13. **Discussion only regarding 2011 fire fighter injury data collected.**

Texas Commission on Fire Protection

Preliminary Injury Report

January 1, 2011 to December 31, 2011

Presented to:

Fire Fighter Advisory Committee

March 8, 2012

Presented by

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Executive Summary

The executive summary details the abstract, the mission, the reports, information and data collected as well as user-community input. The report goes on to include Fire Fighter injuries in 2011 with charts and graphs depicting the collected information. The report also compares with (NFPA) *U.S. Firefighters Injuries – 2010*. The report includes two Near Miss Incidents and a summary of lessons learned as well as four fatalities. The fatalities listed in this report are only those reported to the Texas Commission on Fire Protection (TCFP). These fatalities are not the only ones incurred for the reporting period due to the difficulty TCFP staff is having gathering data from all fire service organizations. The same can be said for the gathering of injury data. The agency is dependent upon the fire service community to submit complete injury data so that comprehensive reports can be produced. Only the reporting entities can resolve the issue of under reporting of injury events. The inclusion of the TCFP data into the State Fire Marshal's Report on LODDs not only emphasizes all injuries, including TCFP reported fatalities, but the need for full fire service participation in this system. Finally it concludes with recommendations to the Texas Commission on Fire Protection commissioners. The final report will be sent to the State Fire Marshal's Office.

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Abstract

Texas Commission on Fire Protection received 4,180 reported injuries in calendar year 2011. 1,179 injuries were reported in Fire Suppression. This is 28% of the total injuries reported. An even larger number of reported injuries were in Rescue Non-Fire at 1,323, 32%. The next biggest groups were Station Duties with 681, 16%. The last two closest groups are Skills Training and Wellness/Fitness with 368, 8% and 315, 7% Leading causes of injury in Fire Suppression are strains and sprains, followed by Environmental (heat exhaustion, poisonous plants) and Wounds. The leading causes of injury in Rescue Non-Fire are strains and sprains followed by Exposures to Airborne (TB, meningitis) and blood-borne pathogens.

Mission

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

The Commission strongly supports the continuation of the staff's aggressive educational and outreach programs. These programs are, by design, intended to provide information on the various educational resources available through TCFP's Ernest A. Emerson Library; associated references linked to this subject; TCFP staff clearinghouse and outreach programs such as the "Avoid Injury Blog" and newsletters; and the adoption of the "Courage to Be Safe" program.

Building a Community of Safety

The goal of the Texas Commission on Fire Protection Injury Reporting program is to help the fire service community identify common injuries and learn how to avoid them.

Why we are collecting injury data.

The Texas Legislature charged the commission with gathering and evaluating data on injuries and assisting the fire service in increasing safety. This is listed under Texas Government Code §419.048. The rules are established by Texas Administrative Code §435.23, which requires regulated entities to report injuries to the commission. We also strongly encourage volunteer entities to report their injuries so that we gain as accurate a picture as possible concerning injury trends in the Texas fire service.

What information do we collect?

Both Minor and Major (serious/critical/fatal) injuries
Activities where fire personnel are getting injured
Types of injuries (burns, strain-sprains, wounds etc.)
Body parts being injured
Missed time
Work assignment after injury
Malfunctions/failures of PPE, SCBA, PASS Devices and SOPs

How this will help you.

Identify common injuries
Identify trends in injuries
Identify needed training in departments
Evaluate and find improvements in department procedures
Find out about lost time injuries

Learn more and get help

Information from reported injuries is being provided to the fire service community via our "Avoid Injury!" blog, the library resources and librarian expertise, and the year-end report to the State Fire Marshal's Office.

Reports, Information and Data Collection

This report contains data submitted by commission-regulated and non-regulated entities. The data collected in 2011 was the first full year of reporting. We anticipate it will take five years of reporting to provide more substantive and accurate data for trending and analysis. Of the approximate 600 regulated departments, we had 48% report an injury, 46% report they had no injuries and 6% that did not respond to any request for response.

We continually reach out to all the entities to communicate: the need to report; the types of information needed; and how to respond to inquiries and investigations. Commission staff members attended a variety of Texas Fire Chief Regional meetings as well as some local chiefs' meetings in order to communicate information we have gathered from injury reporting and to stress the need for it. We also presented at the 13th Annual Texas Fire Marshals' Conference. Agency personnel met with the State Firemen's and Fire Marshals' Association (SFFMA) and are providing information to their monthly E-INFOFIRE newsletter.

In order to become more service-oriented as we request additional data, we looked for a way to provide information back to the fire service community, and as a result, we created the "Avoid Injury!" blog. The focus of the blog is to provide information not only on the numbers, but also to provide information about the wealth of resources that are available through the Ernest A. Emerson Fire Protection Resource Library. We provide updated statistics on a rolling calendar cycle. The blog posts focused initially on the most prevalent injuries occurring and available resources. Each month has a different topic. This information is also posted on the commission's Facebook page.

Throughout the year we have received feedback from stakeholders on what challenges they have incurred and what changes they would like to see. The agency hosted a webinar and a face-to-face meeting with the user community to gather additional data. About 20 individuals participated and the information we received was invaluable. A few changes were implemented at the beginning of 2012 and the remaining information will be incorporated as much as possible in the newest version of FIDO.

Based on input from the stakeholders a few of the changes we were able to implement in 2012 were:

1. Adding **EMS** as an Activity. We want to be able to see how many injuries are happening on EMS calls. We can tell by the narratives that these are occurring, but want to be able to break this information out in order to better analyze it.
2. Adding **Student** as an Employee Status in order to accommodate the training facilities, colleges as well as those departments that conduct academies.
3. Adding the following to Work Assignment after injury:
    a. Deceased,
    b. Retired,
    c. No longer with department,
    d. Medically Separated
    e. Change of duty (permanent change)
    f. Modified / Light Duty (temporary change – previously restricted duty).
4. Adding Injury due to **Exposure Body Fluids**. This is another area where we see quite a bit of activity.
5. To help address the issue of an injury possibly going from minor to serious, we are not closing the injury reports until 10 calendar days have passed from the date of entry.
6. Collecting information on multiple injuries to a single individual.

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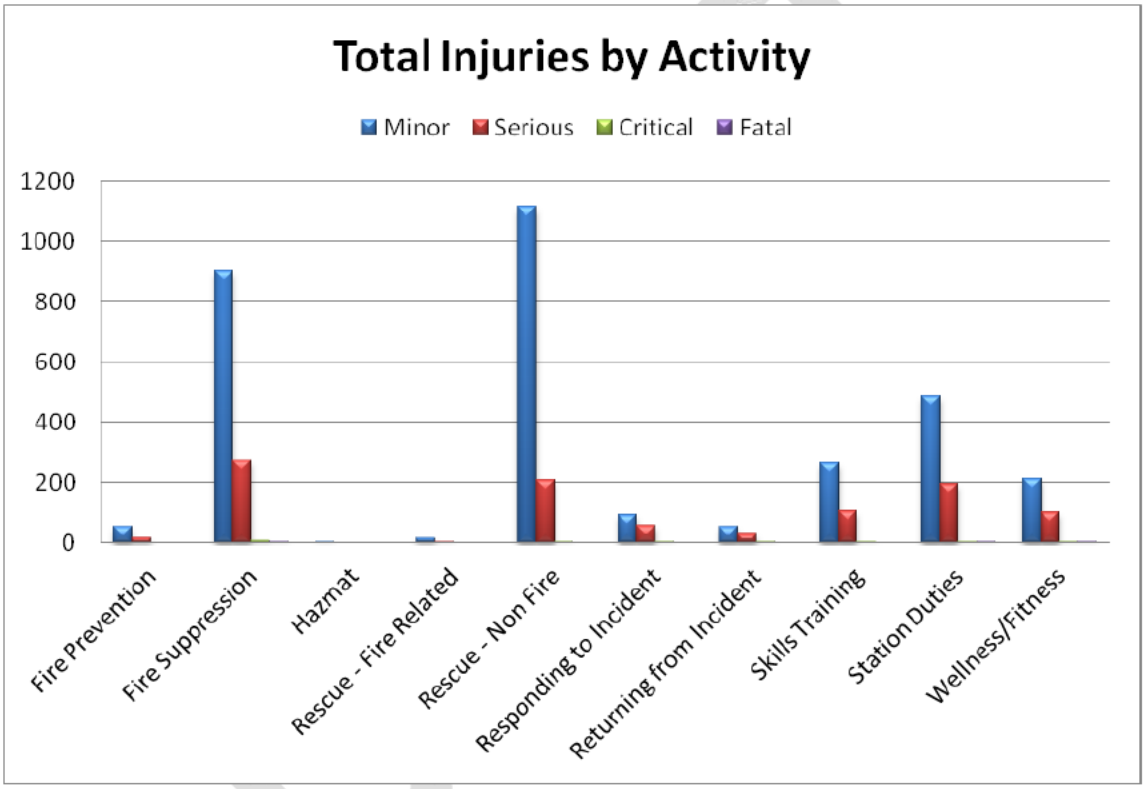
Fire Fighter Injuries 2011

The numbers reflect injuries reported for January 1, 2011 to December 31, 2011, compared against the nine months of reports for 2010. We are also comparing the Texas numbers with the **(NFPA)** ***U.S. Firefighter – Injuries - 2010*** report that was issued in October 2011. Since 2011 was the first full year of data collection, 2011 will serve as the baseline for injury reporting going forward.

The number of reported injuries was 4,180.

The Total Injuries by Activity graph shows the overall types of injuries incurred by Activity in 2011. There were a total of 3,182 minor injuries, 978 serious, 16 critical and 4 fatalities.



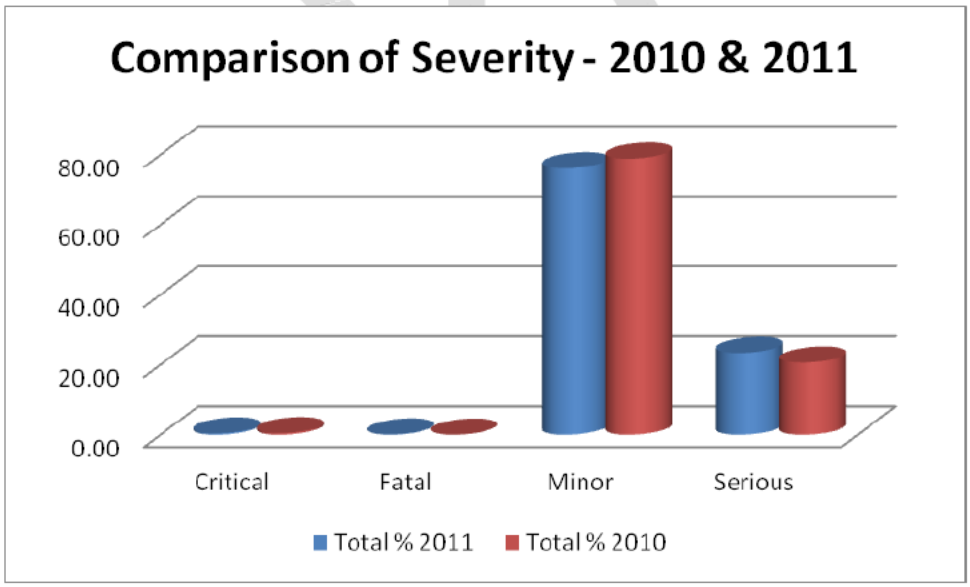
Injuries by Severity

In 2010, 78% of the injuries reported were minor, in 2011 it dropped to 76%. The serious injuries in 2010 were 20%, and in 2011, 23%. The trends between year one and year two will probably change in year three as 2011 is the first full reporting year, and as the program continues to grow the numbers will continue to change.

Severity	2011	2010
Critical	16	11
Fatal	4	1
Minor	3,182	1,897
Serious	978	496
Grand Total	4,180	2,405

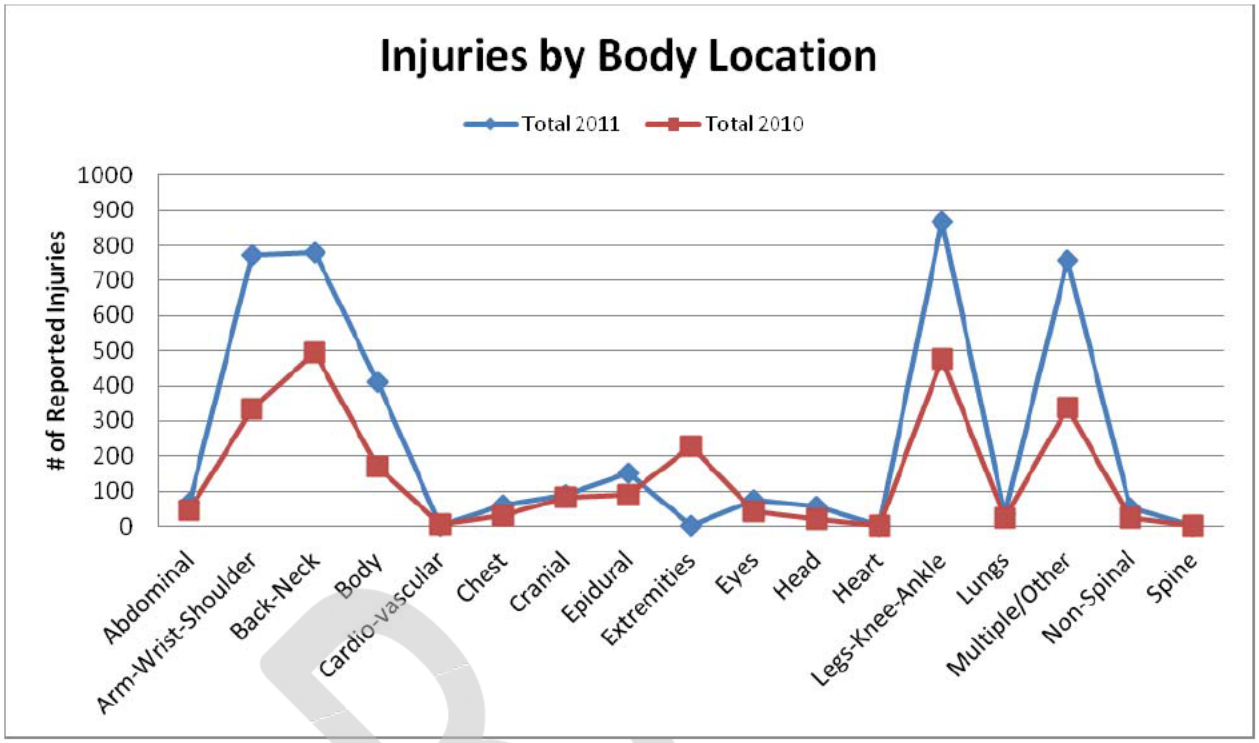
The table below shows the percentage of injuries reported by severity for both 2010 and 2011.

Severity	Total % 2011	Total % 2010
Critical	0.38	0.46
Fatal	0.10	0.04
Minor	76.12	78.88
Serious	23.40	20.62
Grand Total	100.00	100.00



Injuries by Body Location

Trends in injury body locations remained consistent during the first two reporting periods.



In the 2011 data, we were able to remove the extremities category and place the affected body parts in the appropriate areas. This provides a more concise picture of the injuries.

Injuries by Activity

The trending at this point shows the injuries are occurring during the same activities with the same degree of severity.

The percentage of injuries occuring between 2010 and 2011 are very similar.

Activity by Percentage	Minor 2011	Minor 2010	Serious 2011	Serious 2010
Fire Prevention	1.6	1.2	1.7	1.4
Fire Suppression	28	22	28	23
Hazmat	.06	.4	0	.8
Rescue - Fire Related	.4	.6	.4	.4
Rescue - Non Fire	35	38	21	24
Responding to Incident	2.8	3.6	5.4	5.2
Returning from Incident	1.6	1.6	3	3.2
Skills Training	8.3	7	11	11
Station Duties	15	18	20	19
Wellness/Fitness	6.7	8.5	10	11.7
Grand Total	3182	1897	978	496

Injuries numbers by activity

Activity	Minor 2011	Minor 2010	Serious 2011	Serious 2010
Fire Prevention	51	22	17	7
Fire Suppression	900	412	270	115
Hazmat	2	7	0	4
Rescue - Fire Related	14	11	4	2
Rescue - Non Fire	1,113	716	208	119
Responding to Incident	92	68	53	26
Returning from Incident	50	30	28	16
Skills Training	263	135	104	55
Station Duties	485	335	193	94
Wellness/Fitness	212	161	101	58
Grand Total	3,182	1,897	978	496

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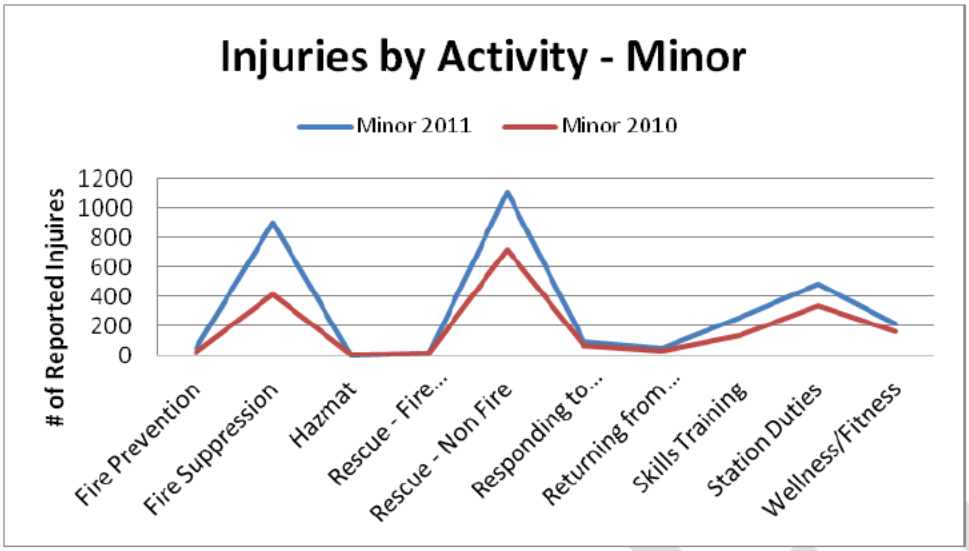
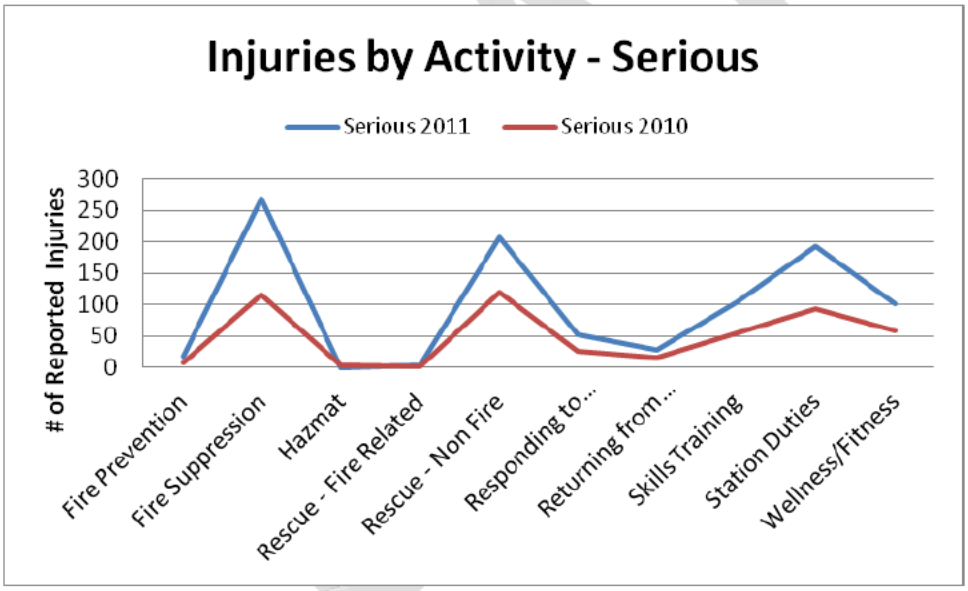
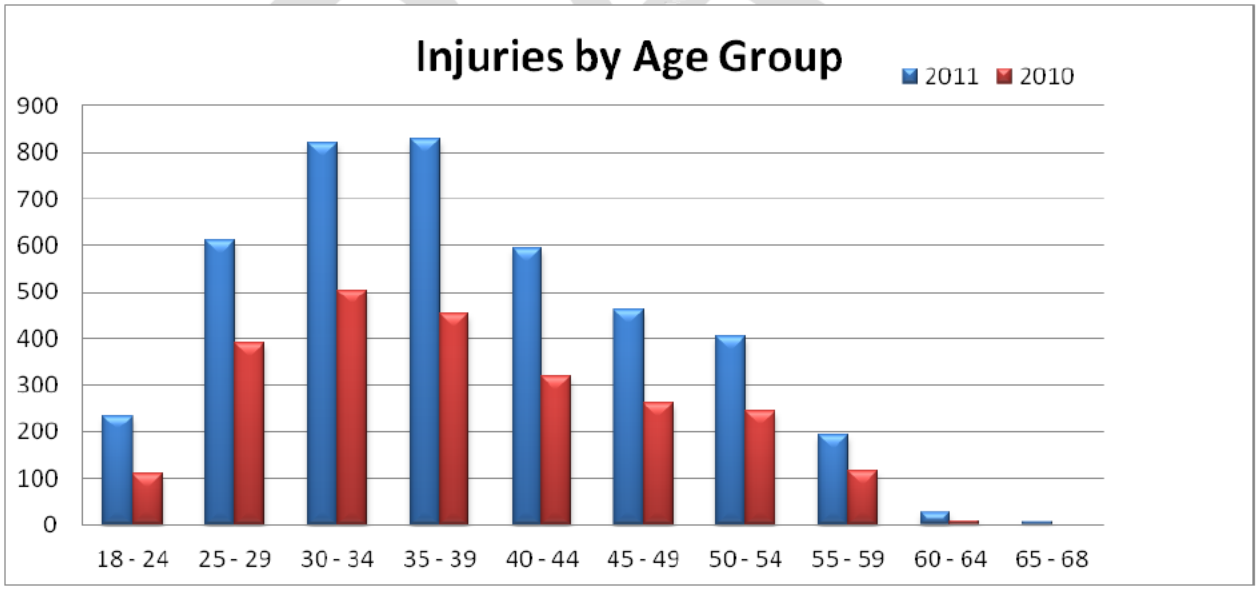

Injuries by Activity - Minor
Minor 2011
Minor 2010
# of Reported Injuires
1200
1000
800
600
400
200
0
Fire Prevention
Fire Suppression
Hazmat
Rescue - Fire...
Rescue - Non Fire
Responding to...
Returning from...
Skills Training
Station Duties
Wellness/Fitness


Injuries by Activity - Serious
Serious 2011
Serious 2010
# of Reported Injuries
300
250
200
150
100
50
0
Fire Prevention
Fire Suppression
Hazmat
Rescue - Fire Related
Rescue - Non Fire
Responding to...
Returning from...
Skills Training
Station Duties
Wellness/Fitness

Injuries by Age group

The average age of the reporting population is 38. . Almost 40% of the injuries are occurring in the 30-39 age range.

	12 months	12 months	9 months	9 months
Age Groups	2011	2011	2010	2010
18 - 24	234	5.60%	109	4.53%
25 - 29	611	14.62%	390	16.22%
30 - 34	819	19.59%	503	20.91%
35 - 39	829	19.83%	453	18.84%
40 - 44	593	14.19%	318	13.22%
45 - 49	463	11.08%	262	10.89%
50 - 54	404	9.67%	244	10.15%
55 - 59	193	4.62%	117	4.86%
60 - 64	27	0.65%	9	0.37%
65 - 68	7	0.17%	0	0.00%
	4180		2405	



Injuries – with lost time

Information on lost time has been requested from the fire service community throughout 2011. We are providing this information in the report this year based on these requests. Of the 4,180 injuries reported in 2011, 18% of the injuries resulted in missed days. The commission defines missed work as "lost time" when an individual misses more than one full duty period as a direct result of an injury and does not return to the duties to which they were assigned prior to the injury.

Example: an individual who sustained an injury returns to work on their normally assigned duty period, but the department temporarily assigns the individual to modified or light duty (temporary) rather than their normal, pre-injury duty. This person has sustained a lost time injury.

Injury	# of Injuries with lost time
Bites-Stings	11
Broken Bones	31
Broken Spine-Neck	2
Burns	33
Chest Pains-Cardiac	30
Debris/Penetrating	3
Electrocution	1
Environmental	33
Exposure Airborne Pathogens	2
Exposure-Chemical	2
Pain Medical Unspecified	12
Smoke Inhalation	1
Smoke-Gas Inhalation	8
Strain-Sprain	514
Stroke	1
Wound	91
Grand Total	**775**

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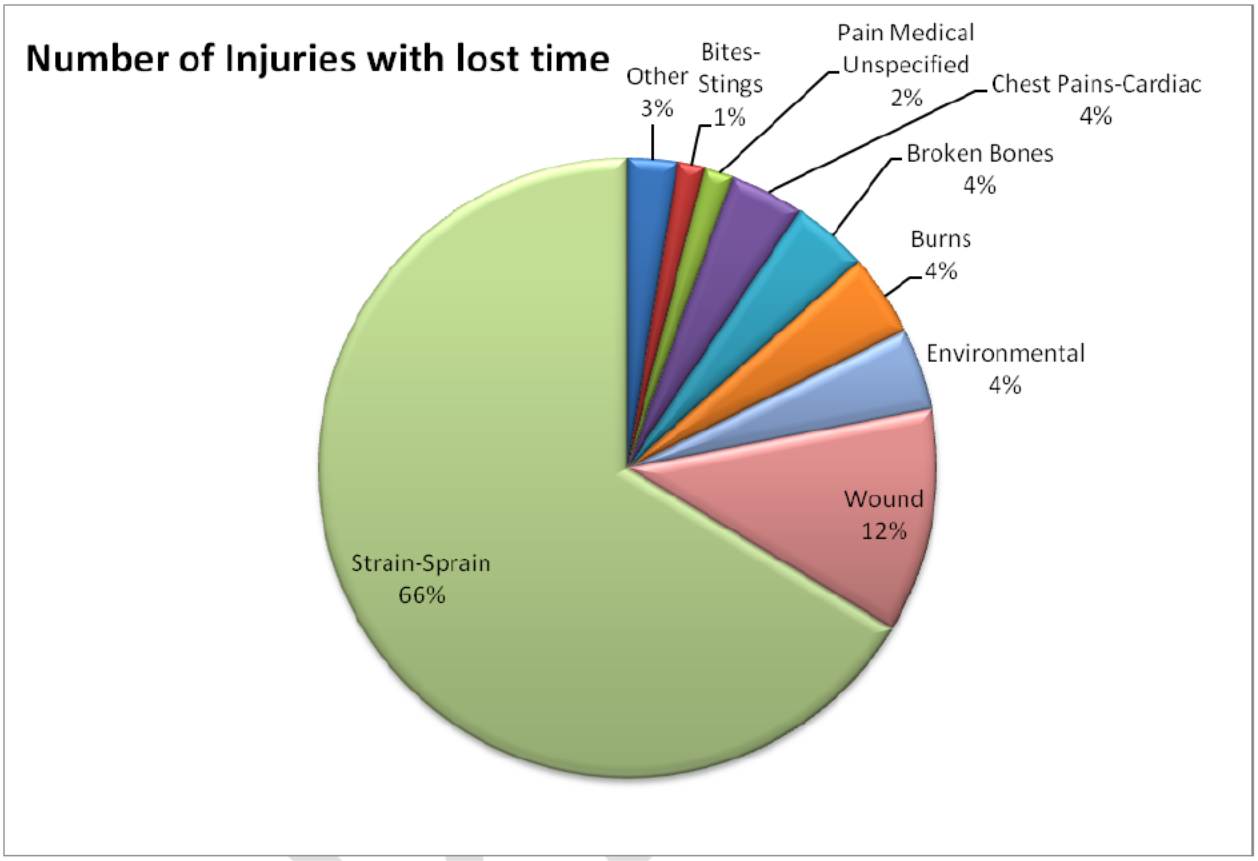
Number of Injuries with lost time
Other 3%
Bites-Stings 1%
Pain Medical Unspecified 2%
Chest Pains-Cardiac 4%
Broken Bones 4%
Burns 4%
Environmental 4%
Wound 12%
Strain-Sprain 66%

Injuries – Lost Time

By Activity – between 1 and 30 days

Activity	The # of injuries leading to 1-30 days missed	Average # of days missed (lost time)	Total days missed (lost time)
Fire Prevention	11	9.91	109
Fire Suppression	155	10.02	1,553
Rescue - Fire Related	3	11.67	35
Rescue - Non-fire	109	10.72	1,168
Responding to Incident	22	12.41	273
Returning from Incident	18	12.22	220
Skills Training	50	11.86	593
Station Duties	102	11.30	1,153
Wellness/Fitness	52	11.46	596
Grand Total	**522**	**10.92**	**5,700**

By Activity – between 31 and 90 days

Activity	The # of injuries leading to 31-90 days missed	Average # of days missed (lost time)	Total days missed (lost time)
Fire Prevention	2	63.00	126
Fire Suppression	44	53.30	2,345
Rescue - Non Fire	27	53.48	1,444
Responding to Incident	8	59.13	473
Returning from Incident	1	51.00	51
Skills Training	10	49.90	499
Station Duties	30	57.57	1,727
Wellness/Fitness	18	53.11	956
Grand Total	**140**	**54.44**	**7,621**

By Activity – 91+ days

Activity	The # of injuries leading to 91 + days missed	Average # of days missed (lost time)	Total days missed (lost time)
Fire Prevention	4	195.75	783
Fire Suppression	23	186.74	4,295
Rescue - Non Fire	30	211.50	6345
Responding to Incident	10	148.60	1,486
Returning from Incident	4	131.00	524
Skills Training	12	161.00	1,932
Station Duties	18	151.50	2,727
Wellness/Fitness	12	142.92	1,715
Grand Total	**113**	**175.28**	**19,807**

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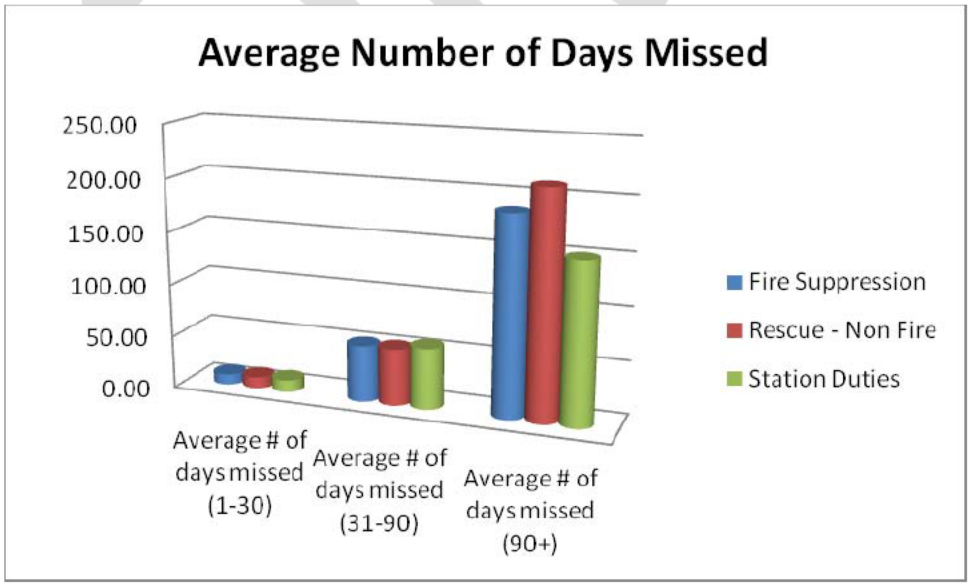
Activity – combined chart of lost time from 1 day to 91+ days.

Activity	The # of injuries leading to 1-30 days missed	The # of injuries leading to 31-90 days missed	The # of injuries leading to 91 + days missed)
Fire Prevention	11	2	4
Fire Suppression	155	44	23
Rescue - Fire Related	3	0	0
Rescue - Non Fire	109	27	30
Responding to Incident	22	8	10
Returning from Incident	18	1	4
Skills Training	50	10	12
Station Duties	102	30	18
Wellness/Fitness	52	18	12
Grand Total	**522**	**140**	**113**

Average Lost Time by Activity – combined chart average lost time from 1 day to 91+ days.

Activity	Average # of days missed (1-30)	Average # of days missed (31-90)	Average # of days missed (90+)
Fire Prevention	9.91	63.00	195.75
Fire Suppression	10.02	53.30	186.74
Rescue - Fire Related	11.67	0	0
Rescue - Non Fire	10.72	53.48	211.50
Responding to Incident	12.41	59.13	148.60
Returning from Incident	12.22	51.00	131.00
Skills Training	11.86	49.90	161.00
Station Duties	11.30	57.57	151.50
Wellness/Fitness	11.46	53.11	142.92
Grand Total	**10.92**	**54.44**	**175.28**



Burns and PPE

The majority of the burn injuries we saw in 2011 were to the ears, face, neck and hands. The gear being worn by the individuals was across the board in different brands/manufacturers. Based on the information gathered the gear appeared to perform as designed and may have prevented more serious injuries from occurring. (There were some cases the geared appeared to have been pushed to its design limits.) Specific information on gear manufacturer, etc., was not collected on burns where the individual was not wearing the provided PPE/SCBA.

Injury Type	Avg.1- 30 days missed (lost time)	Avg. 31-90 days missed (lost time)	Avg. 91 + days missed (lost time)
Burns	10.55	35.5	*247

*represents one injury

Burns: Actual Body Part	Total
Ears	33
Hand and fingers	33
Face	14
Neck	11
Arm, lower, not including elbow or wrist	9
Neck and Shoulders	8
Wrist	8
Head, other	5
Foot and toes	4
Multiple body parts, upper body	4
Multiple body parts, whole body	4
Upper extremities	4
Back, except spine	3
Leg, lower	3
Abdominal area	2
Cheek	2
Leg, upper	2
Arm, upper, not including elbow or shoulder	1
Body	1
Chest	1
Elbow	1

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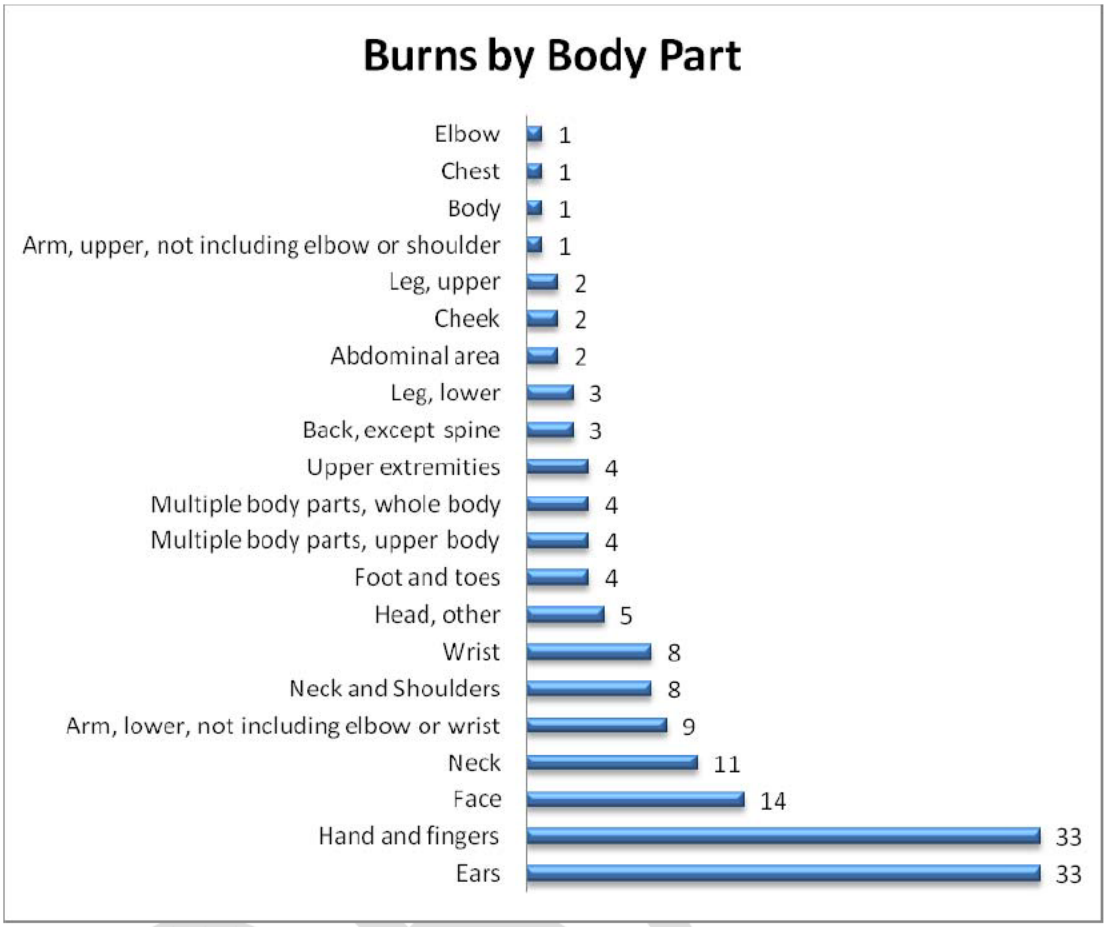
Burns by body part



SOP Issues

There were 26 SOP violations reported in 2011. All but a few were SOP violations in which individuals were not wearing their provided PPE/SCBA gear in an environment or situation in which they should have. The departments are reviewing their SOPs to make sure they are up to date and/or are completing additional training to make sure these violations do not occur again.

In these situations, the Texas Commission on Fire Protection verifies with the department that the SOPs are in place and cover the appropriate subject matter. We do not become involved in any internal disciplinary actions taken with employees surrounding these issues, as this is not within the commission's scope of authority. However, the commission stands ready to partner with the fire service by providing assistance, expertise and educational resources to promote a safer community.

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Comparison between the State of Texas (2011) and National Fire Protection Association (NFPA*) U.S. Firefighter – Injuries - 2010*

We compared our numbers with NFPA's annual report from 2010 that was issued in October 2011. Their numbers include numbers reported from Texas. There is an overlap between our numbers and NFPA's in that regard.

This chart shows the comparison for the State of Texas reported injuries and the NFPA's report. The number of non-fire emergencies for the state of Texas is a much larger percent compared to national. According to the NFPA report, the number of non-fire emergencies has increased significantly, but they are not seeing the number of injuries increasing (see report page 5 in 2009 and 2010).

> *For the same period, the number of non fire emergencies increased a substantial 247% due in large part to an increase in the number of medical aid incidents. When the injury rate per 1000 non fire emergencies is examined, the rate has declined during the period from 1.24 in 1981 to 0.50 in 2010 (Figure 3), because the number of non fire emergencies increased at a higher rate than the number on injuries at non fire emergencies.*
>
> - NFPA, *U.S. Firefighter – Injuries - 2010*

In Texas, the number of non-fire emergencies occurring and the number of injuries that are resulting specifically around EMS type calls is significant. We do not have the specific numbers in 2011 but hope to see these in 2012.

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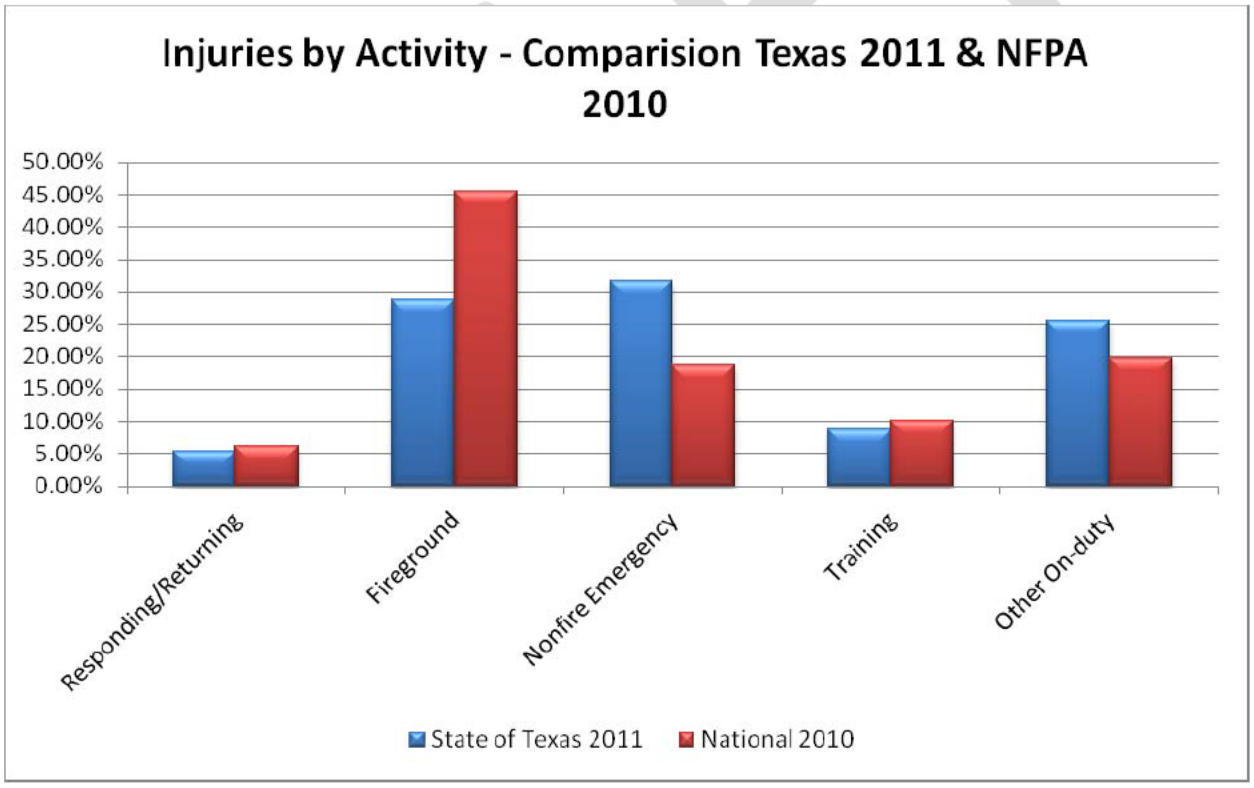
Texas Commission on Fire Protection categories:

- Fire Ground includes Fire Suppression and Rescue – Fire Related.
- Non-Fire includes Rescue Non-Fire and Hazmat.
- Other on-duty includes Fire Prevention, Station Duties and Wellness/Fitness.

Activity	State of Texas 2011		National 2010	
Responding/Returning	226	5.41%	4380	6.09%
Fire ground	1197	28.64%	32675	45.46%
Non-fire Emergency	1325	31.70%	13355	18.58%
Training	368	8.80%	7275	10.12%
Other On-duty	1064	25.45%	14190	19.74%
	4180		**71875**	



Firefighter Injuries by Nature of Injury and Type of Duty, (NFPA) U.S. Firefighter Injuries -2010, Page 10

Report 2011	Respond/Return TX 2011		Respond/Return NFPA 2010	
	Number	Percent	Number	Percent
Burns (Fire or Chemical)	1	0.44	50	1.1
Smoke-Gas Inhalation	1	0.44	20	0.5
Other Respiratory Distress			60	1.4
Burns & Smoke Inhalation (no)			0	0.0
Wound, cut, bleeding, bruise	51	22.57	655	15.0
Dislocation, fracture	8	3.54	230	5.3
Heart Attack or Stroke	2	0.88	70	1.6
Strain, sprain, muscular pain	150	66.37	2705	61.8
thermal stress (frostbite, heat exhahustion)	2	0.89	205	4.7
Other	9	3.98	385	8.8
Exposures	2	0.89		
Totals	226	100	4380	100

Report 2011	Fireground TX 2011		Fireground NFPA 2010	
	Number	Percent	Number	Percent
Burns (Fire or Chemical)	132	11.03	1940	5.90
Smoke-Gas Inhalation	30	2.51	1220	3.70
Other Respiratory Distress			440	1.40
Burns & Smoke Inhalation (no)			555	1.70
Wound, cut, bleeding, bruise	208	17.38	4650	14.20
Dislocation, fracture	14	1.17	855	2.60
Heart Attack or Stroke	21	1.75	175	0.50
Strain, sprain, muscular pain	443	37.01	17250	52.80
thermal stress (frostbite, heat exhahustion)	170	14.2	2350	7.20
Other	12	1	3240	9.90
Exposures	167	13.95		
Totals	1197	100	32675	100

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Report 2011	Non Fire Emergency TX 2011		Non Fire Emergency NFPA 2010	
	Number	Percent	Number	Percent
Burns (Fire or Chemical)	3	0.23	90	0.70
Smoke-Gas Inhalation	3	0.23	115	0.90
Other Respiratory Distress			110	0.80
Burns & Smoke Inhalation (no)			10	0.10
Wound, cut, bleeding, bruise	165	12.45	1845	13.80
Dislocation, fracture	4	0.3	195	1.50
Heart Attack or Stroke	0	0	100	0.80
Strain, sprain, muscular pain	592	44.68	8650	64.80
thermal stress (frostbite, heat exhahustion)	8	0.6	140	1.10
Other	4	0.3	2100	15.70
Exposures	546	41.21		
Totals	1325	100	13355	100

Report 2011	Training TX 2011		Training NFPA 2010	
	Number	Percent	Number	Percent
Burns (Fire or Chemical)	7	1.9	205	2.80
Smoke-Gas Inhalation	1	0.27	50	0.70
Other Respiratory Distress			130	1.80
Burns & Smoke Inhalation (no)			35	0.50
Wound, cut, bleeding, bruise	70	19.03	1320	18.10
Dislocation, fracture	8	2.17	235	3.20
Heart Attack or Stroke	7	1.9	135	1.90
Strain, sprain, muscular pain	202	54.89	4255	58.50
thermal stress (frostbite, heat exhahustion)	41	11.14	380	5.20
Other	10	2.72	530	7.30
Exposures	22	5.98		
Totals	368	100	7275	100

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Report 2011	Other On Duty TX 2011		Other On Duty NFPA 2010	
	Number	Percent	Number	Percent
Burns (Fire or Chemical)	16	1.5	300	2.10
Smoke-Gas Inhalation	1	0.09	95	0.70
Other Respiratory Distress			200	1.40
Burns & Smoke Inhalation (no)			35	0.30
Wound, cut, bleeding, bruise	247	23.21	2640	18.60
Dislocation, fracture	20	1.88	305	2.20
Heart Attack or Stroke	30	2.82	330	2.30
Strain, sprain, muscular pain	634	59.59	7525	53.00
thermal stress (frostbite, heat exhahustion)	26	2.44	120	0.90
Other	33	3.1	2640	18.60
Exposures	57	5.37		
Totals	1064	100	14190	100

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Near-Miss Incidents

Summaries of Near-Miss Incidents

Three departments reported near-miss incidents involving injuries in 2011. Two of those summaries are included in this report. The departments themselves facilitated the investigations, with assistance and guidance from the Commission. The investigations were conducted in an open, proactive format involving members of the departments at every level, and led to the formulation of recommendations for future operations. This open and unbiased approach to post incident analysis represents a huge step in addressing needed cultural changes in the fire service, which must take place if we expect to see a significant reduction in fire fighter injuries and deaths. The adoption of the "Courage to Be Safe" program, teamwork involving local and state fire service organizations, and the cooperation and involvement of all members in every department will only serve to strengthen this effort.

In an effort to maximize the benefits of near miss reporting; the commission encourages all departments to submit near miss post incident analyses. We would like to be able to share these reports with the community but can do so anonymously. The names involved are not important, but the safety issues we all face are.

The departments whose summaries are included here are to be commended for taking the initiative in this area, and sharing their experience with the Texas fire service community. Thank you for your commitment to bringing about a culture of safety both in your own organization and in those serving alongside you throughout this great state.

Flower Mound

Date of Incident: June 17, 2011
Time: 2130
Weather Conditions: Hot 95 degrees, the day's high had been 102 with winds from the south, sustained at 23, gusts to 41 MPH, humidity 40%.
Size up: Large (5,100 sq. ft.) two-story single family residence, wood construction, brick veneer, composition shingle roof, fire through the roof of the attached three car garage (south side of residence).
Exposures: There were residential homes north and south with 15-ft. side-yard setbacks. Firebrands were landing on other structures to the north of the fire.

Initial actions: First crew was assigned the interior of the home on first floor with a 2.5" line to the door between the living space and the garage. The second interior crew was assigned to the second floor to do a primary search.

Of course it is human nature to minimize personal exposure when things go wrong. Most often that is exactly the worst thing you can do. To seek the root cause, discover, and to understand and learn is to protect you from future failure. It is also imperative to communicate those lessons to fire service personnel in hopes the information helps to prevent future casualties. The event we recently experienced resulted in injury to two firefighters. In actuality, it is very clear we were moments from losing two firefighters to a flashover in a residential property.

It would have been easy to do a quick post incident analysis; admit that was a close call and move on. Instead we wanted to dig deeper and analyze not only what went wrong, but what went right. To that end, we wanted to reinforce the actions of personnel, methods and procedures which allowed us to overcome a potentially lethal scenario. Of equal importance, we needed to know what factors, actions and dynamics that colluded to expose our personnel to grave danger. We felt it was essential we analyze the incident to discover these points. We needed to reveal the issues with a goal not to point fingers, assign individual blame or guilt.

A committee was assigned to analyze and evaluate this near miss. The personnel who were assigned to the task were not present at the fire. Each rank of the department from Battalion Chief to rookie firefighter served on the panel. The charge given was to look at all factors, not just the incident. The areas the committee evaluated included but were not limited to: personal accounts, bystander video, weather conditions, fire behavior, training, SOP's, communications, tactics, departmental culture, RIT, Mayday, command, company level and actions of personnel.

The final report provides enhanced details, but generally we found that:

- Prior to the incident, drills focusing on mayday and self-evacuation were invaluable. The two members recounted they realized they were in trouble and action must take place immediately. They called a Mayday before it was too late. The challenges of the drills conducted in a maze and live fire scenarios performed at various training fields in the area proved to be invaluable.
- As the Mayday was called, radio traffic ceased leaving just essential traffic centered on dealing with the Mayday. Over time we have been able to provide all personnel on the fireground with portable radios. With that came the benefit that personnel all know what is being communicated, but also the potential drawback of too much radio clutter. Prior to our event, Officers had listened to radio recordings of a fire where multiple firefighters were lost at another department. The significance was that Command seemed to be overwhelmed with answering non-priority communications, while you could tell he was attempting to account for his personnel.
- At the incident, personnel had accomplished, or were in the process of implementing RIT and rescue procedures in advance, and just in case of such a scenario. RIT was in place but additional ground ladders were being placed as the Mayday was called. A ladder was set just as the firefighters began their bailout of a window.
- The effects of the heavy winds (to 41 MPH) created challenging conditions as the fire grew rapidly in intensity.
- The building construction seemed to have a factor in the progress of the fire. The interior crew also recounted how a Mylar- like window film treatment inhibited their ability to break and clear glass for their escape.
- Crews were assigned to enter and search the residence, but failed to use a hose line to cover them. The area of the residence where they found themselves trapped and disoriented had initially been cool and with limited smoke. Their thermal imager was with them, but not

powered on. Once the fire breached the wall, the room was immediately untenable. Their tag line had also not been deployed.

- The choice of hand tools selected by the interior search crew was not the most appropriate for their assignment.

Since this event several actions have taken place:

- The final report from the panel has been disseminated to all personnel in the interest of applying lessons learned.
- The Captain, who was trapped with the firefighter, has created a website in order to share his experience with other fire personnel. His website includes the final document, radio traffic, bystander video and his personal thoughts. He has since developed a program which he has delivered to all of our personnel recounting the incident. He provides honest analysis of the lessons learned. He has also been a guest lecturer at many departments throughout North Texas to allow his experience to benefit others.
- We have evaluated the tactics utilized during this incident. We are training to reinforce the use of hose lines, tag lines, hand tools and thermal imaging when conducting interior search operations. Training also includes additional concentration on building construction and weather influences relative to fire behavior.
- Turnout gear is only a relatively thin barrier between a hostile and lethal environment and the firefighter inside. In sterile laboratory settings, structural gear is tested to provide about 17.5 seconds of personal protection in a flashover situation - before the firefighter receives a second-degree burn. Actual fireground conditions can vary widely. Our personnel have all examined the thermal insult the bunker gear and SCBA withstood. This visual drives home the need for proper use, inspection and care of PPE and SCBA. This incident underscores how essential it is to perform daily inspections and advanced testing of gear.

Upon conclusion of our evaluation, we found the panel conducted the analysis in a professional and thoughtful manner. We knew from inception it ran the risk of being perceived by personnel as being an exercise in blame and fault finding. In the end, the process actually worked to build trust as it was seen as thorough, honest and non-punitive. This event will serve to remind us we are engaged in a deadly serious profession. We don't want the lessons learned here to have been in vain, or be soon forgotten.

Hutto

Williamson County Emergency Services District #3
Hutto Fire Rescue

On September 5, 2011, Hutto Fire Rescue experienced a firefighter near-miss incident. This incident resulted in two firefighters receiving first- and second-degree burns to their arms, neck, and ears. While the injuries were minor when you consider what could have happened; nonetheless they were still injuries with lessons to be learned. Three areas for improvement resulted from our internal investigation into this near-miss incident.

These are as follows:
1. ***Equipment Checks***: These must be consistent across the job and must occur immediately at the start of each shift. This includes personal protective equipment as well as equipment assigned to the apparatus.
2. ***Training***: COMMAND training must be continued for all officers. Additionally, training must be completed and consistent for all full-time, part-time, PRN part-time, and volunteer-time personnel.
3. ***Personal Protective Equipment (PPE) Specifications***: Work with the Safety Committee on the development of specifications for all types of PPE. Do not just rely on a tag or brochure that states an item meets a particular National Fire Protection Association (NFPA) standard. These are minimum standards only. Not all items are alike even if they meet the minimum standard.

By following our own recommendations we believe that we can continue to reduce the number and severity of an injury in this fire department. Should you have any questions or comments, please do not hesitate to contact me.
Respectfully,
Scott D. Kerwood
Fire Chief

Wichita Falls

Summary Pending

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Fatalities

Four fatalities were reported to the Texas Commission on Fire Protection in 2011.

The first occurred on 4/15/2011. Eastland Fire Department

"Fire Dept. was working a large Wildland fire. Brush truck was trying to escape a firestorm along with other trucks. Another department's truck was stopped in the gate with nobody around it. Firefighter on back of brush truck baled off form extreme heat and jumped in Tanker. Driver of brush truck bailed out and ran to the County road outside the gate. After firestorm passed there were 3 firefighters missing. 2 were found and had got on other trucks and got out. Driver of brush truck was found dead in ditch of county road. Driver was wearing bunker pants no coat, no helmet, no gloves."

The second occurred on 6/23/2011. Dallas Fire-Rescue

"Employee was found unresponsive in bunk at fire station, CPR was performed, he was transported to ER, pronounced dead, cause now determined as coronary artery disease."

The third occurred on 7/26/2011. – This is not listed in the State Fire Marshal's report as it was not listed as an LODD. Baytown Fire & Rescue

"Firefighter worked a 24-hour shift beginning at 0700 on 07/25/2011. His crew responded to 3 calls within that shift. The firefighter also performed his physical exercises in the morning prior to leaving work. The exercises consist of stretching (yoga) and running on the track. The firefighter finished work at 0700 on 07/26/2011 and went home. At around noon he attended a karate class and then returned home. He took a nap (due to calls during the night) and his spouse attempted to wake him at around 1700. He was unresponsive. EMS was called and their attempts to revive him were futile. He was pronounced dead at home. The Jefferson County (Texas) M. E.'s office performed an autopsy."

The fourth occurred on 8/14/2011. Dallas Fire-Rescue

"While at a structure fire employee was on the roof to begin ventilation when the roof collapsed and employee dropped into attic, sustaining multiple injuries, pronounced dead at the hospital."

The State Fire Marshal's office compiles all the LODD reports for the state. Texas Commission on Fire Protection only had three of the LODD's reported to them through the Injury Reporting system. Full reports can be viewed at the State Fire Marshal's office at
http://www.tdi.texas.gov/fire/documents/fmloddannul11.pdf

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1. Finding: A number of burn injuries reported during the year were attributed to failure of the individual to properly don their PPE.
   Proposed Recommendation: Response personnel should take the additional few seconds at every emergency incident to double-check their own gear, and the gear of their team members, to ensure that all PPE has been properly donned. Recommend review or revision of department SOPs to include procedure for double-checking protective equipment prior to commencement of fire attack or other emergency operation.

2. Finding: A number of burn injuries were reported in situations where PPE had been properly donned and was still in place at the time of the injury. This would imply that personnel may be entering areas or remaining in situations where fire conditions are exceeding the protective limits of their gear.
   Proposed Recommendation: Situational awareness must be maintained at all times during emergencies, and personnel should be reminded that size up is a continual process at every incident. Recommend refresher training in tactics and strategy, and incident management; and review or revision of applicable SOPs as necessary.

3. Finding: A substantial number of reported injuries occurred during non-emergency activities such as routine station duties, hydrant maintenance, and wellness-fitness activities. Discretionary time is generally at a maximum during these activities, which should allow personnel plenty of opportunity to address safety considerations prior to commencing any actions.
   Proposed Recommendation: Recommend regular periodic reviews of department policies and procedures pertaining to non-emergency activities, and revision or amendment of those policies and procedures so as to increase personnel safety.

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