

Training Safety Protocols

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Safety Overview

- We are all committed to providing firefighter and emergency response training that is:
 - Safest Training Available
 - Highest Quality

Common Safety Concerns

- Implementing a Safety Program
- Student PPE Requirements
- Common Medical Calls
 - Heat Stress
 - Pre Existing Medical Conditions
- Severe Weather
- NFPA 1403 Compliance
- Fuels
- Communications

Safety Program

- There are no excuses for injuring students during training
- There are consequences for injuring students during training

Safety Program

- Safety Program requires written procedures
- Procedures are dependent on activities conducted at the training site
 - Training
 - Maintenance
 - Contractors
- Must meet all local, state, and federal requirements
- Should meet NFPA standards where applicable

Safety Manual

- Training Safety
- Accident Investigations
- PPE Requirements
- Fall Protection
- Vehicle / Equipment Operation
- Safety Inspections
- Hazardous Work Permits
- Severe Weather
- Field Start Up / Shutdown
- Fueling Procedures
- NFPA 1403 Forms
- Safety Forms

Student PPE Requirements

- How do you determine the appropriate level of protection
- Once determined how do you communicate it to the students?
- Our solution – Student Safety Manual
 - Helps communicate expectations
 - Helps establish a safety culture
 - Makes safety part of their routine during responses
 - Available on-line

Student Safety Manual

- Provides a quick reference to all PPE and safety guidelines
- Available on-line since January 2007
 - <http://teex.com/esti>
- Annual School guest instructors and students receive a manual in their registration packet
- Part of all contracts
- Provided to safety officers/ERT coordinators
- Available to all students during registration

TEEX/ESTI Student Safety Manual

- Go to: <http://teex.com/fire>
- Click on the Field Safety link on left side of page
- Downloads
 - ESTI Student Safety Manual

Heat Stress

- A contributing cause of two recent training fatalities in the US
- Has become more of a factor in recent years
 - Aging work force
 - Younger generation less acclimated
 - Sedentary lifestyle

Heat Stress

- How can you accomplish training during high ambient temperatures?
 - Avoidance of alcoholic beverages
 - Hydration policy
 - Hydration Chart
 - Heat Index Flags
 - Early intervention: instructors and staff
 - Medics on staff
 - Rehab facility
 - Transport capabilities
- Emphasize quality rather than quantity of burns
- Student Safety Manual

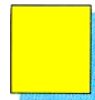
USING YOUR URINE AS A GUIDE TO SELF HYDRATION



Dark Yellow - Orange
Dangerously low hydration level
Drink at least 1 quart ASAP



Dark Yellow
Very low hydration level
Drink 1 quart in the next 15 minutes



Yellow
Low hydration level
Drink 1 quart in the next 30 minutes



Light Yellow
Adequate hydration level
Drink 1 quart over the next hour



Clear
Good hydration level
Drink 1 quart over the next 2 hours

Hydration Guide

- Go to: <http://teex.com/fire>
- Click on the Field Safety link on left side of page
- Downloads
 - Hydration Guide

Water Consumption Table

Heat Category	Water Intake (qt/hr)	Water Intake (qt/hr)	Water Intake (qt/hr)
White Flag Low Risk	1/2	3/4	3/4
Green Flag Caution	1/2	3/4	1
Yellow Flag Extreme Caution	1.5/2	3/4	1
Red Flag Risk	1.5/2	3/4	1
Black Flag High Risk	1	1	1

Pre Existing Medical Conditions

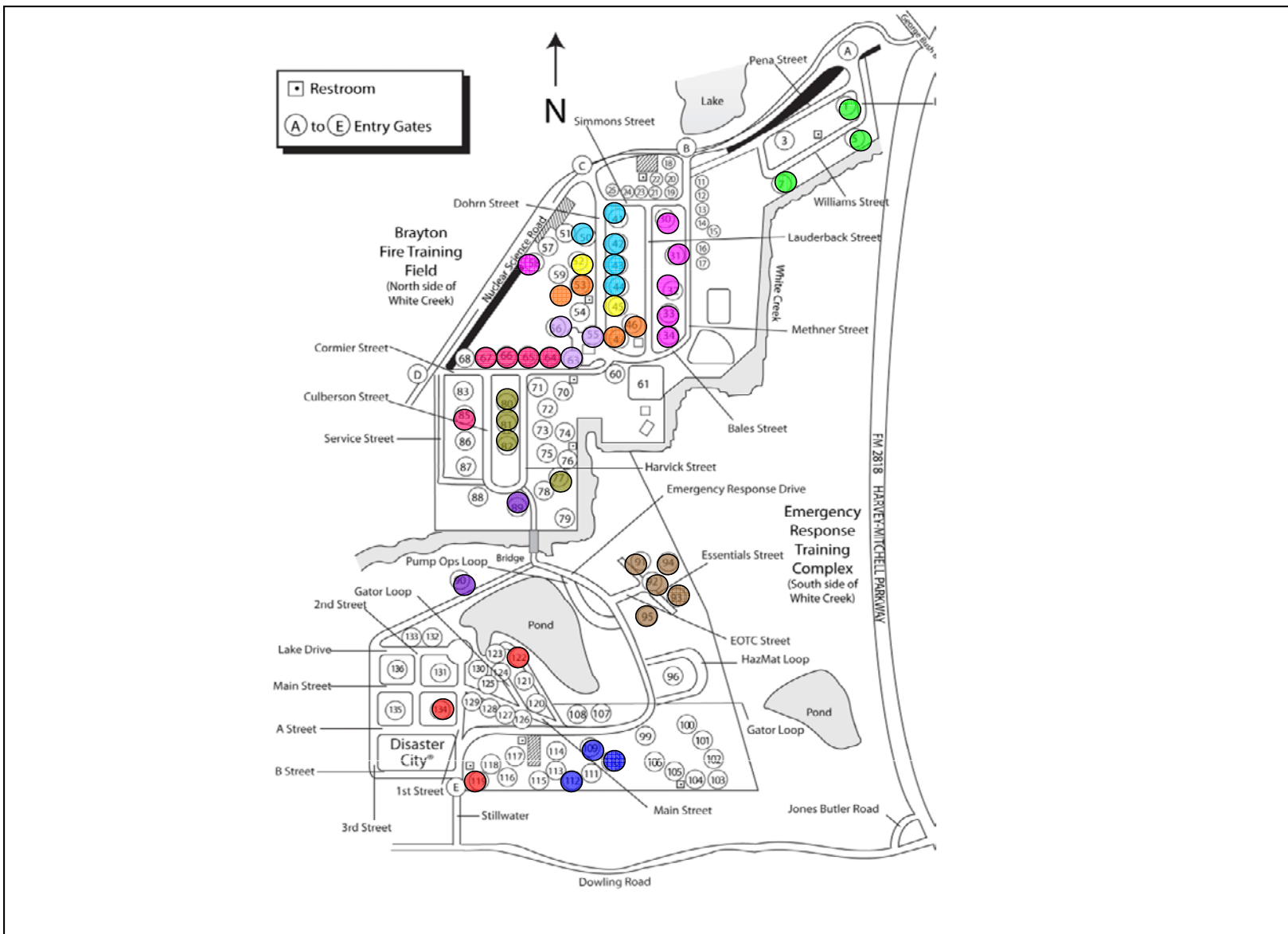
- Significant number of medical calls each year
- Orthopedic and cardiovascular most common
- Instructor is typically not aware of the condition
- We can't control students lifestyle choices
- How do we combat this problem?

Field Paramedics

- TEEEX utilizes Field Paramedics during:
 - All training – classroom or hands-on
 - All maintenance activity
- All medics are full time CSFD firefighter/paramedics
- Advanced life support capabilities
- All protocols & equipment match CSFD
- Primary calls are heat related or pre-existing medical conditions
- Also serve as Field Safety Officers

Severe Weather

- Need some means to monitor weather
 - Internet
 - Cable / Satellite TV
 - Portable / hand held lightning monitors
 - Fixed lightning prediction systems
- Identify safe havens
- Communicate plan to staff and students
- Student Safety Manual



Severe Weather Procedure

- 15 second blast closes the field
- 3 five second blasts reopens the field
- Dependent on severity of the approaching weather, field may be closed prior to alarm

NFPA 1403

- Chapter 1: Administration
- Chapter 2: Referenced Publications
- Chapter 3: Definitions
- Chapter 4: Acquired Structures
- Chapter 5: Gas-Fired Training Center Buildings
- Chapter 6: Non-Gas-Fired Training Center Buildings
- Chapter 7: Exterior Props
- Chapter 8: Exterior Class B Fires

Why is NFPA 1403 Important?

Recruit fatality investigation

- Documented 33 Safety violations
- Department charged by state agency with
 - “Intentionally” and “knowingly” violating 33 safety rules
 - Resulting in “a substantial probability of death or serious physical harm”
- 17 of the safety violations also labeled willful
 - The employer committed an intentional and knowing violation; or
 - Acted with plain indifference to or in careless disregard of employer responsibilities

NFPA 1403: Structures & Facilities

- Instructors must be provided training on your 1403 SOP
- Inspected prior to training - PSA
 - Doors, windows, shutters, ventilation
 - No debris hindering access or egress
- Placement of backup lines
- Designate emergency evacuation route



NFPA 1403: Structures & Facilities

- Pre-burn safety briefing prior to evolution
 - Includes project walk through
- Assignments made for crews
- Pre-burn plan prepared and utilized
- Accountability system

Emergency Evacuation Plan

- Develop plan prior to burn
- TEEEX plan:
 - Establish evac route based on training scenario
 - 3- blasts of an air horn evacuates project
 - Instructors shall remain with hose/rescue teams at all times during project evacuation
 - Instructors shall open any windows/doors along evacuation path
 - RIT Team immediately starts PPV fans

Rapid Intervention Team

- RIT composed of instructors and/or certified firefighters – not students
- A minimum of one RIT will be established for each burn evolution.
- RIT in full PPE including SCBA
- PPV Fan at each point of entry
- Charged hand line at each point of entry

Accountability System

- TEEEX accountability system consists of
 - Student Sign in Sheet
 - Two part tag system
 - Two accountability boards
 - 1 portability board
 - 1 stationary board

Accountability Tags



Fuels – Interior Projects

- Fuel load will be limited to avoid uncontrolled flashover or excessive heat (**above 700°F at TEEX**)
- Used only in amounts necessary to create the desired fire size or heat load
- Pressure treated wood, rubber, plastic, and chemically treated hay not permitted
- Fires shall not be located in any designated exit paths
- **Remember:** We are teaching technique – not experience

Fuels – Interior Projects

- TEEX uses hay as fuel
- Thermal imaging used to determine fuel load per room
- Easily generates 700°F
- Additional “smoker” barrels used when needed for smoke generation
- Protects students and structure from excessive heat loads

Safety Forms

NFPA 1403 Compliance

- Interior Project Safety Analysis
- Interior Pre-Burn Plan

Interior Project Safety Analysis

Utilized to:

- Ensure burn prop integrity
- Documents findings
- Tracks work order completion
- Accountability for person completing inspection

Interior Project Safety Analysis

Interior Project Safety Analysis					
Project Name:		Project #:			
		Date:			
<i>Project Inspection</i>					
		Pass	Fail	Marginal	N/A
1. Walking Surfaces					
2. Doors Operational					
3. Door Frames					
4. Door Hinges					
5. Door Latches					
6. Windows Operational					
7. Window Frames					
8. Window Hinges					
9. Window Latches					
10. Stairs/Ladders					
11. Emergency Egress Route Clear					
12. Project Free of Wasps or Other Biting/Stinging Pests					

Interior Project Safety Analysis

Project Pad

	Pass	Fail	Marginal	N/A
13. Walking Surfaces Clear and Algae Free				
14. Access to Area				
15. Water Main Operational				
16. Drain Covers in Place				
17. Shelter Area				
18. Shelter Free of Wasps or Other Biting/Stinging Pests				

Interior Project Safety Analysis

Comments:

Work Order(s)

1. Date Submitted:

2. Date Completed:

Signature of Person Performing Inspection:

Signature of Program Coordinator/Supervisor:

THIS FORM WILL BE COMPLETED DAILY FOR ALL INTERIOR TRAINING PROJECTS

Interior Project Safety Analysis

- Go to: <http://teex.com/fire>
- Click on the Field Safety link on left side of page
- Downloads
 - Project Safety Analysis

Interior Pre-Burn Plan

Utilized to:

- Designate IC & Safety Officer
- Establish 5:1 Instructor/Student Ratio
- Ensure compliance with NFPA 1403

Interior Pre Burn Plan

NFPA 1403 Interior Pre-Burn Plan	
Date:	
Project Name:	Project #:
Instructor-In-Charge/Incident Commander:	
Safety Officer:	
Additional Safety Personnel:	

Interior Pre Burn Plan

<i>Crew Assignments</i>	
Initial Attack Company:	Secondary Attack Company:
Instructor	Instructor
1	1
2	2
3	3
4	4
5	5
Search & Rescue Company:	Ventilation Company:
Instructor	Instructor
1	1
2	2
3	3
4	4
5	5

Interior Pre Burn Plan

Rapid Intervention Team (RIT):	Backup Line(s):
Instructor	Instructor
1	1
2	2
3	3
4	4
5	5

Interior Pre Burn Plan

The project board is to be utilized as needed to indicate the items below

	Yes/No (Circle One)	
Backup Lines and Location Established	Yes	No
Structure Entry Point Established	Yes	No
Emergency Evacuation Plan Reviewed	Yes	No
Emergency Evacuation Horn Demonstrated	Yes	No
Operations Area Established	Yes	No
Rehab Plan Established	Yes	No
Personnel Accountability Prior to Entry	Yes	No
Personnel Accountability After Exiting Project	Yes	No
Project Walk Through Completed	Yes	No

Interior Pre Burn Plan

Attack Strategy:	Diagram
Tactical Plan:	

Interior Pre-Burn Plan

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Communications

- A large training venue is comparable to a protracted response
- Must ensure communications from the school leadership down to the student level
- ICS is directly applicable to this type of training event
- Implementing an ICS also provides a training opportunity for the instructors and students



Training Action Plan

81st Municipal Annual School

July 25 - 30, 2010



Training Action Plan

- Provides a systems approach to training safety
- Required by TEEEX for all large schools that utilize guest instructors (since 2005)
 - Harris County School
 - Spring School
 - Spanish School
 - Industrial School
 - Municipal School
- Based on NIMS forms / Incident Action Plan

Training Action Plan

- Daily Sit/Stat meetings at beginning and end of training day for school leadership
- School leadership disseminates information to their subordinates
- Vast improvement in communications and accountability

Training Action Plan

- Org Chart
- Assignment List
- Overall School Objectives
- Resource Request
- Daily Brief Log
- Lightning Procedure
- Transportation Plan
- Field Evacuation Plan
- Lunch Plan
- Testing Plan
- Medical Plan
- Mass Casualty Plan
- Health & Safety Message
- Communications Plan
- Golf Cart Assignments
- Radio Assignments
- Field Schedule

Training Safety Protocols

Questions ...Thoughts...Comments