identify hazmat. 	Very broad. All who may first respond to hazmat incidents.

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**Department of Transportation (DOT) (Cont.)**

- **Terrorist Incident Response Training Guidelines: (Cont.)**
 - More Detailed / Recommended Training Objectives

First Responder at the Operations Level			
Audience	Prerequisites	Training	Refresher
Broad. All who may participate in initial operations at a hazmat incident	First Responder Awareness training.	<ul style="list-style-type: none"> • 8-40 hours (minimum 8 required). • Classroom and simulator/field instruction. • Competencies: <ul style="list-style-type: none"> • Understanding of hazmat terms, basic hazard and risk assessment, and role of first responder at operational level. • Ability to perform basic control, containment and/or confinement techniques with proper use of personal protective equipment and following standard operating procedure. • Ability to implement basic decontamination procedures. 	<ol style="list-style-type: none"> 1. Competency retesting of all response skills. 2. Technical information updates. 3. Incident scene decision-making using simulated emergencies.

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Department of Transportation (DOT) (Cont.)



- **Terrorist Incident Response Training Guidelines: (Cont.)**
- More Detailed / Recommended Training Objectives

Hazardous Materials Technician			
Audience	Prerequisites	Training	Refresher
Narrow. Prospective hazardous materials team members and others who are designated in response plans as a general resource to perform advanced defensive/offensive operations at all anticipated hazardous materials emergencies.	1. First Responder Awareness training. 2. First Responder Operations training (min. 24 hours required).	<ul style="list-style-type: none"> • 40-240 hours. • Classroom and simulator/field instruction, with emphasis on hands-on training. • Competencies: <ul style="list-style-type: none"> • Knowledge of role of technician within incident command system and responsibilities within employer's emergency response plan. • Knowledge of hazardous materials terminology, behavior, and ability to perform advanced hazard and risk assessment using field survey instruments and equipment. • Ability to perform advanced control, containment and/or confinement techniques - Ability to select and use specialized personal protective equipment. • Ability to implement decontamination procedures. • Knowledge of termination procedures. 	<ol style="list-style-type: none"> 1. Competency retesting of all response skills. 2. Technical information updates. 3. Incident scene decision-making using simulated emergencies.

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Department of Transportation (DOT) (Cont.)



- **Terrorist Incident Response Training Guidelines: (Cont.)**
- More Detailed / Recommended Training Objectives
- Incident Commander - OSHA requirement=24 hours Operations training + Incident Commander training

Audience	Prerequisites	Training	Refresher
Moderate in size. Responders whose level of command responsibility may include incident commander of all phases of a terrorist incident, from initial response through distribution to incident termination.	1. First Responder Awareness training. 2. First Responder Operations training (min. 24 hours required).	<ul style="list-style-type: none"> • 96-40 hours. • Classroom and simulator/field instruction, with emphasis on incident management and resource coordination. • Competencies: <ul style="list-style-type: none"> • Knowledge of role of incident commander within incident command system and response plan. • Knowledge of state and federal emergency response plans. • Ability to manage and coordinate a hazard incident response, including supervising hazard and risk assessment, coordinating control, containment and confinement operations, ensuring proper use of personal protective equipment, employing proper notification procedures, and ensuring correct decontamination procedures. • Ability to implement transfer of command and incident termination procedures. 	<ol style="list-style-type: none"> 1. Review of command structure, ICS, etc. 2. Information updates on state and federal response plans. 3. Incident scene practice: incident scene management, coordination and decision-making using simulated emergencies.

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Department of Transportation (DOT) (Cont.)



- **Terrorist Incident Response Training Guidelines: (Cont.)**
- More Detailed / Recommended Training Objectives
- Safety Officer at Hazardous Materials Incidents (OSHA) and Hazardous Materials Branch Safety Officer (NFPA)

Audience	Prerequisites	Training	Refresher
Small in number. Safety Officer (OSHA) Responders at the inc. command level with potential for assignment as incident safety officer. Branch Safety Officer (NFPA) Responders at the incident level with potential for assignment as the haz mat branch safety officer level.	Prior training and demonstrated competency at the awareness, operational, and inc. command levels. Prior training and demonstrated competency at the awareness, operational, and technician levels.	<ul style="list-style-type: none"> • No specific length of training is recommended or commonly in use. Length of training should be sufficient to allow students to achieve competency. • Classroom, lab, and field exercise formats recommended, with an emphasis on real time field simulations requiring practice in developing safety response plans and identifying safety problems during the implementation of the response plan. • Competencies: <ul style="list-style-type: none"> • Analyzing the incident. • Assisting in developing a safe response plan. • Assisting in implementing the response plan safely. • Evaluating the response for safety problems. 	<ol style="list-style-type: none"> 1. Technical information updates. 2. Using simulated emergencies, refreshing ability to analyze incident and develop safe response plans. 3. Using simulated emergencies, refreshing ability to evaluate the response and identify safety problems and needed interventions.


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Conclusion






Training should provide a working knowledge of the benefits and limitations of various protection strategies, including evacuation, in-place protection, and a combination thereof. Participants should gain an understanding of the need for protective action planning and important planning considerations. They should develop the ability to implement a decision-making process for any given hazardous materials emergency or terrorist incident situation and respective protective action options, and learn strategies and techniques for communicating the desired protection action to the general public to elicit the best possible response.

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Response to Violent Incidents

Risk Management/Safety Programs –Session III


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Response to Violent Incidents





Achieve Readiness Levels

- Assign this responsibility to one or more department members who are:
 - Knowledgeable
 - Communicates effectively with other disciplines
- Consider Partnering
- Demonstrate commitment, set timelines
- Assess your Readiness
- Improve readiness
- Keep all materials to checklist

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TIFMAS /AHIMTs

Risk Management/Safety Programs –Session III

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TIFMAS /AHIMTs

- Texas Intrastate Fire Mutual Aid System (TIFMAS) – Annex F – tifmas.org**
- Maintained by Texas A&M Forest Service.
 - Includes grants, training, qualifications and mobilization systems to make statewide use of local resources.

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AHIMTs

- Texas All Hazard Incident Management Team (AHIMT) – Master Plan**
- To provide qualified Type 3 All-Hazards Incident Management Teams (AHIMT) for the State of Texas and its political subdivisions capable of **supporting and assisting** in the management of **natural and manmade emergencies**, disasters, and acts of terrorism.


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Resources (VFIS University)



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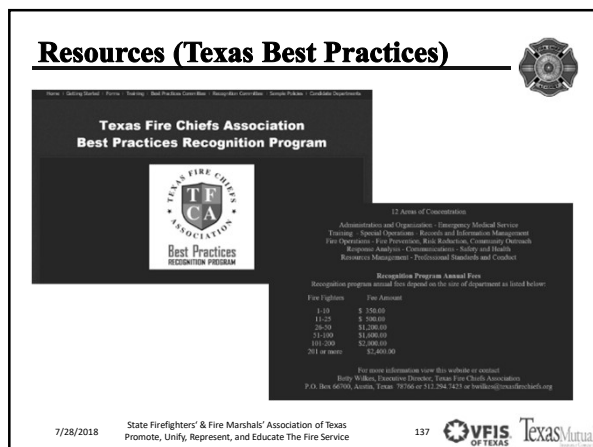
Distance Learning

Our distance efforts to improve skills and operations in the fire and EMS services through education, training, and management are the responsibility of:



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How to Develop a SOP/SOG



- A Standard Operating Procedure (SOP) is a document consisting of step-by-step information on how to execute a task. An existing SOP may need to just be modified and updated.
- Configuring Your Document
 - No formal template - make it simple
 - Make documents consistent – easier to read and to comprehend
 - Consider your audience
 - Consider your knowledge
 - Decide between a short or long-form SOP
- Keep your SOP purpose in mind to:
 - Ensure compliance standards are met
 - Maximize production requirements
 - Ensure the procedure has no adverse impact on environment
 - Ensure safety
 - Ensure everything goes according to schedule
 - Prevent failures in manufacturing
 - Be used as training document

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Writing Your SOP/SOG



- Cover the necessary material
 - Title page
 1. the title of the procedure,
 2. an SOP identification number,
 3. date of issue or revision,
 4. the name of the agency/division/branch the SOP applies to, and
 5. the signatures of those who prepared and approved of the SOP.
 - Table of Contents (Consider Length) Quality Assurance/Quality Control - like performance evaluation samples
 - Reference - cite significant references

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Writing Your SOP/SOG (cont.)



- Procedure itself
 - Scope and Applicability (Purpose)
 - Methodology and Procedures (Meat)
 - Terminology - Identify acronyms, abbreviations, and all phrases that aren't in common parlance
 - Health and Safety Warnings
 - Equipment and Supplies
- Cautions and Interferences
- Make your writing concise and easy to read
- Get personnel's feedback which the policy/guideline effects
- Break up large chunks of text with diagrams and flowcharts
- Control document notation (ID Numbers)

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Writing Your SOP/SOG (cont.)



- **Ensuring Success and Accuracy**
 - Test the Procedure
 - Personnel Review
 - Implementation

[illegible]

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Personal Health and Wellness

Risk Management/Safety Programs –Session III

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Today's Focus, YOU



- I will not be telling you to do anything, you have to want it, and you can...
- This is not a professional health class, just some simple ideas to help you improve your life style in small steps
- The number one rule, don't over do it and seek a doctor's input if you have health concerns.
- Simple exercises and Stretching
- Nutrition

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Except It!

Is this realistic?

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Problems (Diet Plans)

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Problems (Meal Supplements)

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Problem (Exercise Programs)





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So

- Where do I need to go to exercise?
- What supplements are best for me?
- What nutritional program do I need to adapt too?
- What programs are the best for me overall?

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The answer is still simple, YOU!

Meaning:

- Your Life
- Your need
- Your time
- Your Commitment
- Your Family
- Your Job
- Your Fun Time
- Your, Your, Your....



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Your Schedule


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Schedule




- **First and foremost:**
 - How long
- **Morning – Lunch – Evening**
 - Time driven
 - Feel Your Best
 - Schedule
 - Becoming an early bird



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What can I do to live healthy



- **First and Most important:**
 - You have to want it
 - Are you treating the symptoms
- **Small Steps**
 - First Give up something you know is bad, soda, bread, etc....
 - Exercise – stretching, walking, weight, lifting, push-ups, working in the yard, start a garden, something
 - Drink water
 - If you need it get a partner
 - Do it different – stand instead of sitting
 - Pick up a sport

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Foods

Published on Apr 19, 2017

Within hours of eating an unhealthy meal, we can get a spike in inflammation, crippling our artery function, thickening our blood, and causing a fight-or-flight nerve response. But there are foods we can eat at every meal to counter this reaction

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What can I do to live healthy (Cont.)



Artificial sweeteners are man-made substitutes for table sugar in food and beverages. Popular artificial sweeteners include: acesulfame K (Sweet One®), aspartame (Equal, NutraSweet®), cyclamate (Sugar Twin®), erythritol (Zsweet®), saccharin (Sweet'N Low®), stevia (Truvia®, Pure Via®), sucralose (Splenda®), xylyl (XyloSweet®) and sorbitol.

Sweeteners:

- Sweet One® - has been associated with various cancers in studies.
- Equal, NutraSweet® - Around 92% of independent studies Adverse health effects reported include: pre-term births, fibromyalgia, hypertension, brain disorders, blood platelet disorders, migraine headaches and
- Truvia®, Pure Via®, - The resulting steviol glycosides in the consumer product are converted into steviol in the gut, which may be toxic and cause mutagenic DNA damage in great enough quantities. .



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What can I do to live healthy (Cont.)



Artificial sweeteners are man-made substitutes for table sugar in food and beverages. Popular artificial sweeteners include: acesulfame K (Sweet One®), aspartame (Equal, NutraSweet®), cyclamate (Sugar Twin®), erythritol (Zsweet®), saccharin (Sweet'N Low®), stevia (Truvia®, Pure Via®), sucralose (Splenda®), xylyl (XyloSweet®) and sorbitol.

Sweeteners (cont.):

- Zsweet® / XyloSweet® - are used in consumer products like gum, sugar-free candies and toothpaste. Studies show these two sweeteners may draw fluid into the colon in digestion and have a laxative effect.



Studies show a direct relationship between consumption of foods containing artificial sweeteners and weight gain. The reasons for this are: 1) "reverse causation", i.e., the more weight people gain, the more they consume artificial sweeteners to try to offset the weight gain, 2) overcompensation for expected calorie reduction (e.g., having a diet cola with a double cheeseburger) and 3) the appetite-promoting effect of sweet substances on the tongue versus the appetite suppression effect of actual calories in the gut.

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What can I do to live healthy (Cont.)



... white bread may be associated with increased cancer risk, especially prostate cancer. There are few antioxidants in white bread. Eating white bread also seems to have a negative effect on cognitive function and it appears to increase our insulin level.

On the other hand, unrefined, whole grains have been associated with lower risk of diabetes, heart disease, and cancer. Rye intake may be associated with lower breast and prostate cancer risk.

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What can I do to live healthy (Cont.)



Food for your health

- **Green Tea** - drink 4-5 cups a day speed up your metabolism and even burn more calories in your sleep
- **Roasted Brussels Sprouts** - They're excellent weight loss foods
- **Chicken** - supply of protein content, the supply of essential vitamins and minerals, benefits in losing weight, cholesterol control, blood pressure control, and a reduced risk of cancer



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What can I do to live healthy (Cont.)



- Know your (BMR) Basal Metabolic Rate - is an estimate of how many **calories** your body burns at rest. It represents the minimum amount of energy needed to keep your body functioning, including breathing and keeping your heart beating.
- Eat to Your BMR <https://www.bodybuilding.com>
- Become a Burner not a Dieter
- Tape Measurer vs Weight Watcher
- A hand full
- Consistency not Perfection


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What can I do to live healthy (Cont.)



2-3 tbsp.
Healthy Fats
Olive Oil, Avocado,
Peanut Oil,
Salmon,
Nuts, and Butter

Lean Protein
(3-6 oz.)



Green Stuff
Non-Starchy
(Unlimited)

**Whole Grain &
Starchy Carbs**
(6-12 oz.)

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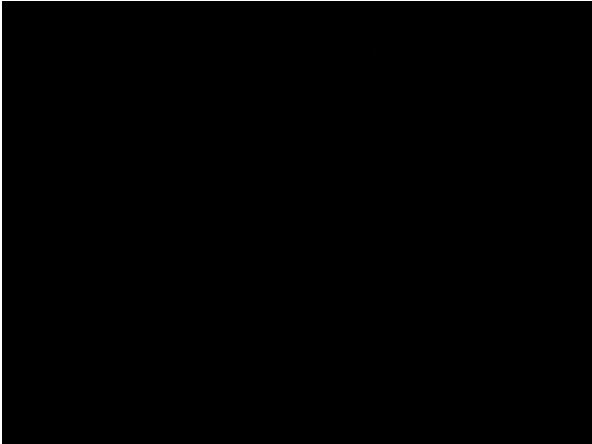



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Conclusion

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Risk Management Committee Responsibility



- Facilities
- PPE/SCBA
- Health and Wellness
- Vehicle Maintenance
- Public Education / Relations
- Scene Operations / Safety
- Communications

- Accountability
- Incident Management
- Exposure Control
- Crew Resource Management
- Workplace Safety
- Education
- Administration
- Disaster Preparedness
- Hazardous Materials
- Preplanning
- Vehicle Operations
- Incident Reporting
- Water Supplies


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Group Activity







List on paper how many safety hazards you find?

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Homework Assignment



- **Assignment**

- Develop three Risk Management policies for your agency

Examples:

- Driving and Driver requirement policy
- PPE wearing and inspection policy
- Requirements for Fireground Strategy and Tactics in relation to Resource availability

- View Backdraft Movie

- List safety hazards founded
 - What is the root cause

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