

**FIRE FIGHTER ADVISORY COMMITTEE
AGENDA**

March 23, 2017, 10:00 A.M.

1701 N. Congress Ave., William B. Travis Building, Room 1-104, Austin, Texas

The Fire Fighter Advisory Committee will convene in open session to deliberate and possibly take formal action on any of the following agenda items:

- 1. Roll call - 10:00 a.m.**
- 2. Election of officers.**
- 3. Adoption of September 22, 2016 Fire Fighter Advisory Committee meeting minutes.**
- 4. Report from the Curriculum and Testing Committee with discussion and possible action on recommendations regarding possible changes to the Certification Curriculum Manual, including but not limited to:**
 - a. Basic Wildland overview, course instructor information, outline and reference list.**
 - b. Basic Fire Inspector Curriculum reference list.**
 - c. Hazmat Incident Commander reference list.**
- 5. Discussion and possible action regarding, Chapter 425, Fire Service Instructors, including but not limited to, §425.1, Minimum Standards for Fire Service Instructor Certification, §425.3, Minimum Standards for Fire Service Instructor I Certification, §425.5, Minimum Standards for Fire Service Instructor II Certification and §425.7, Minimum Standards for Fire Service Instructor III Certification, and §425.9, Minimum Standards for Master Fire Service Instructor III Certification, and §425.11, International Fire Service Accreditation Congress (IFSAC) Seal.**
- 6. Discussion and possible action regarding, Chapter 431, Fire Investigation, including but not limited to, Subchapter A, Minimum Standards For Arson Investigator Certification, §431.1, Minimum Standards for Arson Investigation Personnel, §431.1, Minimum Standards for Basic Arson Investigator Certification, §431.5, Minimum Standards for Intermediate Arson Investigator Certification, §431.7, Minimum Standards for Advanced Arson Investigator Certification, §431.9, Minimum Standards for Master Arson Investigator Certification, §431.11, Minimum Standards for Arson Investigator Certification for Law Enforcement Personnel, and §431.13, International Fire Service Accreditation Congress (IFSAC) Seal; Subchapter B, Minimum Standards For Fire Investigator Certification, §431.201, Minimum Standards for Fire Investigation Personnel, §431.203, Minimum Standards for Fire Investigator Certification, §431.205, Minimum Standards for Intermediate Fire Investigator Certification, §431.207, Minimum Standards for Advanced Fire Investigator Certification, §431.209, Minimum Standards for Master Fire Investigator Certification, and §431.211, International Fire Service Accreditation Congress (IFSAC) Seal—Fire Investigator.**
- 7. Discussion and possible action regarding, Chapter 443, Curriculum Manual, including but not limited to, §443.1, Curriculum Approval by the Fire Fighter Advisory Committee, §443.3, Curriculum Approval by the Texas Commission on Fire Protection, §443.5, Effective Date of**

New Curricula or Changes to Curricula Required by Law or Rule, §443.7, Effective Date of New Curricula or Changes or Revisions to Existing Curricula Which Are Voluntary, and §443.9, National Fire Protection Association Standard.

- 8. Discussion and possible action regarding, Chapter 453, Hazardous Materials, Subchapter A, Minimum Standards for Hazardous Materials Technician, including but not limited to, §453.1, Hazardous Materials Technician Certification, §453.3, Minimum Standards for Hazardous Materials Technical Certification, §453.5, Examination Requirements, and §453.7, International Fire Service Accreditation Congress (IFSAC) Seal; Subchapter B, Minimum Standards For Hazardous Materials Incident Commander, §453.201, Hazardous Materials Incident Commander Certification, §453.203, Minimum Standards for Hazardous Materials Incident Commander, and §453.205, Examination Requirements**
- 9. Discussion and possible action regarding, Chapter 455, Minimum Standards for Wildland Fire Protection Certification, including but not limited to, §455.1, Minimum Standards for Wildland Fire Protection Personnel, §455.3, Minimum Standards for Basic Wildland Fire Protection Certification, §455.5, Minimum Standards for Intermediate Wildland Fire Protection Certification, and §455.7, Examination Requirements.**
- 10. Discussion of the 2016 data collected on fire fighter injuries, and possible action on developing recommendations to be submitted to the commission for approval and inclusion in the annual report to be sent to the State Fire Marshal's Office.**
- 11. Discussion and possible action on setting future meeting dates, locations and agenda items.**
- 12. Adjourn meeting.**

1. **Roll call---10:00 a.m.**

2. Election of officers.

- 3. Adoption of the September 22, 2016 Fire Fighter Advisory Committee meeting minutes.**

TEXAS COMMISSION ON FIRE PROTECTION

Presiding Officer Jim Reidy called the September 22, 2016 meeting of the Fire Fighter Advisory Committee to order at 10:00 a.m. at the William B. Travis Building, 1701 N. Congress Ave., Room 1-104, in Austin, Texas.

Attending	Jim Reidy	Michael Wisko	Amado Cano, Jr.	Ken Swindle*	Keith Schmidt
	Jason Collier	Daniel DeYear	J. P. Steelman	Daniel Buford	

*absent entire meeting
**absent part of meeting

Staff	Tim Rutland	Deborah Cowan	Mark Roughton	Sylvia Miller	Joyce Guinn
	Paul Maldonado	David Gordon, Assistant Attorney General			

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1. Roll call Secretary J. P. Steelman called roll and a quorum was present.
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2. Adoption of Minutes A motion was made by Daniel DeYear and seconded by J. P. Steelman to approve the minutes of the June 2, 2016, fire fighter advisory committee meeting as discussed. The motion carried.
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3. Report from Curriculum & Testing Committee Pat McAuliff, Chair of the committee went over the committee's recommendations.

A motion was made by Jason Collier and seconded by J. P. Steelman to approve and recommend to the commission the proposed language for Incident Safety Officer curriculum with an effective date of January 1, 2017 as discussed. The motion carried.

A motion was made by Daniel DeYear and seconded by Amano Cano, Jr. to approve and recommend to the commission the proposed language for the Driver/Operator-Aerial curriculum with an effective date of January 1, 2017 as discussed. The motion carried.
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4. 37 TAC, Chapter 403 A motion was made by Mike Wisko and seconded by Jason Collier to approve for recommendation to the commission amendments to 37 TAC, Chapter 403, §403.5 as discussed. The motion carried.
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5. 37 TAC, Chapter 433 A motion was made by Jason Collier and seconded by Mike Wisko to approve for recommendation to the commission amendments to 37 TAC, Chapter 433, new Subchapter B, Minimum Standards For Driver/Operator-Aerial Apparatus, §433.201, §433.203 and §433.205 with changes as discussed. The motion carried.
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6. 37 TAC, Chapter 437 A motion was made by Mike Wisko and seconded by Daniel Buford to approve for recommendation to the commission amendments to 37 TAC, Chapter 437, new §437.19 as discussed. The motion carried.
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7. 37 TAC, Chapter 457 A motion was made by J. P. Steelman and seconded by Daniel DeYear to approve for recommendation to the commission amendments to 37 TAC, Chapter 457, §457.3 as discussed. The motion carried.
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8. Future meeting dates, locations agenda items The next meeting was scheduled for December 1, 2016 with start time TBD.
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9. Adjournment A motion to adjourn was made by Amano Cano Jr., and seconded by J. P. Steelman. The motion carried.

Jim Reidy
Presiding Officer

- 4. Report from the Curriculum and Testing Committee with discussion and possible action on recommendations regarding possible changes to the Certification Curriculum Manual, including but not limited to:**
 - a. Basic Wildland overview, course instructor information, outline and reference list.**
 - b. Basic Fire Inspector Curriculum reference list.**
 - c. Hazmat Incident Commander reference list.**

CHAPTER ELEVEN
BASIC WILDLAND FIRE FIGHTER
CURRICULUM OUTLINE

SECTION	SUBJECT	RECOMMENDED HOURS
Basic Wildland Fire Fighter		
1101-5.1 <u>4.1</u>	General	5 <u>4</u>
1101-5.2 <u>4.2</u>	Human Resource Management	0
1101-5.3 <u>4.3</u>	Preparedness	5 <u>4</u>
1101-5.4 <u>4.4</u>	Mobilization	0
1101-5.5 <u>4.5</u>	Suppression	30 <u>24</u>
<u>1101</u>	Performance Skills	<u>8</u>
TOTAL RECOMMENDED HOURS		40

*The **total** recommend hours ~~total~~ is based on a class of 12 students. Actual hours required will depend on the number of students, the number of examiners, availability of equipment, and the student skill level.

COURSE INSTRUCTOR INFORMATION

Instructor Qualifications

Basic Wildland Fire Fighter courses must be taught by a person meeting the requirements described in Chapter 427§307 of the TCFP Standards Manual.

Supplemental Information

Instructors are expected to provide supplemental information if the main reference text does not cover all of the knowledge requirements set forth in the NFPA standard.

Certification Testing

Testing for certification in the state of Texas will be based on the knowledge and skills requirements in chapter 4 of National Fire Protection Association (NFPA) 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*, 2016 edition. All training programs must strictly adhere to the NFPA standard.

All test questions and performance skills evaluations will be based on the NFPA Job Performance Requirements (JPRs), requisite knowledge objectives, and requisite skills objectives found in the NFPA standard. Additionally, questions and performance skill evaluations may include information found in, or derived from, the NFPA standard annex, particularly Annex A which includes explanatory material that may further clarify JPRs. The following is an example from NFPA 1051, section 4.5.2:

NFPA Standard/Curriculum	Explanation
4.5.2 Assemble and prepare for response, given an assembly location, an assignment, incident location, mode of transportation, and the time requirements, so that arrival at the incident with the required personnel and equipment meets agency guidelines.	NFPA JPR number 4.5.2
(A)* Requisite Knowledge: Equipment requirements, agency time standards and special transportation considerations (weight limitations), agency safety, and operational procedures for various transportation modes.	Requisite knowledge objectives for 4.5.2 Written test questions and/or performance skills will be used to test these knowledge components on the state certification exam.
(B) Requisite Skills: None specified.	Requisite skills objectives for 4.5.2

	Only performance skills will be used to test these objectives on the state certification exam. In this example, there are no skills specified, so there will be no skills tested.
A.4.5.2(A): Personal equipment standards, response and travel time standards, personal equipment weight limitations, and preferred modes of transportation all can vary by the AHJ.	Appendix A: Explanatory Material for 4.5.2(A)

TCFP Standards Manual

It is critical that the Course Instructor review the chapters in the TCFP Standards Manual that apply to this curriculum. Of primary importance are the following chapters:

Chapter 421, *Standards for Certification*

Chapter 427, *Training Facility Certification*

Chapter 435, *Fire Fighter Safety*

Chapter 437, *Fees*

Chapter 455, *Standards for Wildland Fire Protection Certification*

These chapters do not address every issue that could impact this curriculum; therefore, the Course Instructor is encouraged to become familiar with the TCFP Standards Manual.

Descriptions of Certification Levels

For additional information, see Chapter 421 of the Texas Commission on Fire Protection Standards Manual for Fire Protection Personnel.

OVERVIEW

BASIC WILDLAND FIRE FIGHTER

The Basic Wildland Fire Fighter is required to meet the Job Performance Requirements (JPRs) of chapter 4 of National Fire Protection Association (NFPA) 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*, 2016 edition.

The following items are included in the Basic Wildland Fire Fighter section of Chapter 11 of the curriculum manual:

- Course Instructor Information
- Reference List (textbooks and other recommended course materials)
- Course Outline (establishes the recommended hours for teaching this course)

This is a voluntary (non-mandatory) certification, therefore a formal “curriculum” is not provided. Please use chapter 4 of NFPA 1051 as a guide when creating your own course curriculum.

Performance skills are available in Chapter 11 of the Skills Manual.

All documents in this curriculum manual, and in the skills manual, are available free of charge to download, copy and distribute as necessary. The TCFP does not provide printed copies.

Definition of a Basic Wildland Fire Fighter

A Basic Wildland Fire Fighter is an individual who has met the requirements of NFPA 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications* and has the knowledge, skills, and abilities to conduct wildland fire fighting operations by having and maintaining a knowledge of:

- Fireline safety
- Use of personal protective equipment
- Use of hand tools
- Principles of fireline construction
- Recognizing hazards and unsafe conditions

REFERENCE LIST FOR THE BASIC FIRE INSPECTOR CURRICULUM

Certified Training Facilities approved to teach this curriculum must have the following reference materials:

Emergency Response Guidebook, (2016 edition). U.S. Department of Transportation

Fire Inspection and Code Enforcement (7th ~~8~~th ed.) (~~2009~~ **2016**). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Hazardous Materials for First Responders (4th Ed.) (2010). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Local Codes and Standards.

NFPA 1031: Standard for Professional Qualifications for Fire Inspector and Plan Examiner (2014 ed.). Quincy, MA: National Fire Protection Association. NFPA Publications.

NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents (2013 ed.). Quincy, MA: National Fire Protection Association. NFPA Publications.

Plans Examiner for Fire and Emergency Services (4st ~~2~~nd ed.) (~~2005~~ **2016**). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Standards Manual for Fire Protection Personnel. Austin, TX: Texas Commission on Fire Protection.

REFERENCE LIST FOR THE HAZARDOUS MATERIALS INCIDENT COMMANDER CURRICULUM

This Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is **not** all-inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum:

Required References

Texts

Certification Curriculum Manual. Texas Commission on Fire Protection. (Most current edition). Austin, TX: Texas Commission on Fire Protection.

Code of Federal Regulations, Title 29 Part 1910.120, Appendix A. United States. U.S. Department of Labor, Occupational Safety & Health Administration.
http://edocket.access.gpo.gov/cfr_2007/julqtr/pdf/29cfr1910.120.pdf

Emergency Response Guidebook. United States. (Most current edition). Washington, DC: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

Fire Fighter's Handbook of Hazardous Materials, Baker, Charles T., 7th edition. (2006). Sudbury, MA: Jones and Bartlett.

Hazardous Materials Awareness and Operations, 2nd edition. Schnepf, Rob (2016). Sudbury, MA: Jones & Bartlett.

Hazardous Materials for First Responders, 4th edition (2010). Stillwater, OK: Fire Protection Publications, Oklahoma State University.

Hazardous Materials: Managing the Incident. Chester Noll, G. G., Hildebrand, M. S., & Yvorra, J. G. (2005). MD: Red Hat Publishing Company, Inc.

Hazardous Materials/Weapons of Mass Destruction Response Handbook, 5th edition. Trebisacci, D. G. (2008). Quincy, MA: National Fire Protection Association.

NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents. (2008 ed.). Quincy, MA: NFPA Publications. National Fire Protection Association

NIOSH Pocket Guide to Chemical Hazards. Cincinnati National Institute for Occupational Safety and Health. (Most current edition). OH: US Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. <http://www.cdc.gov/niosh/npg/>

Standards Manual for Fire Protection Personnel. Texas Commission on Fire Protection. (Most current edition). Austin, TX: Texas Commission on Fire Protection.

Recommended References

The most current edition of the following publications and media are recommended (not required) supplemental material for program use.

Texts

Bretherick's Handbook of Reactive Chemical Hazards. Urben, P. G., Pitt, M. J., & Bretherick, L. (2007). Amsterdam: Elsevier.

Chlorine Emergencies: An Overview for First Responders. Chlorine Institute. (2007). Arlington, VA: The Chlorine Institute.

CHRIS: Chemical Hazards Response Information System. United States. (1992). COMDTINST, M16465.11B. Washington, DC: U.S. Dept. of Transportation, U.S. Coast Guard.

Dangerous Properties of Industrial and Consumer Chemicals. Cheremisinoff, N. P., King, J. A., & Boyko, R. (1994). New York, NY: M. Dekker.

Emergency Care for Hazardous Materials Exposure. Currance, P., Bronstein, A. C., & Clements, B. (2005). St. Louis, MO: Mosby.

Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. (2009). Washington, DC: Association of American Railroads.

Fire Protection Guide to Hazardous Materials. National Fire Protection Association. (2001). Quincy, MA: National Fire Protection Association.

Hazardous Materials: Managing the Incident: Field Operations Guide. Chester Bevelacqua, A. S., Hildebrand, M. S., & Noll, G. G. (2007). MD: Red Hat Publishing, Inc.

Hawley's Condensed Chemical Dictionary. Lewis, R. J., & Hawley, G. G. (2007). West Sussex, England: Wiley.

Symbol Seeker: Hazard Identification Manual. Burns, P. P. (2002). Preston, England: Symbol Seeker.

Media

Hazardous Materials Containment Series. Action Training Systems. [4 Disc DVD Set]. Hazardous materials containment - series of 4 titles. Seattle, WA: Action Training Systems.

Hazardous Materials: Managing the Incident DVD Series. Massingham, G., Noll, G. G., Hildebrand, M. S., & Noll, G. G. (2005). [8 Disc DVD Set]. Edgartown, MA: Emergency Film Group.

5. **Discussion and possible action regarding, Chapter 425, Fire Service Instructors, including but not limited to, §425.1, Minimum Standards for Fire Service Instructor Certification, §425.3, Minimum Standards for Fire Service Instructor I Certification, §425.5, Minimum Standards for Fire Service Instructor II Certification and §425.7, Minimum Standards for Fire Service Instructor III Certification, and §425.9, Minimum Standards for Master Fire Service Instructor III Certification, and §425.11, International Fire Service Accreditation Congress (IFSAC) Seal.**

CHAPTER 425

FIRE SERVICE INSTRUCTORS

§425.1 Minimum Standards for Fire Service Instructor Certification.

- (a) Training programs that are intended to satisfy the requirements for fire service instructor certification must meet the curriculum and competencies based upon NFPA 1041. All applicants for certification must meet the examination requirements of this section.
- (b) Prior to being appointed to fire service instructor duties, all personnel must complete a commission approved fire service instructor program and successfully pass the commission examination pertaining to that curriculum.
- (c) Personnel who receive probationary or temporary appointment to fire service instructor duties must be certified by the commission within one year from the date of appointment to such position.
- (d) An out-of-state, military, or federal instructor training program may be accepted by the commission as meeting the training requirements for certification as a fire service instructor if the training has been submitted to the commission for evaluation and found to be equivalent to or to exceed the commission approved instructor course for that particular level of fire service instructor certification.
- (e) An individual who holds a bachelor's degree or higher in education from a regionally accredited educational institution or a teaching certificate issued by the State Board for Educator Certification or an associate's degree with twelve semester hours of education instructional courses is considered to have training equivalent to the commission's curriculum requirements for Instructor I, II and III training.
- (f) Personnel holding any level of fire service instructor certification must comply with the continuing education requirements specified in §441.21 of this title (relating to Continuing Education for Fire Service Instructor).

§425.3 Minimum Standards for Fire Service Instructor I Certification.

In order to ~~be~~ ~~become~~ certified as a Fire Service Instructor I an individual must:

- (1) have a minimum of three years of experience **as defined in §421.5 of this title (relating to Definitions)** ~~[(as defined in §421.5(47) of this title (relating to Definitions))]~~ in fire protection in one or more or any combination of the following:
 - (A) a paid, volunteer, or regulated non-governmental fire department; or
 - (B) a department of a state agency, education institution or political subdivision providing fire protection training and related responsibilities; and
- (2) possess valid documentation as a Fire Instructor I, II or III from either:
 - (A) the International Fire Service Accreditation Congress (IFSAC); or
 - (B) the National Board on Fire Service Professional Qualifications issued by the Texas A&M Engineering Extension Service using the 2007 or later edition of the NFPA standard applicable to this discipline and meeting the requirements as specified in §439.1(a)(2) of this title (relating to Requirements—General); or

- (3) have completed the appropriate curriculum for Fire Service Instructor I contained in Chapter 8 of the commission's Certification Curriculum Manual, or meet the equivalence as specified in §425.1(d) or (e) of this title (relating to Minimum Standards for Fire Service Instructor Certification); and
- (4) successfully pass the applicable commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification).

§425.5 Minimum Standards for Fire Service Instructor II Certification.

In order to ~~be~~ ~~become~~ certified as a Fire Service Instructor II, an individual must:

- (1) hold as a prerequisite a Fire Instructor I certification as defined in §425.3 of this title (relating to Minimum Standards for Fire Service Instructor I Certification); and
- (2) have a minimum of three years of experience **as defined in §421.5 of this title (relating to Definitions)** ~~[(as defined in §421.5(47) of this title (relating to Definitions))]~~ in fire protection in one or more or any combination of the following:
 - (A) a paid, volunteer, or regulated non-governmental fire department; or
 - (B) a department of a state agency, education institution or political subdivision providing fire protection training and related responsibilities; and
- (3) possess valid documentation as a Fire Instructor I, II or III from either:
 - (A) the International Fire Service Accreditation Congress (IFSAC); or
 - (B) the National Board on Fire Service Professional Qualifications issued by the Texas A&M Engineering Extension Service using the 2007 or later edition of the NFPA standard applicable to this discipline and meeting the requirements as specified in §439.1(a)(2) of this title (relating to Requirements—General); or
- (4) have completed the appropriate curriculum for Fire Service Instructor II contained in Chapter 8 of the commission's Certification Curriculum Manual, or meet the equivalence as specified in §425.1(d) or (e) of this title (relating to Minimum Standards for Fire Service Instructor Certification); and
- (5) successfully pass the applicable commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification).

§425.7 Minimum Standards for Fire Service Instructor III Certification.

In order to ~~be~~ ~~become~~ certified as a Fire Service Instructor III an individual must:

- (1) hold as a prerequisite, a Fire Instructor II Certification as defined in §425.5 of this title (relating to Minimum Standards for Fire Service Instructor II Certification); and
- (2) have a minimum of three years of experience **as defined in §421.5 of this title (relating to Definitions)** ~~[(as defined in §421.5(47) of this title (relating to Definitions))]~~ in fire protection in one or more or any combination of the following:
 - (A) a paid, volunteer, or regulated non-governmental fire department; or
 - (B) a department of a state agency, education institution or political subdivision providing fire protection training and related responsibilities; and

- (3) possess valid documentation of accreditation from the International Fire Service Accreditation Congress (IFSAC) as a Fire Instructor III; or
- (4) have completed the appropriate curriculum for Fire Service Instructor III contained in Chapter 8 of the commission's Certification Curriculum Manual, or meet the equivalence as specified in §425.1(d) or (e) of this title (relating to Minimum Standards for Fire Service Instructor Certification); and
- (5) successfully pass the applicable commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification); and either
 - (A) hold as a prerequisite an advanced structural fire protection personnel certification, an advanced aircraft fire protection personnel certification, advanced marine fire protection personnel certification, advanced inspector certification, advanced fire investigator, or advanced arson investigator certification; or
 - (B) have 60 college hours from a regionally accredited educational institution; or
 - (C) hold an associate's degree from a regionally accredited educational institution.

§425.9 Minimum Standards for Master Fire Service Instructor III Certification.

In order to ~~be~~ ~~become~~ certified as a Master Fire Service Instructor III the individual must:

- (1) hold as a prerequisite a Fire Service Instructor III certification; and
- (2) be a member of a paid, volunteer, or regulated non-governmental fire department; or a department of a state agency, education institution or political subdivision providing fire protection training and related responsibilities; and
- (3) hold as a prerequisite a master structural fire protection personnel certification, a master aircraft rescue fire fighting personnel certification, master marine fire protection personnel certification, master inspector certification, master fire investigator certification, or master arson investigator certification; or
- (4) hold a **bachelor's** ~~[bachelors]~~ degree or higher in education from a regionally accredited educational institution or a teaching certificate issued by the Texas State Board of Education.

§425.11 International Fire Service Accreditation Congress (IFSAC) Seal.

- (a) Individuals completing a commission approved Fire Service Instructor I training program and passing the applicable state examination may be granted an IFSAC seal for Instructor I by making application to the commission and paying the applicable fee.
- (b) Individuals holding an IFSAC Instructor I seal, completing a commission approved Fire Service Instructor II training program, and passing the applicable state examination may be granted an IFSAC seal for Instructor II by making application to the commission and paying the applicable fee.
- (c) Individuals holding an IFSAC Instructor II seal, completing a commission approved Fire Service Instructor III training program, and passing the applicable state examination may be granted an IFSAC seal for Instructor III by making application to the commission and paying the applicable fee.
- (d) In order to qualify for an IFSAC seal, an individual must submit the application for the seal prior to the expiration of the examination.

6. **Discussion and possible action regarding, Chapter 431, Fire Investigation, including but not limited to, Subchapter A, Minimum Standards For Arson Investigator Certification, §431.1, Minimum Standards for Arson Investigation Personnel, §431.1, Minimum Standards for Basic Arson Investigator Certification, §431.5, Minimum Standards for Intermediate Arson Investigator Certification, §431.7, Minimum Standards for Advanced Arson Investigator Certification, §431.9, Minimum Standards for Master Arson Investigator Certification, §431.11, Minimum Standards for Arson Investigator Certification for Law Enforcement Personnel, and §431.13, International Fire Service Accreditation Congress (IFSAC) Seal; Subchapter B, Minimum Standards For Fire Investigator Certification, §431.201, Minimum Standards for Fire Investigation Personnel, §431.203, Minimum Standards for Fire Investigator Certification, §431.205, Minimum Standards for Intermediate Fire Investigator Certification, §431.207, Minimum Standards for Advanced Fire Investigator Certification, §431.209, Minimum Standards for Master Fire Investigator Certification, and §431.211, International Fire Service Accreditation Congress (IFSAC) Seal—Fire Investigator.**

CHAPTER 431

FIRE INVESTIGATION

SUBCHAPTER A

MINIMUM STANDARDS FOR ARSON INVESTIGATOR CERTIFICATION

§431.1 Minimum Standards for Arson Investigation Personnel.

- (a) Fire protection personnel who are appointed arson investigation duties must be certified, as a minimum, as a basic arson investigator as specified in §431.3 of this title (relating to Minimum Standards for Basic Arson Investigator Certification) within one year from the date of initial appointment to such position.
- (b) Prior to being appointed to arson investigation duties, fire protection personnel must complete a commission approved basic fire investigator training program, successfully pass the commission examination pertaining to that curriculum, and possess a current peace officer license from the Texas Commission on Law Enforcement or document that the individual is a federal law enforcement officer.
- (c) Personnel holding any level of arson investigation certification shall be required to comply with the continuing education requirements in §441.15 of this title (relating to Continuing Education for Arson Investigator or Fire Investigator).

§431.3 Minimum Standards for Basic Arson Investigator Certification.

In order to be certified ~~[by the commission]~~ as a Basic Arson Investigator an individual must:

- (1) possess a current basic peace officer's license from the Texas Commission on Law Enforcement or documentation that the individual is a federal law enforcement officer;
- (2) hold a current license as a peace officer and notify the commission on the prescribed form regarding the law enforcement agency currently holding the individual's peace officer license; and
- (3) possess valid documentation of accreditation from the International Fire Service Accreditation Congress as a Fire Investigator; or
- (4) complete a commission approved basic fire investigation training program and successfully pass the commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved fire investigation training program shall consist of one of the following:
 - (A) completion of the commission approved Fire Investigator Curriculum, as specified in Chapter 5 of the commission's Certification Curriculum Manual;
 - (B) successful completion of an out-of-state, NFA, or military training program which has been submitted to the commission for evaluation and found to meet the minimum requirements as listed in the commission approved Fire Investigator Curriculum as specified in Chapter 5 of the commission's Certification Curriculum Manual; or
 - (C) successful completion of the following college courses: Fire and Arson Investigation I or II, 3 semester hours; Hazardous Materials I, II, or III, 3 semester hours; Building Construction in the Fire Service or Building Codes and Construction, 3 semester hours; Fire Protection Systems, 3 semester hours. Total semester hours, 12.

§431.5 Minimum Standards for Intermediate Arson Investigator Certification.

- (a) Applicants for Intermediate Arson Investigator Certification must complete the following requirements:
- (1) hold as a prerequisite a Basic Arson Investigator Certification as defined in §431.3 of this title (relating to Minimum Standards for Basic Arson Investigator Certification); and
 - (2) acquire a minimum of four years of fire protection experience and complete the requirements listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2--Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3--Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section); or
 - (D) Option 4--Hold current Intermediate Peace Officer certification from the Texas Commission on Law Enforcement with four additional law enforcement courses applicable for fire investigations (See exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Arson Investigator Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§431.7 Minimum Standards for Advanced Arson Investigator Certification.

- (a) Applicants for Advanced Arson Investigator certification must complete the following requirements:
- (1) hold as a prerequisite an Intermediate Arson Investigator Certification as defined in §431.5 of this title (relating to Minimum Standards for Intermediate Arson Investigator Certification); and
 - (2) acquire a minimum of eight years of fire protection experience and complete the requirements listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2--Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses (See the exception outlined in subsection (c) of this section); or

- (C) Option 3--Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section); or
 - (D) Option 4--Advanced Arson for Profit or Complex Arson Investigative Techniques (Bureau of Alcohol, Tobacco, Firearms, and Explosives resident or field course, 80 hours); or
 - (E) Option 5--Hold current Advanced Peace Officer certification from the Texas Commission on Law Enforcement with four additional law enforcement courses applicable for fire investigations (See exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
 - (c) The training required in this section must be in addition to any training used to qualify for any lower level of Arson Investigator Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§431.9 Minimum Standards for Master Arson Investigator Certification.

- (a) Applicants for Master Arson Investigator Certification must complete the following requirements:
 - (1) hold as a prerequisite an Advanced Arson Investigator Certification as defined in §431.7 of this title (relating to Minimum Standards for Advanced Arson Investigator Certification); and
 - (2) acquire a minimum of twelve years of fire protection experience, and 60 college semester hours or an associate's degree, either of which includes at least 18 college semester hours in fire science or criminal justice subjects.
- (b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Arson Investigator Certification.

§431.11 Minimum Standards for Arson Investigator Certification for Law Enforcement Personnel.

- (a) A law enforcement officer employed or commissioned by a law enforcement agency as a peace officer who is designated as an arson investigator by an appropriate local authority is eligible for certification on a voluntary basis by complying with this chapter.
- (b) An individual holding commission certification as a fire investigator who becomes a law enforcement officer employed or commissioned by a law enforcement agency as a peace officer, and who is designated as an arson investigator by an appropriate local authority will qualify for a similar level arson investigator **certification.** [certificate.] To obtain **an arson investigator certification** [a printed certificate] the individual must make application to the commission to include confirmation of commission.

§431.13 International Fire Service Accreditation Congress (IFSAC) Seal.

Individuals completing a commission approved basic fire investigator program and passing the applicable state examination may be granted an IFSAC seal as a Fire Investigator by making application to the commission for the IFSAC seal and paying applicable fees. In order to qualify for an IFSAC seal, an individual must submit the application for the seal prior to the expiration of the examination.

CHAPTER 431

FIRE INVESTIGATION

SUBCHAPTER B

MINIMUM STANDARDS FOR FIRE INVESTIGATOR CERTIFICATION

§431.201 Minimum Standards for Fire Investigation Personnel.

- (a) Fire protection personnel who receive temporary or probationary appointment to fire investigation duties must be certified as a fire investigator by the Commission within one year of appointment to such duties.
- (b) Prior to being appointed to fire investigation duties, personnel must:
 - (1) complete a commission approved basic fire investigator training program and successfully pass the commission examination pertaining to that curriculum; or
 - (2) hold current certification as structure fire protection personnel.
- (c) Individuals holding a Fire Investigator certification shall be required to comply with the continuing education requirements in §441.15 of this title (relating to Continuing Education for Arson Investigator or Fire Investigator).
- (d) Individuals certified under this subchapter shall limit their investigation to determining fire cause and origin. If evidence of a crime is discovered, custody and control of the investigation shall be immediately transferred to a certified arson investigator or licensed peace officer.
- (e) Individuals who previously held arson investigator certification, who no longer hold a current commission as a peace officer, will qualify for certification as a fire investigator of similar level upon notice to the commission. To obtain a **fire investigator certification** ~~[printed certificate]~~ the individual will be required to make application to the commission.

§431.203 Minimum Standards for Fire Investigator Certification.

- (a) In order to be certified ~~[by the Commission]~~ as a Fire Investigator an individual must complete the requirements specified in §431.3(a)(3) or (4) of this title (relating to Minimum Standards for Basic Arson Investigator Certification).
- (b) A person who holds or is eligible to hold a certificate as a Fire Investigator may be certified as an Arson Investigator by meeting the requirements of Chapter 431, Subchapter A, but shall not be required to repeat the applicable examination requirements.

§431.205 Minimum Standards for Intermediate Fire Investigator Certification.

- (a) Applicants for Intermediate Fire Investigator must complete the following requirements:
 - (1) hold as a prerequisite a Basic Fire Investigator Certification as defined in §431.203 of this title (relating to Minimum Standards for Fire Investigator Certification); and
 - (2) acquire a minimum of four years of fire protection experience and complete the training listed in one of the following options:

- (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2--Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List and four B-List courses. (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3--Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses. (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
 - (c) The training required in this section must be in addition to any training used to qualify for any lower level of Fire Investigator Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§431.207 Minimum Standards for Advanced Fire Investigator Certification.

- (a) Applicants for Advanced Fire Investigator must complete the following requirements
 - (1) hold as a prerequisite an Intermediate fire Investigator Certification as defined in §431.203 of this title (relating to Minimum Standards for Fire Investigator Certification); and
 - (2) acquire a minimum of eight years of fire protection experience and complete the training listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2--Completion of coursework from the either A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List and four B-List courses. (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3--Completion of coursework from either the A-List the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses. (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Fire Investigator Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§431.209 Minimum Standards for Master Fire Investigator Certification.

(a) Applicants for Master Fire Investigator Certification must complete the following requirements:

- (1) hold as a prerequisite an Advanced Fire Investigator Certification as defined in §431.207 of this title (relating to Minimum Standards for Advanced Fire Investigator Certification); and
- (2) acquire a minimum of twelve years of fire protection experience; and
- (3) sixty college semester hours or an associate degree, that must include at least eighteen college semester hours in fire science or criminal justice subjects.

(b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Fire Investigator Certification.

§431.211 International Fire Service Accreditation Congress (IFSAC) Seal--Fire Investigator.

Individuals completing a commission approved basic fire investigator program and passing the applicable state examination may be granted an IFSAC seal as a Fire Investigator by making application to the commission for the IFSAC seal and paying applicable fees. In order to qualify for an IFSAC seal, an individual must submit the application for the seal prior to the expiration of the examination.

- 7. Discussion and possible action regarding, Chapter 443, Curriculum Manual, including but not limited to, §443.1, Curriculum Approval by the Fire Fighter Advisory Committee, §443.3, Curriculum Approval by the Texas Commission on Fire Protection, §443.5, Effective Date of New Curricula or Changes to Curricula Required by Law or Rule, §443.7, Effective Date of New Curricula or Changes or Revisions to Existing Curricula Which Are Voluntary, and §443.9, National Fire Protection Association Standard.**

CHAPTER 443

CERTIFICATION CURRICULUM MANUAL

§443.1 [~~Curriculum~~] Approval by the Fire Fighter Advisory Committee.

- (a) All **proposals for new or revised curricula and training programs** [~~curricula or changes to curricula for fire protection personnel~~] must be submitted to the Fire Fighter Advisory Committee for approval.
- (b) The Fire Fighter Advisory Committee may:
- (1) submit **proposals** [~~new curricula or changes to curricula~~] to a subcommittee formed of members of the Fire Fighter Advisory Committee for study and review before approval; or
 - (2) submit **proposals** [~~new curricula or changes to curricula~~] to an advisory committee formed of members of the fire service who are recommended by the Fire Fighter Advisory Committee and appointed by the Commission to report to the Fire Fighter Advisory Committee, for study and review before approval.
- (c) All **proposals** [~~new curricula or changes to curricula~~] approved by the Fire Fighter Advisory Committee shall be placed on the next scheduled meeting agenda of the Texas Commission on Fire Protection.

§443.3 [~~Curriculum~~] Approval by the Texas Commission on Fire Protection.

- (a) All **proposals for new or revised curricula and training programs** [~~curricula or changes to curricula~~] approved by the Fire Fighter Advisory Committee must receive final approval by the Texas Commission on Fire Protection.
- (b) **Proposals** [~~Curricula~~] not approved by the Commission shall be sent back to the Committee for further development. The Commission shall indicate to the Committee the reasons that the **proposals were** [~~curriculum was~~] not approved.

§443.5 Effective Date of New or Revised [~~Curricula or Changes to~~] Curricula and Training Programs Required by Law or Rule.

- (a) New curricula **and training programs** will become effective on January 1 of the year following final approval by the commission or on the date specified by the commission.
- (b) Changes to curricula **and training programs** will become effective on January 1 of the year following final approval by the commission or on the date specified by the commission.
- (c) Changes to curricula **and training programs** which involve reference materials will become effective on January 1 of the year following final approval by the commission or on the date specified by the commission, as recommended by the Fire Fighter Advisory Committee, depending on the impact the change will have on the curricula **or training programs**.
- (d) Changes to curricula **and training programs** that involve a safety consideration as determined by the Fire Fighter Advisory Committee shall become effective immediately following final approval by the commission.

§443.7 Effective Date of New or Revised Curricula or Changes or Revisions to Existing Curricula and Training Programs Which Are Voluntary.

- (a) New curricula **and training programs** will become effective on the date recommended by the Fire Fighter Advisory Committee and specified by the Commission.
- (b) Changes to curricula **and training programs** will become effective on the date recommended by the Fire Fighter Advisory Committee and specified by the Commission.
- (c) Changes to curricula **and training programs** that involve a safety consideration as determined by the Fire Fighter Advisory Committee shall become effective immediately following final approval by the Commission.

§443.9 National Fire Protection Association Standard.

- (a) All curricula **and training programs** ~~[for fire protection personnel]~~ must, as a minimum, meet the standards, to include manipulative skills objectives and knowledge objectives, of the current NFPA standard pertaining to the discipline, if such a standard exist and subject to subsection (c) of this section.
- (b) New curricula **and training programs** presented to the Fire Fighter Advisory Committee must, as a minimum, meet the standards of the current edition of the applicable NFPA standard for the discipline, if such a standard **exists**. [exist.]
- (c) If a NFPA standard is adopted or an existing NFPA standard is revised, all curricula **and training programs** ~~[for fire protection personnel]~~ must meet the standards of the new or revised applicable NFPA standard within three years of the official adoption date of the applicable NFPA standard.

8. **Discussion and possible action regarding, Chapter 453, Hazardous Materials, Subchapter A, Minimum Standards for Hazardous Materials Technician, including but not limited to, §453.1, Hazardous Materials Technician Certification, §453.3, Minimum Standards for Hazardous Materials Technical Certification, §453.5, Examination Requirements, and §453.7, International Fire Service Accreditation Congress (IFSAC) Seal; Subchapter B, Minimum Standards For Hazardous Materials Incident Commander, §453.201, Hazardous Materials Incident Commander Certification, §453.203, Minimum Standards for Hazardous Materials Incident Commander, and §453.205, Examination Requirements.**

CHAPTER 453

HAZARDOUS MATERIALS

SUBCHAPTER A

MINIMUM STANDARDS FOR HAZARDOUS MATERIALS TECHNICIAN

§453.1 Hazardous Materials Technician Certification.

- (a) A Hazardous Materials Technician is defined as an individual who performs emergency response to an occurrence which results in, or is likely to result in, an uncontrolled release of a hazardous substance where there is a potential safety or health hazard (i.e., fire, explosion, or chemical exposure). A Hazardous Materials Technician responds to such occurrences and is expected to perform work to handle and control (stop, confine, or extinguish) actual or potential leaks or spills. The Hazardous Materials Technician assumes a more aggressive role than a first responder at the operations level, in that the Hazardous Materials Technician will approach the point of release. The Hazardous Materials Technician is expected to use specialized Chemical Protective Clothing (CPC) and specialized control equipment.
- (b) All individuals holding a Hazardous Materials Technician Certification shall be required to comply with the continuing education requirements in §441.17 of this title (relating to Continuing Education for Hazardous Materials Technician).

§453.3 Minimum Standards for Hazardous Materials Technician Certification.

~~[(a)]~~ In order to be certified as a Hazardous Materials Technician an individual must:

- (1) hold certification as Structural Fire Protection Personnel, Aircraft Rescue Fire Fighting Personnel, or Marine Fire Protection Personnel; and
- (2) possess valid documentation as a Hazardous Materials Technician from either:
 - (A) the International Fire Service Accreditation Congress; or
 - (B) the National Board on Fire Service Professional Qualifications issued by the Texas A&M Engineering Extension Service using the 2008 or later edition of the NFPA standard applicable to this discipline and meeting the requirements as specified in §439.1(a)(2) of this title (relating to Requirements—General); or
- (3) complete a commission approved Hazardous Materials Technician **training** program and successfully pass the commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved Hazardous Materials Technician program must consist of one of the following:
 - (A) completion of **an in-state** ~~[a commission approved]~~ Hazardous Materials Technician **training program that meets the requirements of the applicable NFPA standard, is conducted by a commission certified training provider and approved through the commission's training prior approval system; or** ~~[Curriculum as specified in Chapter 6 of the commission's Certification Curriculum Manual; or]~~

(B) completion of an out-of-state and/or military training program that has been submitted to the commission for evaluation and found to **meet or exceed** ~~[be equivalent to, or exceeds]~~ the **NFPA standard for** ~~[commission approved]~~ Hazardous Materials Technician ~~[Curriculum]~~.

~~[(b) Out-of-state or military training programs which are submitted to the commission for the purpose of determining equivalency will be considered equivalent if all competencies set forth in Chapter 6 (pertaining to Hazardous Materials Technician) of the commission's Certification Curriculum Manual are met.]~~

§453.5 Examination Requirements.

- (a) Examination requirements of Chapter 439 of this title (relating to Examinations for Certification) must be met in order to receive a Hazardous Materials Technician Certification.
- (b) Individuals will be permitted to take the commission examination for Hazardous Materials Technician by documenting completion of the NFPA 472 Awareness and Operations level training and completing a commission approved Hazardous Materials Technician **training program**.~~[curriculum.]~~

§453.7 International Fire Service Accreditation Congress (IFSAC) Seal.

Individuals completing a commission approved Hazardous Materials Technician **training** program, documenting an IFSAC seal for Hazardous Materials Awareness Level Personnel; and

- (1) Hazardous Materials Operations Level Responders, including the Mission-Specific Competencies for Personal Protective Equipment and Product Control under the current edition; or
- (2) NFPA 472 Hazardous Materials Operations prior to the 2008 edition; and
- (3) upon passing the applicable state examination, may be granted an IFSAC seal as a Hazardous Materials Technician by making application to the commission for the IFSAC seal and paying applicable fees. In order to qualify for an IFSAC seal, an individual must submit the application for the seal prior to the expiration of the examination.

CHAPTER 453

HAZARDOUS MATERIALS

SUBCHAPTER B

MINIMUM STANDARDS FOR HAZARDOUS MATERIALS INCIDENT COMMANDER

§453.201 Hazardous Materials Incident Commander Certification.

The Hazardous Materials Incident Commander is defined as that person responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources.

§453.203 Minimum Standards for Hazardous Materials Incident Commander.

~~[(a)]~~ In order to be certified as Hazardous Materials Incident Commander an individual must:

- (1) hold certification as Structural Fire Protection Personnel, Aircraft Rescue Fire Fighting Personnel, or Marine Fire Protection Personnel; and
- (2) possess valid documentation as a Hazardous Materials Incident Commander from either:
 - (A) the International Fire Service Accreditation Congress; or
 - (B) the National Board on Fire Service Professional Qualifications issued by the Texas A&M Engineering Extension Service using the 2008 or later edition of the NFPA standard applicable to this discipline and meeting the requirements as specified in §439.1(a)(2) of this title (relating to Requirements—General); or
- (3) complete a commission approved Hazardous Materials Incident Commander **training** program and successfully pass the commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved Hazardous Materials Incident Commander program must consist of one of the following:
 - (A) completion of **an in-state** ~~[a commission approved]~~ Hazardous Materials Incident Commander **training program that meets the requirements of the applicable NFPA standard, is conducted by a commission certified training provider and approved through the commission's training prior approval system; or** ~~[curriculum as specified in Chapter 6 of the commission's Certification Curriculum Manual; or]~~
 - (B) completion of an out-of-state and/or military training program that has been submitted to the commission for evaluation and found to **meet or exceed** ~~[be equivalent to, or exceeds]~~ the **NFPA standard for** ~~[commission approved]~~ Hazardous Materials Incident Commander ~~[curriculum]~~.
- ~~[(4) Special temporary provision: Through February 2015, an individual is eligible for Hazardous Materials Incident Commander certification upon documentation of the National Board on Fire Service Professional Qualifications issued by the Texas A&M Engineering Extension Service using the 2008 edition of the NFPA standard applicable to this discipline.]~~
- ~~[(b) Out-of-state or military training programs which are submitted to the commission for the purpose of determining equivalency will be considered equivalent if all competencies set forth in Chapter 6 (pertaining to Hazardous Materials Incident Commander) of the commission's Certification Curriculum Manual are met.]~~

§453.205 Examination Requirements.

- (a) Examination requirements of Chapter 439 of this title (relating to Examinations for Certification) must be met in order to receive a Hazardous Materials Incident Commander certification.
- (b) Individuals will be permitted to take the commission examination for Hazardous Materials Incident Commander by documenting completion of NFPA 472 Awareness and Operations level training and completing a commission approved Hazardous Materials Incident Commander **training** program.

9. **Discussion and possible action regarding, Chapter 455, Minimum Standards for Wildland Fire Protection Certification, including but not limited to, §455.1, Minimum Standards for Wildland Fire Protection Personnel, §455.3, Minimum Standards for Basic Wildland Fire Protection Certification, §455.5, Minimum Standards for Intermediate Wildland Fire Protection Certification, and §455.7, Examination Requirements.**

CHAPTER 455

MINIMUM STANDARDS FOR WILDLAND FIRE PROTECTION CERTIFICATION

§455.1 Minimum Standards for Wildland Fire Protection Personnel.

- (a) A wildland fire fighter is defined as an individual whose assigned function is suppression of fires in the wildland or wildland-urban interface setting.
- (b) Individuals holding Wildland Fire Protection certification shall be required to comply with the continuing education requirements in Chapter 441 of this title (relating to Continuing Education).
- (c) All Wildland Fire Protection certifications issued by the commission and referenced in this chapter are voluntary.

§455.3 Minimum Standards for Basic Wildland Fire Protection Certification.

In order to be certified as Basic Wildland Fire Protection personnel, an individual must:

- (1) possess valid documentation of accreditation from the International Fire Service Accreditation Congress as Wildland Fire Fighter Level I; or
- (2) complete a commission approved Basic Wildland Fire Protection program and successfully pass the commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved Basic Wildland Fire Protection training program shall consist of one of the following:
 - (A) completion of the commission approved Basic Wildland Fire Fighter **training program** [Curriculum], as specified in the applicable chapter of the commission's Certification Curriculum Manual; or
 - (B) completion of the following National Wildfire Coordinating Group (NWCG) courses:
 - (i) S-130: Firefighter Training
 - (ii) S-190: Introduction to Wildland Fire Behavior
 - (iii) L-180: Human Factors on the Fireline
 - (iv) I-100: Introduction to the Incident Command System, or an equivalent basic incident command system course such as NIMS IS-100

§455.5 Minimum Standards for Intermediate Wildland Fire Protection Certification.

In order to be certified as Intermediate Wildland Fire Protection personnel, an individual must:

- (1) hold Basic Wildland Fire Protection certification issued by the commission; and
- (2) complete the associated position task book as adopted by the National Wildfire Coordinating Group (NWCG) 310-1. Proof of completion of the position task book must be from the Texas Intrastate Fire Mutual Aid System (TIFMAS) (e.g. task book approval form or TIFMAS card); and
- (3) individual who hold Structure Fire Protection certification issued by the commission must complete a commission approved Intermediate Wildland Fire Protection program and successfully pass the commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved Intermediate Wildland Fire Protection training program shall consist of one of the following:
 - (A) completion of the commission approved Intermediate Wildland Fire Fighter Curriculum, as specified in the applicable chapter of the commission's Certification Curriculum Manual; or

(B) completion of the NWCG course G-131: Wildland Training (FFT1) for Structural Fire Fighters; or

(C) completion of the NWCG courses S-131 and S-133; or

(4) individuals who hold a State Firemen's and Fire Marshals' Association Advanced Accredited certification issued prior to January 1, 2012, or a State Firemen's and Fire Marshals' Association Firefighter II certification issued on or after January 1, 2012, must complete a commission approved Intermediate Wildland Fire Protection program and successfully pass the commission examination which includes both Basic Structure Fire Protection and Intermediate Wildland Fire Protection, as specified in Chapter 439 of this title. An approved Intermediate Wildland Fire Protection training program shall consist of one of the following:

(A) completion of the commission approved Intermediate Wildland Fire Fighter Curriculum, as specified in the applicable chapter of the commission's Certification Curriculum Manual; or

(B) completion of the NWCG course G-131: Wildland Training (FFT1) for Structural Fire Fighters; or

(C) completion of the NWCG courses S-131 and S-133.

§455.7 Examination Requirements.

(a) Examination requirements of Chapter 439 of this title (relating to Examinations for Certification) must be met in order to receive Wildland Fire Protection Certification.

(b) Persons seeking a commission certification referenced in this chapter who do not currently hold a certification issued by the commission must meet all requirements regarding application for initial certification.

10. Discussion of the 2016 data collected on fire fighter injuries, and possible action on developing recommendations to be submitted to the commission for approval and inclusion in the annual report to be sent to the State Fire Marshal's Office.

Texas Commission on Fire Protection

Injury Report

January 1, 2016 to December 31, 2016



TEXAS COMMISSION ON FIRE PROTECTION

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Executive Summary

This report includes the abstract, mission, reports, information and data collected by the Texas Commission on Fire Protection's injury reporting program. The report includes fire fighter injuries reported to the Texas Commission on Fire Protection in 2016, with charts and graphs depicting the collected information. The report also compares Texas fire fighter injury statistics with statistics gathered by the National Fire Protection Association (NFPA) in 2015.

Under Texas Government Code §419.048, the Texas Commission on Fire Protection is charged with developing and establishing criteria to receive and analyze injury information pertaining to Texas fire fighters. The commission reviews this information to develop recommendations to help reduce fire protection personnel injuries. The commission provides this information to the State Fire Marshal's Office (SFMO) by September 1 of each year for inclusion in the SFMO's annual Firefighter Fatality Investigations Report. The commission has enacted rules about reporting injuries in the Texas Administrative Code (TAC) Title 37, Chapter 435, and has established the criteria and policies for reporting and analyzing the information.

The commission built the data systems necessary to gather this information in 2010. Development is ongoing as we receive feedback from stakeholders on the efficiency of the system. The reporting process is accomplished online. Fire departments regulated by the commission have been notified of the requirement to report. Several volunteer departments, which are not regulated by the commission, are also participating voluntarily.

This report concludes with recommendations from the commission to help reduce the number of fire fighter injuries in Texas and to improve the injury reporting program.

Abstract

Texas fire departments reported 3,795 injuries to the Texas Commission on Fire Protection in calendar year 2016. Of these, 834 occurred during fire suppression activities, representing 22 percent of the total reported injuries. This represents a one percent increase in the ratio of fire suppression injuries to the total, which in 2015 accounted for 21 percent of injuries. Of the 834 fire suppression injuries, 173, or 20 percent, were serious injuries that resulted in lost time. (Note: The commission defines a serious injury as one that results in missed work.)

As in previous years, the largest number of reported injuries occurred during the performance of emergency medical services (EMS) activities: 1,022 of the 3,795 total reported injuries, or 27 percent. This represents almost the same ratio of EMS injuries to total injuries in 2015, in which 979 of 3,721 total injuries, or 26.2 percent, occurred during EMS activities. Of the 1,022 EMS injuries, 156, or 15 percent, were serious.

After EMS and fire suppression, the next highest number of injuries reported in 2016 occurred in the performance of station duties, with 579, or 15.2 percent, of the total injuries. This is nearly the same result as in 2015, when 573, or 15.4 percent, of the total reported injuries occurred in the station.

Skills training and wellness/fitness again rounded out the top five activities resulting in injuries, with 449 (12 percent) training injuries and 392 (10.3 percent) fitness/wellness injuries.

The total number of injuries reported in station duties, skills training, and wellness/fitness activities (which are all non-emergency activities) represented just over a third (37.4 percent) of the total injuries. This represents a slight decrease in the ratio of non-emergency to emergency activities; in 2015, 39 percent of injuries occurred during non-emergency activities.

Mission

The commission shall gather and evaluate data on fire protection personnel injuries and develop recommendations for reducing injuries.

Why we are collecting injury data

Under Texas Government Code §419.048, the Texas Legislature charged the commission with gathering and evaluating data on injuries. The rules requiring regulated entities to report injuries to the commission are in Texas Administrative Code §435.23. The commission encourages volunteer entities to report injuries so that it can gain as accurate a picture as possible concerning injury trends in the Texas fire service. The injury reporting program began in March 2010.

Information the commission collects

- Minor, serious, critical and fatal injuries
- Activities where fire personnel are injured
- Types of injuries (burns, strain-sprains, wounds, etc.)
- Body parts being injured
- Tasks performed at the time of injury
- Missed time
- Work assignment after injury
- Malfunctions/failures of personal protective equipment (PPE), self-contained breathing apparatus (SCBA), personal alert safety systems (PASS devices) and standard operating procedures (SOPs)

How this will help the fire service

- Identify common injuries
- Identify trends in injuries
- Identify needed training
- Evaluate and find improvements in procedures
- Track lost time injuries (requested by user community)

Reports, Information and Data Collection

This report contains data submitted by regulated and non-regulated entities. The data collected in 2016 was the sixth full year of reporting.

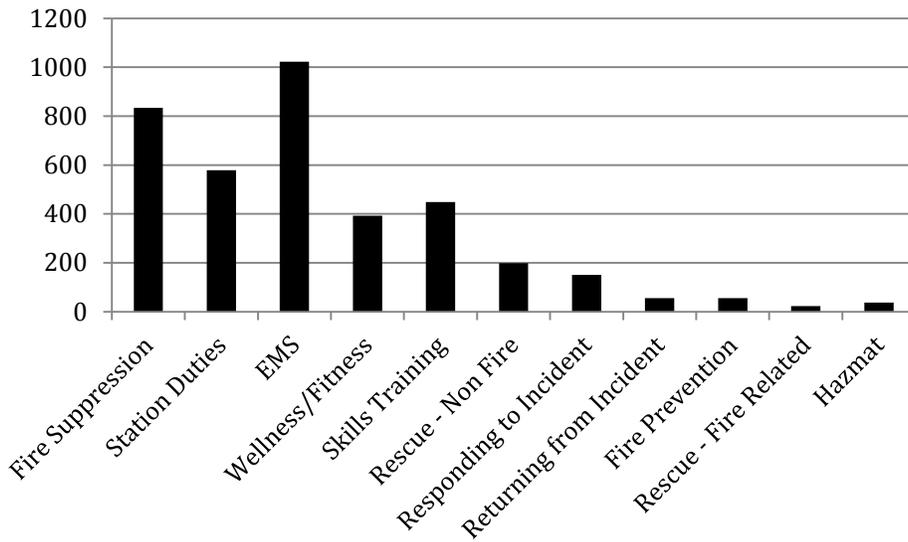
Of the approximately 575 commission-regulated fire departments included in this report, 520, or 90 percent, either submitted an injury report or a “no injury” report for months in which their personnel did not have any injuries. The commission stresses the need for participation and provides reminders to regulated entities of the statutory requirement to report.

Fire Protection Personnel Injuries

Table 1: Injuries by Activity and Severity, 2016

Activity	Minor	Serious	Critical	Fatal	Total
EMS	865	156	1		1022
Fire Suppression	656	173	5		834
Station Duties	409	166	4		579
Skills Training	307	140	1	1	449
Wellness/Fitness	247	142	3		392
Rescue - Non Fire	148	51			199
Responding to Incident	115	35			150
Fire Prevention	44	11			55
Returning from Incident	37	18			55
Hazmat	35	1	1		37
Rescue - Fire Related	20	3			23
Total	2883	896	15	1	3795

Figure 1: Total Injuries by Activity, 2016



Minor and Serious Injuries by Activity

EMS activities resulted in the highest number of both minor and serious injuries this year. In 2013 and 2014, fire suppression activities resulted in the highest number of serious injuries, but in 2015 and 2016 there were more serious injuries in EMS and station duties than in fire suppression. There has been a steady decline in serious fire suppression injuries over the past five years. (See Table 3. The commission defines a serious injury as one which results in the employee missing one or more full duty shifts.)

Table 2: Minor Injury Activities, 2012 - 2016

Activity	2012		2013		2014		2015		2016	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
EMS	1042	32.41%	934	30.28%	900	28.03%	792	28.25%	865	30%
Fire Suppression	654	20.43%	619	20.06%	808	25.16%	618	22.04%	656	23%
Station Duties	508	15.80%	452	14.65%	465	14.48%	396	14.12%	409	14%
Skills Training	367	11.42%	317	10.28%	365	11.37%	288	10.27%	307	11%
Wellness/Fitness	294	9.14%	285	9.24%	254	7.91%	278	9.88%	247	9%
Rescue - Non Fire	147	4.57%	243	7.88%	206	6.42%	204	7.28%	148	5%
Responding to Incident	90	2.80%	70	2.27%	105	3.27%	122	4.35%	115	4%
Fire Prevention	45	1.40%	66	2.14%	43	1.34%	41	1.46%	44	2%
Returning from Incident	30	0.93%	37	1.20%	42	1.31%	33	1.18%	37	1%
Hazmat	24	0.75%	44	1.43%	12	0.37%	11	0.39%	35	1%
Rescue - Fire Related	14	0.44%	18	0.58%	11	0.34%	22	0.78%	20	1%
Total	3215	100.00%	3085	100.00%	3211	100.00%	2805	100.00%	2883	100%

Table 3: Serious Injury Activities, 2012 - 2016

Activity	2012		2013		2014		2015		2016	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
EMS	196	18.97%	179	19.02%	164	19.90%	185	20.60%	173	19.31%
Station Duties	233	22.56%	201	21.36%	160	19.42%	174	19.27%	166	18.53%
Fire Suppression	231	22.36%	206	21.89%	177	21.48%	160	17.82%	156	17.41%
Skills Training	113	10.94%	99	10.52%	104	12.62%	126	13.92%	142	15.85%
Wellness/Fitness	134	12.97%	122	12.96%	127	15.41%	125	14.03%	140	15.63%
Rescue - Non Fire	34	3.29%	46	4.89%	38	4.61%	46	5.01%	51	5.69%
Responding to Incident	43	4.16%	42	4.46%	16	1.94%	44	4.90%	35	3.91%
Returning from Incident	24	2.32%	18	1.91%	19	2.31%	13	1.34%	18	2.01%
Fire Prevention	18	1.74%	17	1.81%	11	1.33%	12	1.34%	11	1.23%
Rescue - Fire Related	7	0.68%	11	1.17%	3	0.36%	12	1.34%	3	0.33%
Hazmat	0	0	0	0	5	0.61%	4	0.45%	1	0.11%
Total	1033	100.00%	941	100.00%	824	100.00%	901	100.00%	896	100%

Emergency vs. Non-Emergency Injuries

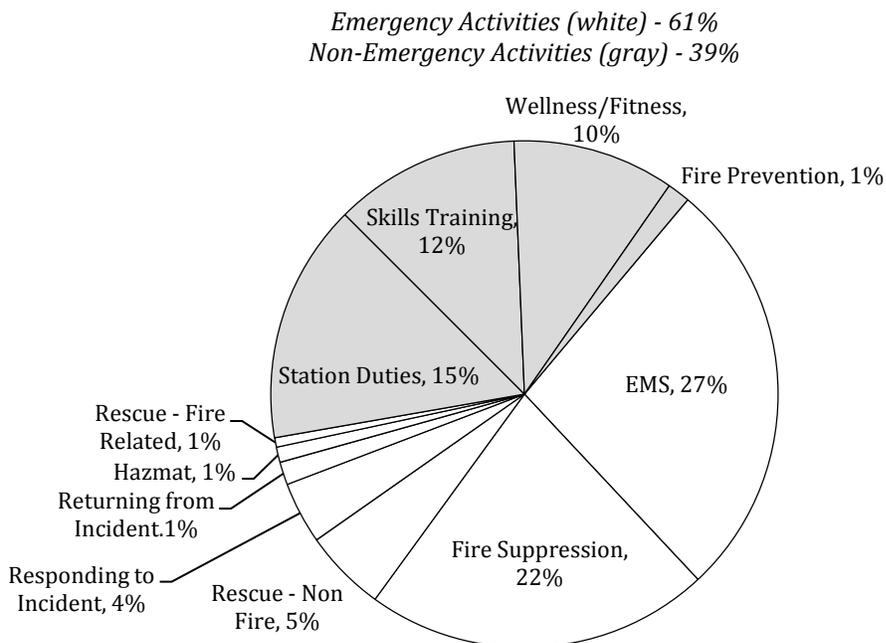
Table 4: Injuries by Emergency Activity and Severity, 2016

Activity	Minor	Serious	Critical	Fatal	Total
EMS	865	156	1		1022
Fire Suppression	656	173	5		834
Rescue - Non Fire	148	51			199
Responding to Incident	115	35			150
Returning from Incident	37	18			55
Hazmat	35	1	1		37
Total	1876	437	7	0	2320

Table 5: Injuries by Non-Emergency Activity and Severity, 2016

Activity	Minor	Serious	Critical	Fatal	Total
Station Duties	409	166	4		579
Skills Training	307	140	1	1	449
Wellness/Fitness	247	142	3		392
Fire Prevention	44	11			55
Total	1003	459	8	1	1448

Figure 2: Percent of Injuries in Emergency and Non-Emergency Activities, 2016

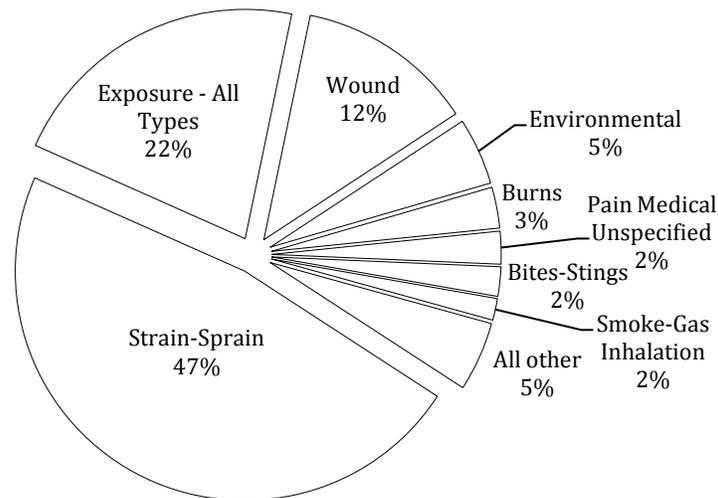


Injuries by Type

Table 6: Types of Injury, 2012-2015 (Note: ordered by 2015, descending)

Type of Injury	2012		2013		2014		2015		2016	
	Count	Percent								
Strain-Sprain	2140	50.19%	2118	52.30%	1917	47.27%	1839	49.42%	1801	47.46%
Wound	631	14.80%	548	13.53%	483	11.91%	491	13.20%	474	12.49%
Exposure-Undetermined	23	0.54%	77	1.90%	120	2.96%	287	7.71%	222	5.85%
Exposure Airborne	404	9.47%	281	6.94%	369	9.10%	141	3.79%	217	5.72%
Environmental	133	3.12%	106	2.62%	101	2.49%	142	3.82%	180	4.74%
Exposure Blood Pathogens	160	3.75%	164	4.05%	183	4.51%	181	4.86%	148	3.90%
Exposure - Body Fluids	124	2.91%	138	3.41%	109	2.69%	167	4.49%	121	3.19%
Burns	176	4.13%	166	4.07%	113	2.79%	95	2.55%	110	2.90%
Exposure-Chemical	128	3.00%	90	2.22%	313	7.72%	53	1.42%	95	2.5%
Pain Medical Unspecified	49	1.15%	62	1.53%	79	1.95%	66	1.77%	88	2.32%
Bites-Stings	93	2.18%	87	2.15%	79	1.95%	69	1.85%	79	2.08%
Smoke-Gas Inhalation	22	0.52%	30	0.74%	20	0.49%	36	0.96%	58	1.53%
Chest Pains-Cardiac	40	0.94%	50	1.23%	46	1.13%	37	0.99%	49	1.29%
Broken Bones	46	1.08%	59	1.46%	39	0.96%	40	1.07%	40	1.05%
Hearing Loss - Chronic	7	0.16%	2	0.05%	4	0.10%	7	0.19%	35	0.92%
Debris/Penetrating	51	1.20%	38	0.94%	38	0.94%	34	0.91%	33	0.87%
Exposure-Chemical-CO	1	0.02%	6	0.15%	3	0.07%	3	0.08%	17	0.45%
Hearing Loss - Acute	18	0.42%	14	0.35%	21	0.52%	19	0.51%	16	0.42%
Electrocution	11	0.26%	12	0.30%	12	0.30%	9	0.24%	8	0.21%
Stroke	1	0.02%	0	0.00%	1	0.02%	0	0.00%	2	0.05%
Broken Spine-Neck	4	0.09%	1	0.02%	4	0.10%	2	0.05%	1	0.03%
Heart Attack	2	0.05%	2	0.05%	1	0.02%	3	0.08%	1	0.03%
Total	4264	100.00%	4051	100.00%	4055	100.00%	3721	100.00%	3795	100.00%

Figure 3: Types of Injury, 2016



Task at Time of Injury

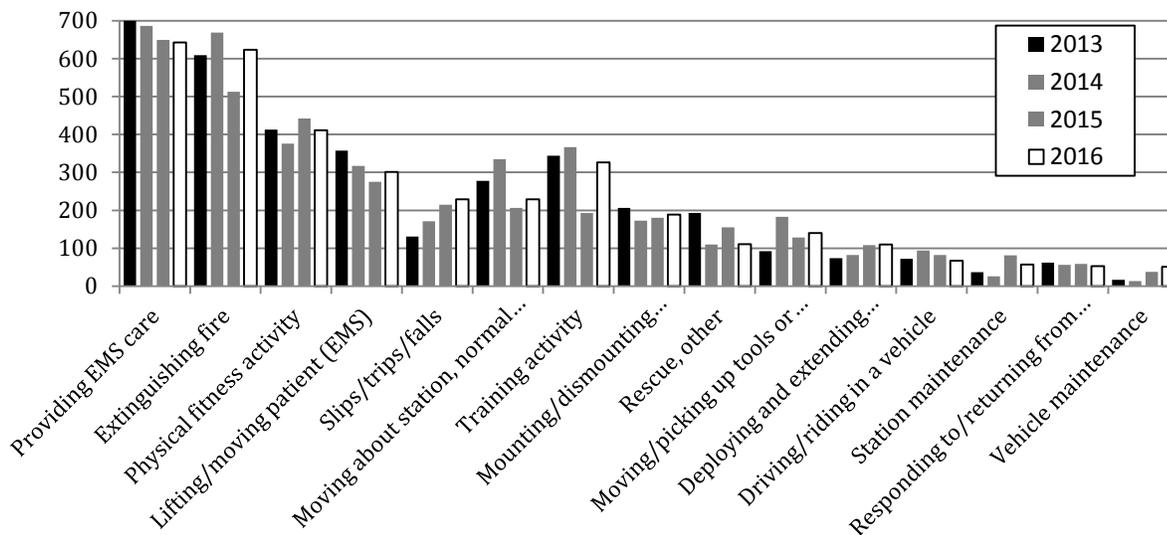
(The commission began gathering task information in mid-2012.)

Table 7: Top 15 Tasks at Time of Injury, 2013-2016 (ordered by 2016, descending)

Task	2013	2014	2015	2016
Providing EMS care	708	686	649	643
Extinguishing fire or neutralizing incident	609	669	513	623
Physical fitness activity	413	376	442	411
Lifting/moving patient (EMS)	357	317	275	301
Slips/trips/falls	131	171	215	229
Moving about station, normal activity	278	335	206	229
Training activity	344	367	193	326
Mounting/dismounting apparatus	206	173	180	189
Rescue, other	193	110	155	111
Moving/picking up tools or equipment	92	183	128	140
Deploying and extending hoseline	74	82	108	110
Driving/riding in a vehicle	72	94	82	67
Station maintenance	37	26	81	57
Responding to/returning from incident	62	56	59	53
Vehicle maintenance	17	13	38	51
All other*	458	397	397	374*
Total	4051	4055	3721	3795

* All other, 2016, in descending order: Other: Description (52); Vehicle maintenance (51); Overhaul (34); Extrication (30); Operating manual tool (29); Ascending/descending stairs (28); Forcible entry (19); Ascending/descending ladder (18); Moving about station, alarm sounding (17); Inspection activity (14); Operating power tool (13); Manually moving item to gain access (11); Non-fire Incidents (11); Incident investigation (9); Operating in low/no visibility (8); Unknown (6); Crawling in a confined or otherwise hazardous area (6); Raising/lowering ladder (6); Operating fire department apparatus (5); Operating nozzle (4); Salvage (2)

Figure 4: Top 15 Tasks at Time of Injury, 2013-2016



Injuries by Body Part

Table 8: Injuries by Body Part, 2012 – 2016 (ordered by 2016, descending)

Body Part	2012	2013	2014	2015	2016
Multiple body parts, whole body	760	595	901	659	783
Knee	419	407	367	369	366
Hand and fingers	453	403	345	328	349
Hip, lower back, or buttocks	35	91	244	316	277
Back, except spine	686	588	372	207	239
Shoulder	272	293	230	241	231
Ankle	213	207	177	202	185
Leg, lower	105	108	86	117	131
Multiple Parts	5	62	160	180	121
Face	95	128	118	140	115
Arm, lower, not including elbow or wrist	89	84	94	84	105
Foot and toes	132	105	79	71	83
Chest	30	66	64	40	80
Head	96	94	73	69	80
Ear	72	54	52	60	72
Wrist	71	79	68	48	71
Eye	106	100	98	75	66
Multiple body parts, upper body	22	57	27	52	61
Elbow	98	68	66	51	47
Other body parts injured	357	381	265	500*	333*
Total	4264	4051	4055	3721	3795

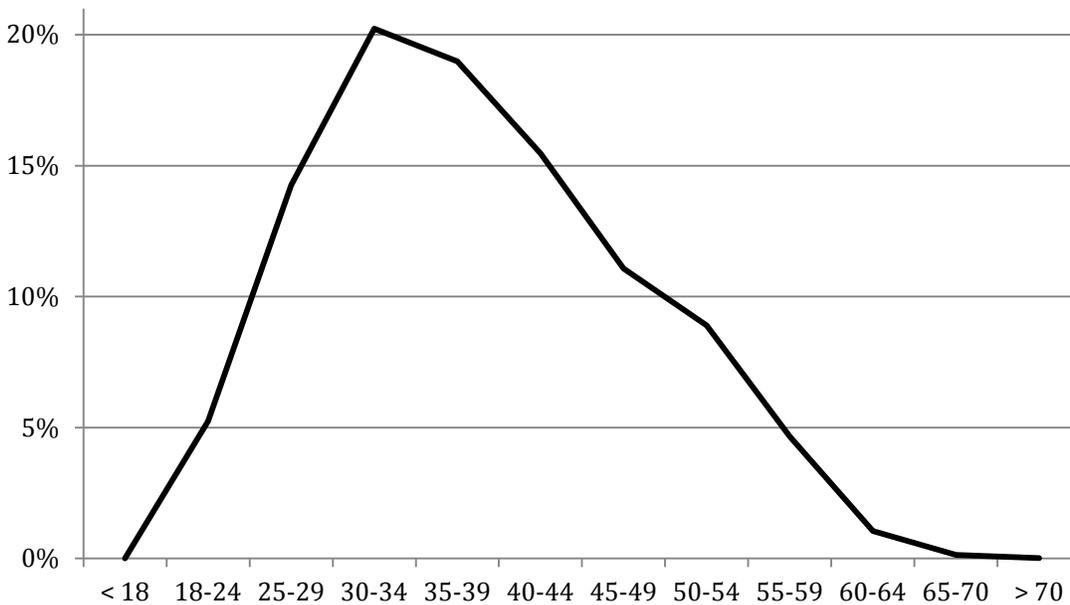
* **Other body parts injured, 2016, in descending order:** Abdomen (46); Neck (44); Trachea and lungs (43); Upper extremities (32); Arm, upper, not including elbow or shoulder (31); Pelvis or groin (31); Leg, upper (21); Neck and shoulders (21); Mouth, included are lips, teeth, and interior (18); Lower extremities (17); Undetermined (9); Multiple body parts, lower body (6); Part of body, other (4); Throat (3); Heart (2); Nose (2); Abdominal area (1); Internal (1); Spine (1)

Injuries by Age Group

Table 9: Injuries by Age Group, 2012 - 2016

Age group	2012		2013		2014		2015		2016	
	Count	Percent								
< 18	0	0.00%	0	0.00%	1	0.02%	0	0.00%	0	0.00%
18-24	254	5.96%	219	5.41%	178	4.39%	187	5.03%	206	5.43%
25-29	594	13.93%	584	14.42%	573	14.13%	543	14.59%	538	14.18%
30-34	925	21.69%	799	19.73%	749	18.47%	791	21.26%	760	20.03%
35-39	821	19.25%	729	18.00%	833	20.54%	682	18.33%	712	18.76%
40-44	621	14.56%	620	15.31%	674	16.62%	582	15.64%	577	15.20%
45-49	435	10.20%	443	10.94%	438	10.80%	405	10.88%	476	12.54%
50-54	373	8.75%	402	9.90%	380	9.37%	323	8.68%	295	7.77%
55-59	193	4.53%	198	4.89%	173	4.27%	181	4.86%	179	4.72%
60-64	41	0.96%	51	1.26%	49	1.21%	20	0.54%	49	1.29%
65-70	7	0.16%	6	0.15%	6	0.15%	5	0.13%	3	0.08%
> 70	0	0.00%	0	0.00%	1	0.02%	2	0.05%	0	0.00%
Totals	4264	100.00%	4051	100.00%	4055	100.00%	3721	100.00%	3795	100.00%

Figure 5: Injury Percentages by Age Group, 2012 - 2016



Injury Activities Resulting in Lost Time

Table 10: Injury Activities Resulting in Lost Time, Totals, 2016

Activity	Count	Days Missed	
		Average	Total
Fire Suppression	146	31	4569
Station Duties	140	38	5367
EMS	132	36	4731
Wellness/Fitness	124	38	4729
Skills Training	113	43	4881
Rescue - Non Fire	45	25	1127
Responding to Incident	28	37	1033
Returning from Incident	13	31	407
Fire Prevention	12	25	301
Rescue - Fire Related	3	8	24
Hazmat	2	10	20
Total	758	36	27189

Table 11: Activities Resulting in Lost Time, 2016, between 1 and 30 Days

Activity	Count	Days Missed	
		Average	Total
Fire Suppression	100	12	1178
Wellness/Fitness	85	12	1018
Station Duties	83	11	950
EMS	79	13	1004
Skills Training	68	10	685
Rescue - Non Fire	34	12	397
Responding to Incident	22	12	266
Fire Prevention	11	10	113
Returning from Incident	8	15	119
Rescue - Fire Related	3	8	24
Hazmat	2	10	20
Total, Between 1 and 30 Days	487	12	5774

Injury Activities Resulting in Lost Time (continued)

Table 12: Activities Resulting in Lost Time, 2016, between 31 and 90 Days

Activity	Count	Days Missed	
		Average	Total
EMS	42	54	2274
Station Duties	42	53	2234
Fire Suppression	35	54	1874
Skills Training	28	50	1405
Wellness/Fitness	22	54	1181
Rescue - Non Fire	10	61	608
Returning from Incident	5	58	288
Responding to Incident	2	56	111
Total,	186	54	9975

Between 31 and 90 Days

Table 13: Activities Resulting in Lost Time, 2016, 91+ Days

Activity	Count	Days Missed	
		Average	Total
Skills Training	17	164	2791
Wellness/Fitness	17	149	2530
Station Duties	15	146	2183
Fire Suppression	11	132	1453
EMS	11	138	1517
Responding to Incident	4	164	656
Fire Prevention	1	188	188
Rescue - Non Fire	1	122	122
Total,	77	149	11440

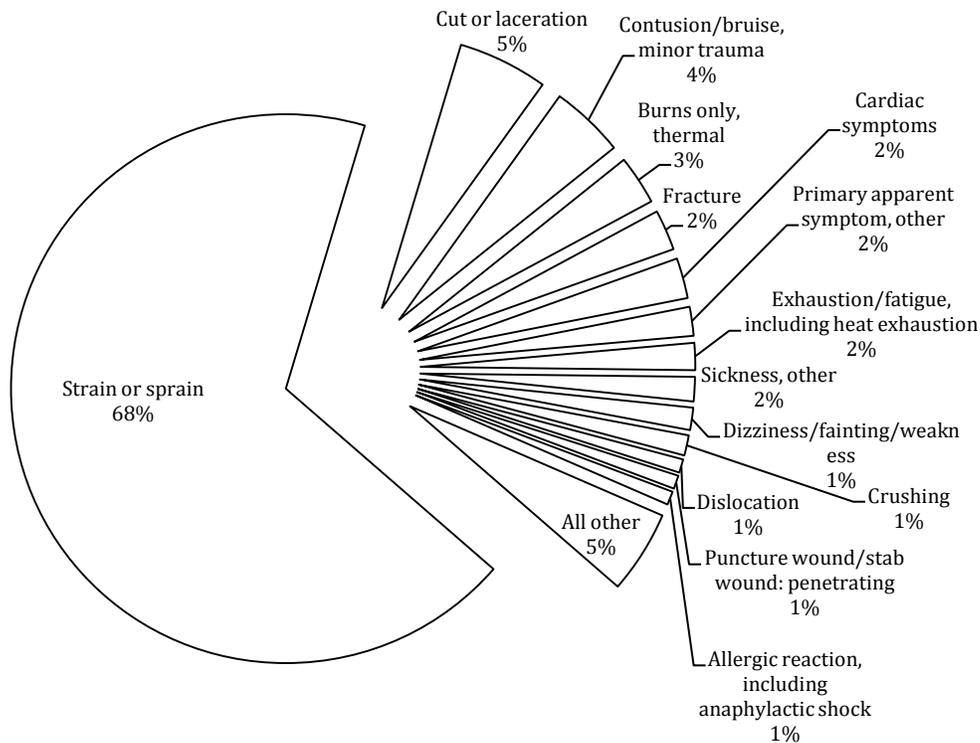
91+ Days Missed

Types of Injuries with Lost Time

Table 14: Types of Injuries Resulting in Lost Time, 2016

Type of Injury	Count	Average Days Out
Strain or sprain	518	41
Cut or laceration	40	24
Contusion/bruise, minor trauma	33	21
Burns only, thermal	22	16
Fracture	18	67
Cardiac symptoms	18	14
Primary apparent symptom, other	13	61
Exhaustion/fatigue, including heat exhaustion	12	9
Sickness, other	11	24
Dizziness/fainting/weakness	10	21
Crushing	9	28
Dislocation	6	59
Puncture wound/stab wound: penetrating	6	20
Allergic reaction, including anaphylactic shock	6	10
All other	37	16
Total	705	36

Figure 6: Types of Injuries Resulting in Lost Time, 2016



Burn Injuries

Table 15: All Burns, 2013 - 2016

All Burns - Types	2013	2014	2015	2016
Thermal	92	76	85	90
Scald or steam	71	33	10	11
Chemical	0	2	0	7
Electric	2	2	0	2
Total	165	113	95	110

Table 16: Burns with Lost Time by Burn Type, 2016

Burns with Lost Time	Count	Average Days Missed	Total Days Missed
Thermal	22	16	357
Total	22	16	357

Table 17: Burns by Body Part, 2013 - 2016 (ordered by 2016, descending)

Body Part	2013	2014	2015	2016
Hand and fingers	35	18	14	27
Face	14	13	12	16
Ear	29	13	22	14
Multiple parts	16	16	8	10
Wrist	10	5	4	9
Multiple body parts, upper body	3	4	5	8
Neck	9	9	6	4
Leg, lower	4	1	6	3
Shoulder	13	5	5	3
Arm, lower, not including elbow or wrist	12	9	3	2
Foot and toes	5	2	1	2
Head	5	3	4	2
Upper extremities	0	6	2	2
Lower extremities	5	2	1	2
Arm, upper, not including elbow or shoulder	1	2	2	1
Chest	1	0	0	1
Hip, lower back or buttocks	0	1	0	1
Knee	1	0	0	1
Back, except spine	0	2	0	0
Elbow	1	0	0	0
Eye	0	1	0	0
Neck and shoulders	1	1	0	0
Throat	1	0	0	0
Total	166	113	95	110

Burn Injuries (continued)

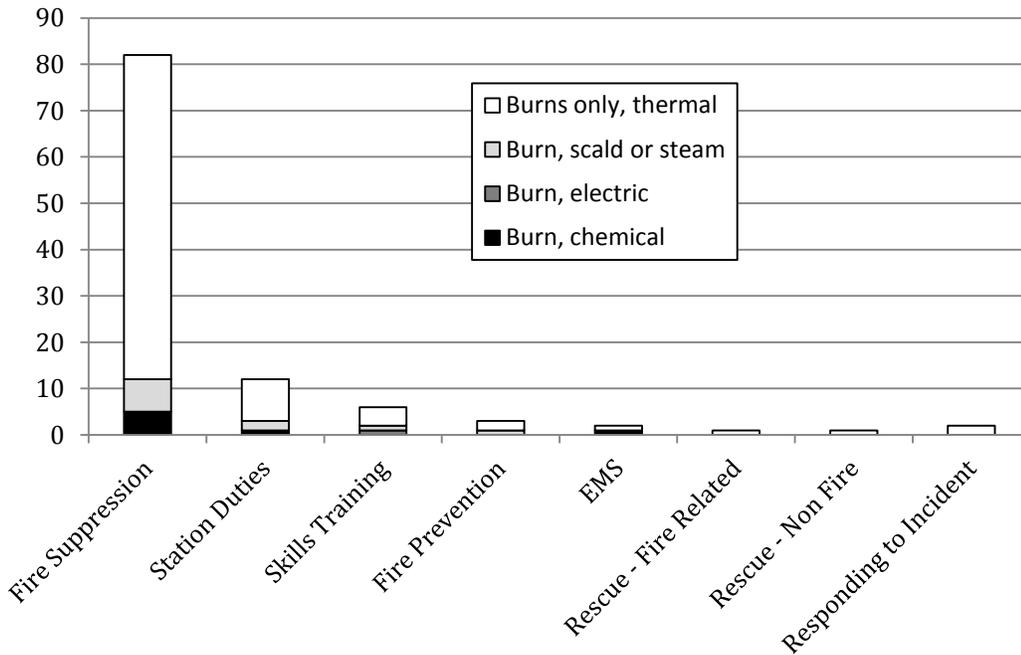
Table 18: Burns by Emergency Activity, 2016

Type	Emergency Activities				
	Fire Suppression	EMS	Responding to	Rescue - Fire Related	Rescue - Non Fire
Thermal	70	1	2	1	1
Scald or Steam	7				
Chemical	5	1			
Electric					
Total	82	2	2	1	1

Table 19: Burns by Non-Emergency Activity, 2016

Type	Non-Emergency Activities		
	Station Duties	Skills Training	Fire Prevention
Thermal	9	4	2
Scald or Steam	2	1	1
Chemical	1		
Electric		2	
Total	12	7	3

Figure 7: Burns by Activity, 2016

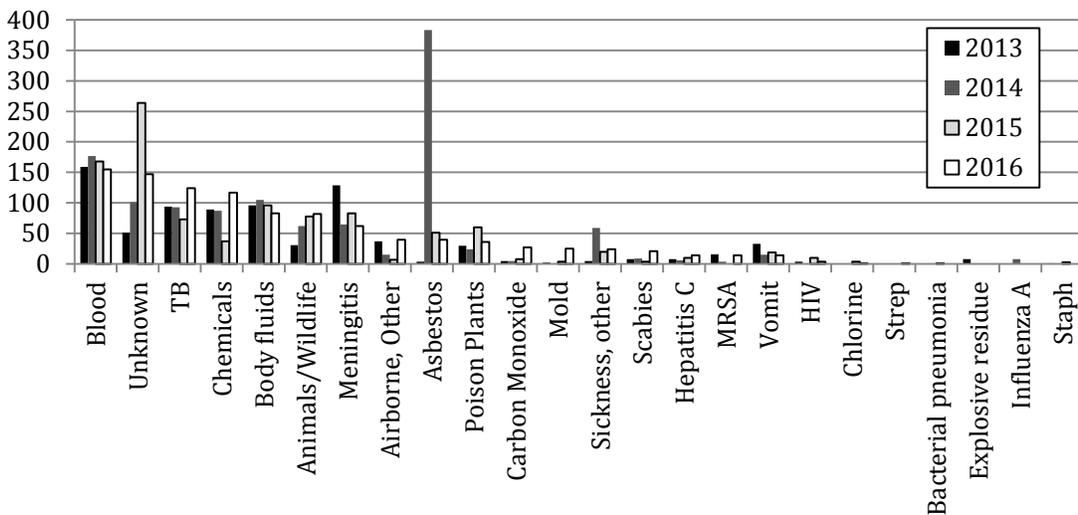


Exposures

Table 20: Exposure Agents, 2013-2016

Exposure Agents	2013	2014	2015	2016
Blood	159	177	168	155
Unknown	51	101	264	147
TB	94	93	73	124
Chemicals/household/industrial	89	87	37	117
Body fluids	96	105	96	83
Animals/Wildlife	31	62	78	82
Meningitis	129	65	83	62
Airborne, Other	37	15	7	40
Asbestos	4	383	51	40
Poison Plants	30	24	60	36
Carbon Monoxide	5	5	8	27
Mold	2	0	4	25
Sickness, other	5	59	20	24
Scabies	8	9	4	21
Hepatitis C	8	6	10	14
MRSA	16	4	0	14
Vomit	33	15	19	14
HIV	4	0	10	4
Chlorine	0	0	4	1
Strep	0	0	0	1
Bacterial pneumonia	0	0	1	0
Explosive residue	8	0	0	0
Influenza A	0	8	0	0
Staph	1	0	3	0
Total	810	1218	1000	1031

Figure 8: Exposure Types, 2013 - 2016



Cancer reports

The commission received 14 reports of cancer diagnoses from fire departments in 2016. The commission encourages departments to report these illnesses to help the Texas fire service gain a better understanding of long-term illnesses from which fire protection personnel are suffering:

Male, 54

Five pre-cancerous sites on scalp.

Male, 48

Multiple myeloma.

Male, 41

Cancer diagnosis.

Male, 57

Prostate cancer.

Male, 46

Cancer diagnosis.

Male, 59

Squamous cell carcinoma.

Male, 51

Thyroid cancer.

Male, 31

Cancer diagnosis.

Male, 33

Thyroid cancer, papillary carcinoma.

Male, 39

Skin cancer, upper body.

Male, 43

Basal cell skin cancer.

Male, 33

Testicular cancer.

Male, 44

Cancer, internal organs.

Male, 52

Skin cancer, upper body.

SOP Issues

In 2016 there were 21 injuries attributed to failures of fire protection personnel to follow their departments' standard operating procedures (SOPs). All but a few were instances where the individuals were not wearing their provided PPE/SCBA gear in an environment or situation in which they should have been.

In its compliance inspections, the Texas Commission on Fire Protection verifies that fire departments have written SOPs that cover the appropriate subject matter.

Table 21: Injuries Attributed to SOP Issues, 2016

Activity	Minor	Serious	Total
Fire Suppression	6	4	10
EMS	3		3
Skills Training	1	2	3
Wellness/Fitness	1	2	3
Rescue - Non Fire		1	1
Station Duties		1	1
Total	11	10	21

Fatalities

The commission's 2016 injury report includes one fatality. Fatalities listed in this report include only those reported to the Texas Commission on Fire Protection (TCFP) by the entities it regulates. (The commission has no statutory authority to require reporting by departments it does not regulate.)

The State Fire Marshal's Office investigated four Texas fire fighter LODDs in 2016. (Comprehensive information regarding Texas fire service deaths is included in the State Fire Marshal's Annual Report and on its website at <http://www.tdi.texas.gov/fire/fmloddindividuals.html>.)

Close-up: wellness/fitness injuries

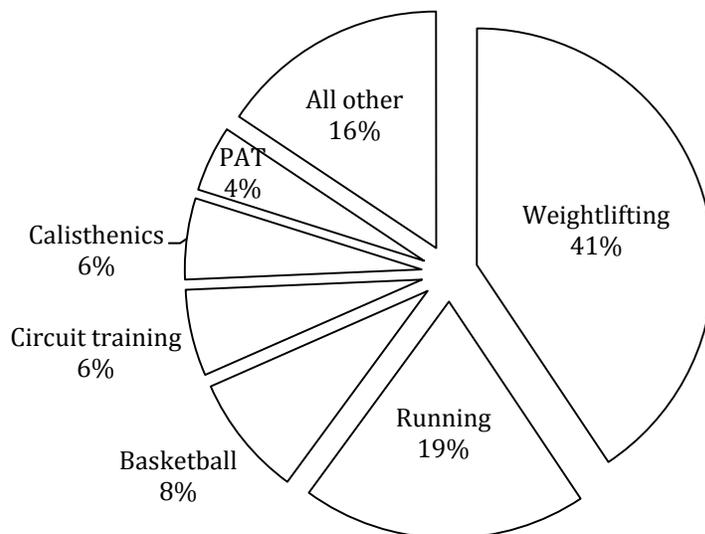
Of the 392 wellness/fitness injuries reported in 2016, 288 included brief descriptive information of the specific activity being performed at the time of injury:

Table 22: Identified fitness activities resulting in injury, 2016

Fitness activity	Count	Percent
Weightlifting	117	41%
Running	56	19%
Basketball	24	8%
Circuit training	17	6%
Calisthenics	16	6%
PAT	13	5%
All other*	45	16%
Total	288	100%

*Other fitness/wellness activities: Box jumps (6); Cardio (5); Volleyball (5); Football (4); Martial arts (3); Rowing (3); Tire flipping (3); Medicine ball (2); Walking/hiking (2); Elliptical machine (1); Flipping tires (1); Jump rope (1); Moving equipment (1); Paddle ball (1); Rescue dummy (1); Rope climb (1); Stair stepper (1); Stress test (1); Stretching (1); Tennis (1); Yoga (1)

Figure 9: Identified fitness/wellness activities resulting in injuries, 2016



Close-up: skills training injuries

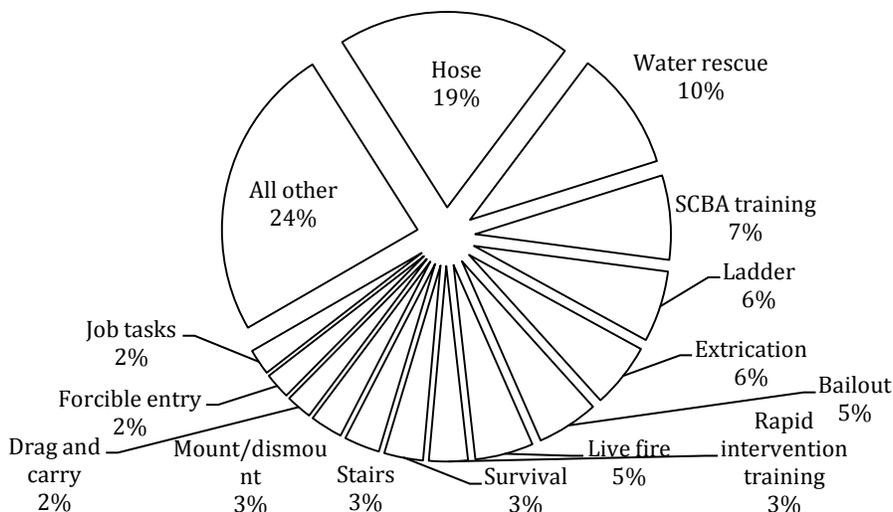
Of the 449 skills training injuries reported in 2016, 374 included brief descriptive information of the specific activity being performed at the time of injury:

Table 23: Identified skills training activities resulting in injury, 2016

Skills training activity	Count	Percent
Hose	72	19%
Water rescue	37	10%
SCBA training	26	7%
Ladder	22	6%
Extrication	20	5%
Bailout	19	5%
Live fire	18	5%
Rapid intervention training	12	3%
Survival	12	3%
Stairs	11	3%
Mount/dismount	10	3%
Drag and carry	8	2%
Forcible entry	8	2%
Job tasks	8	2%
All other*	91	24%
Total	374	100%

*Other skills training activities: Rope training (7); Search and rescue (7); EMT training (6); Moving equipment (6); Obstacle course (6); Running/walking/fitness (8); Martial arts (4); Power tool (4); Technical rescue (4); PAT (3); Active shooter (2); Blackout maze (2); Confidence course (2); Drill tower (2); High angle rescue (2); Rappelling (2); Ventilation (2); Wildland (2); Airbag (1); Apparatus (1); Car fire (1); Classroom (1); Confined space (1); Cycling (1); Denver drill (1); High rise (1); Hiking (1); Mayday training (1); Pittsburg drill (1); Salvage and overhaul (1); Search drill (1); Self evacuation (1); Sled (1); Slips, trips and falls (1); Structural collapse (1); UTV (1); Weapons (1); Weighted dummy (1)

Figure 10: Identified skills training activities resulting in injuries, 2016



Comparison between the State of Texas (2016) and National Fire Protection Association (NFPA), U.S. Firefighter Injuries – 2015

For the purposes of comparison, the commission has mapped its categories to the NFPA categories as follows:

- “Fireground” includes the commission’s Fire Suppression and Rescue – Fire Related.
- “Non-Fire” includes Rescue Non-Fire, EMS and Hazmat.
- “Other On-Duty” includes Fire Prevention, Station Duties and Wellness/Fitness.

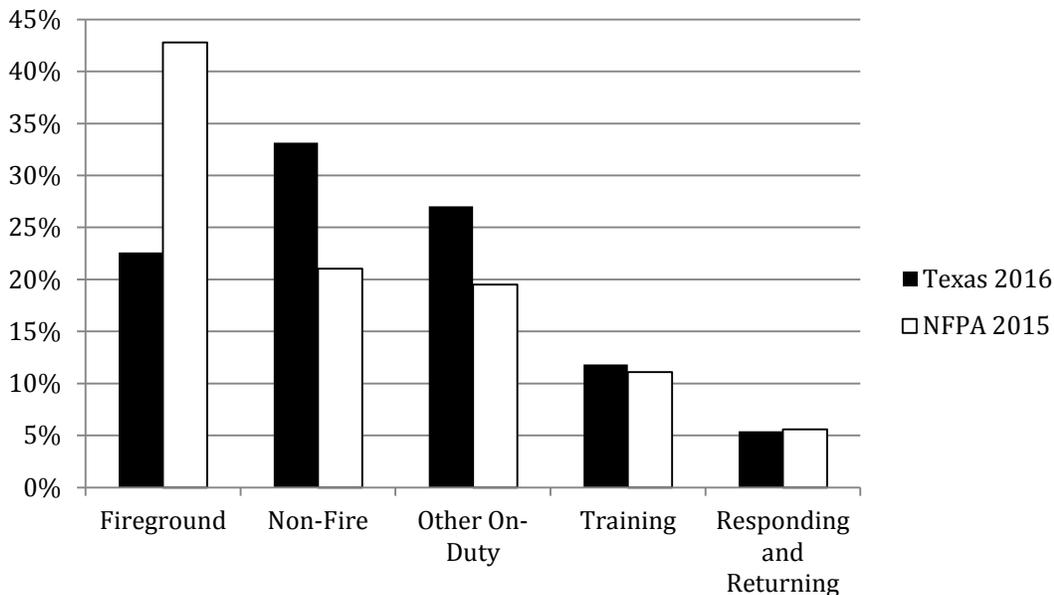
The NFPA’s “Responding and Returning” and “Training” categories appear to correspond closely to the commission’s categories. (The NFPA numbers include Texas statistics, although the reporting populations may not be the same.)

Table 24: Comparison of Texas 2016 and NFPA 2015

Category	Texas 2016		NFPA 2015*	
	Count	Percent	Count	Percent
Fireground	857	23%	29130	43%
Non-Fire	1258	33%	14320	21%
Other On-Duty	1026	27%	13275	19%
Training	449	12%	7560	11%
Responding and Returning	205	5%	3800	6%
Total	3795	100%	68085	100%

* NFPA data is from [U.S. Firefighter Injuries – 2015](#), copyright© 2016 National Fire Protection Association, Quincy, MA.

Figure 11: Injuries by Activity Percentages – Comparing Texas 2016 and NFPA 2015



2016 Findings/Recommendations

Commission-adopted standards

The commission has adopted several NFPA and other nationally recognized standards to help keep Texas fire protection personnel safe. This list summarizes the relationships between some of the Texas laws and national standards and is not intended to be all-inclusive:

Texas Government Code

[§419.040, Protective Clothing](#)

[§419.041, Self-Contained Breathing Apparatus](#)

[§419.042, Personal Alert Safety Systems](#)

[§419.043, Applicable National Fire Protection Association Standard](#)

[§419.044, Incident Management System](#)

[§419.045, Personnel Accountability System](#)

[§419.046, Fire Protection Personnel Operating at Emergency Incidents](#)

[§419.047, Commission Enforcement](#)

Texas Administrative Code

[CHAPTER 425 FIRE SERVICE INSTRUCTORS](#)

[§443.9 National Fire Protection Association Standard](#)

[CHAPTER 435 FIRE FIGHTER SAFETY](#)

[§435.21 Fire Service Joint Labor Management Wellness-Fitness Initiative](#)

[§435.23 Fire Fighter Injuries](#)

[§435.25 Courage to be Safe So Everyone Goes Home Program](#)

[§435.27 Live Fire Training Structure Evolutions](#)

[CHAPTER 451 FIRE OFFICER](#)

[CHAPTER 457 INCIDENT SAFETY OFFICER CERTIFICATION](#)

Other resources

See also the commission's web page: [NFPA Standards adopted by the commission.](#)

11. Discussion and possible action on setting future meeting dates, locations and agenda items.

12. Adjourn meeting.