

## Safety Officer

Analyze scenarios and make recommendations about reports involving accidents, injuries, illnesses, fatalities and exposures

### References:

NFPA 1521 6.6.2 2008 Edition

IFSTA Fire and Emergency Services Company Officer, 4<sup>th</sup> edition

### Introduction:

In life as well as the fire and emergency services, people use analysis and evaluation on a daily basis. While at emergency incidents, safety officers analyze each piece of information during size-up to determine the most appropriate action to take. This approach is also true during other events that the safety officer must review and evaluate. A critical area that requires continuing attention is that of accident, injury, illness or fatality evaluation and analysis. This analysis is then used to determine how the item or project works or how an incident occurred. During this process each piece, component, or factor must be looked at to determine how it interacts with other parts of a system or event.

### Directions:

Analyze the information contained in the scenario and employee accident reports, form 104. Determine the best course of action to take that will assist in the prevention of further injuries. Once the analysis is completed, then prepare a memo to your battalion chief (manager/supervisor) that provides the following information:

- Any recurring problem resulting in injury
- Recommendations of actions that can be taken to prevent future injuries

## **Employee Accident Analysis**

You have just been appointed as company officer on E-1. The company is composed of a four person crew, Driver/Operator Tim Smith, Firefighter Teresa Johnson, Firefighter Lawrence Johnson and yourself. All of your crew members have been on the job for at least five years.

Last shift your crew responded to a structure fire during the day. Your company was ordered to extend an attack line into the structure. While taking the preconnected attack line out of the hose bed at the rear of the truck, Firefighter Teresa Johnson stumbled and suffered a severely sprained ankle. She was transported to the hospital and treated and released. She will be off duty for three weeks. You completed all the appropriate reports and notification.

After the fire, you interviewed Johnson at the station before she left for home. She stated that her foot slipped off one of the small side steps while she was trying to reach up and get the hose. She further explained that her boot was wet and she wasn't able to get all of her foot on the step. Without stepping up she wouldn't have been able to reach the preconnected hose line.

At shift change you mentioned the injury to the on-coming officer. He said that one of his firefighters had suffered the same type of injury while removing a preconnected hose line during training. After he mentioned this, you also remembered that D/O Smith suffered a similar injury at a fire last year while attempting to pull hose from the hose bed at a hydrant.

You decide that it may be worth your time to investigate the other injuries at the station to determine if a problem exists. After reviewing the injury incident reports from the three accidents you find:

- The fire apparatus that were involved in these accidents were part of a two-engine contract that were delivered in 1995 and 1996.
- One of the specifications for the engines was a provision to provide over-sized compartments on the rear step of the apparatus.
- These compartment openings interfered with the attachment of larger steps in this location.
- Engines with this configuration were limited to the two in this contract.
- It is not understood why the larger compartment doors were requested for use on these vehicles.

When you share your intention with your boss – Battalion Chief Jim McCardle – he applauds your efforts and directs you to send the results to him in a memo along with any recommendations.

## Anytown Fire Department Employee Accident Report

Date: May 25, 2005	Date of Accident: May 25, 2005 Time of Accident: 1950 hrs
Accident Classification: X Injury <input type="checkbox"/> Illness <input type="checkbox"/> Fatality	Incident/Accident Location: 1916 N. Chisolm
Employee Name: Johnson, Teresa	Incident Number: 05-032462
Employee Assignment Location: Shift: X A <input type="checkbox"/> B <input type="checkbox"/> C	Employee Rank/Classification: Firefighter
Employee Age: 27 Gender: X Female <input type="checkbox"/> Male	Type of Injury: Sprain of left ankle
Weather at Time of Accident: Fair/Night	Temperature at Time of Accident: 62°
Scene Conditions at Time of Accident: Structure Fire, Blowing Smoke	
Incident Commander: You	Shift Commander: Battalion Chief McCardle
Safety Officer: Captain Brad Kline	EMS Unit(s): PA 103
Motorized Equipment Involved in Accident: 1995 Engine (E-1).	
Personal Protective Equipment: All PPE was being worn in correct manner.	
<p>Narrative 1. How did the accident occur?</p> <p>F.F. Johnson was ordered to help extend a 1¾" line to the front door of the house at that address. Johnson stepped up on the tailboard and then stepped on a small side step with her left foot to be able to reach the hose line. While pulling on the hose to remove it from the hose bed her left foot slipped off of the side step resulting in a twisted ankle.</p>	
<p>Narrative 2. Why did the accident occur?</p> <p>Firefighter Johnson slipped while pulling attack line from hose bed of engine. Due to the height of the hose bed where the attack line is stored, F.F. Johnson used the side step provided. The side steps on the rear of the apparatus are</p>	

small and do not fit the boots that we use for suppression.	
Narrative 3. What could be done to reduce exposure risk for future accidents? Side steps need to be improved with either larger steps or the application of a non-skid surface.	
Name of Witnesses: F.F. Lawrence Johnson	
Signature of employee: <i>Teresa Johnson</i> Date: 05/25/05	Signature of Employee Supervisor: You Date: 05/25/05
Name of person filling out report You	

FORM 104 (2006)

## Anytown Fire Department Employee Accident Report

Date: July 7, 2004	Date of Accident: July 7, 2004 Time of Accident: 1030 hrs
Accident Classification: <input checked="" type="checkbox"/> Injury <input type="checkbox"/> Illness <input type="checkbox"/> Fatality	Incident/Accident Location: AFD Training Center
Employee Name: Clark Purdy	Incident Number: 04-026985
Employee Assignment Location: Shift: <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C	Employee Rank/Classification: Firefighter
Employee Age: 36 Gender: <input type="checkbox"/> Female <input checked="" type="checkbox"/> Male	Type of Injury: Sprain of left ankle
Weather at Time of Accident: Warm, Sunny	Temperature at Time of Accident: 88°
Scene Conditions at Time of Accident: Clear, Dry	
Training Officer: Captain Todd Blake	Shift Commander: Battalion Chief Close
Safety Officer: Captain Kline	EMS Unit(s) PA 108
Motorized Equipment Involved in Accident: 1996 Engine (E-7).	
Personal Protective Equipment: All personnel protective equipment was being worn in a proper manner.	
<p>Narrative 1. How did the accident occur?</p> <p>Injury occurred at the training grounds during single company drill on hose lays and hose advances. I had directed Purdy to advance a 1¾" preconnected hose line to the front door of the tower. Purdy stated that his left foot slipped off of a side step while trying to pull the hose load onto his shoulder. Purdy was examined at the scene and then taken to the hospital ER for evaluation. No break but moderate sprain. Doctor told Purdy he had to be off work for four days.</p>	
<p>Narrative 2. Why did the accident occur?</p> <p>Firefighter Purdy was directed to advance an attack line during a training exercise at the AFD Training Center. Purdy used the side step to reach the preconnect hose line in the hose bed. His foot slipped off of the step resulting in the injury.</p>	

<p>Narrative 3. What could be done to reduce exposure risk for future accidents?  The step that F.F. Purdy was using is very small. Firefighting boots are too large for the step. The step needs to be larger or the preconnect attack fire hose needs to be relocated so it does not require a step to reach it.</p>	
<p>Name of Witnesses:  F.F. Robert Nehls</p>	
<p>Signature of employee:  <i>Clark Purdy</i>  Date: 07/07/04</p>	<p>Signature of Employee Supervisor:  <i>Todd Blake, Capt.</i>  Date: 07/07/04</p>
<p>Name of person filling out report  Todd Blake</p>	

FORM 104 (2006)

## Anytown Fire Department Employee Accident Report

Date: March 15, 2004	Date of Accident: March 15, 2004 Time of Accident: 0335 hrs
Accident Classification: X Injury <input type="checkbox"/> Illness <input type="checkbox"/> Fatality	Incident/Accident Location: 810 N. Adams Drive
Employee Name: Smith, Tim	Incident Number: 04-009653
Employee Assignment Location: Shift: <input type="checkbox"/> A <input type="checkbox"/> B   X C	Employee Rank/Classification: Driver Operator
Employee Age: 43 Gender: <input type="checkbox"/> Female   X Male	Type of Injury: Sprain of right ankle
Weather at Time of Accident: Clear	Temperature at Time of Accident: 48°
Scene Conditions at Time of Accident: Dark	
Incident Commander: Battalion Chief McCardle	Shift Commander: Battalion Chief McCardle
Safety Officer: Lt. William Graham	EMS Unit(s): PA 103
Motorized Equipment Involved in Accident: 1995 Engine (E-1)	
Personal Protective Equipment: All personnel protective equipment was worn as required.	
<p>Narrative 1. How did the accident occur?</p> <p>E-1 responded to a structure fire at 810 N. Adams. After arrival the IC directed Smith to take E-1 back to a hydrant and lay a double forward supply line to E-3. Smith stated that he had stepped up on the tailboard to pull the donut off of the hosebed when his right foot slipped off of a small step on the right side of the tailboard and the injury occurred. He was evaluated at the ER and sent home for four days.</p>	
<p>Narrative 2. Why did the accident occur? Right foot slipped off of small step located on tailboard of the engine. The step is very small and it is difficult to keep footing when wearing fire boots.</p>	

Narrative 3. What could be done to reduce exposure risk for future accidents? Increase the size of the step.	
Name of Witnesses: F.F. Bloom	
Signature of employee: <i>Tim Smith</i> Date: March 15, 2004	Signature of Employee Supervisor: <i>Joseph Dragin, Captain</i> Date: March 15, 2004
Name of person filling out report Capt. Dragin	

FORM 104 (2006)

**Anytown Fire Department  
15401 Redline Avenue  
Anytown, USA**

## Memo

Date:

To:

From:

Subject:

---

**Fire and Emergency Services Company Officer**  
**Lesson 25 — Analyses, Evaluations, and Statistics**

## **Assignment Sheet Answers**

### **Assignment Sheet 25-1**

1. Analysis is the process of methodically examining the various parts of an item, project, or incident.
2. Analysis is used to determine how the item, or project works or how an incident occurred or was controlled.
3. *Answers should include the following, in any order:*
  - Cost/Benefit Analysis – Is based upon the relationship between the effort (cost) and the result (benefit)
  - Process Analysis – Involves looking at each step in the process and determining the best way to do accomplish it
  - Policy Analysis – Is utilized when current policies are analyzed for effectiveness and enforcement
  - Program Analysis – Is used to determine the most efficient ways to provide a program or service by looking at each program component
  - Needs Analysis – Is conducted to determine the types of services that an organization is currently delivering and compare them to the services that the community desires
  - Risk Analysis – Determines the likelihood of an event occurring. The risk is defined in terms of type, location, frequency, and severity.
4.
  - a. Determine each of the components that compose the larger item, program, or process.
  - b. Follow a systematic process each time an analysis is made, using the same steps so that they become familiar.
  - c. Remain objective – do not come to conclusions before all of the facts are known.
  - d. Identify patterns – find relationships between components of program.
  - e. Seek advice – discuss the analysis with others.
  - f. Determine alternate viewpoints from those who will be affected by the program.
  - g. Multiple approaches – develop multiple approaches to the problem.

## Activity

**Anytown Fire Department  
15401 Redline Avenue  
Anytown, USA**

## Memo

Date: Today  
To: Battalion Chief McCardle  
From: The Student  
Subject: Analysis of Firefighter Injuries During Hose Deployment

---

The fire department operations division has experienced three lost time work injuries related to the deployment of fire hose from the rear step of the fire apparatus. The incidents are as follows:

<b>Incident Number</b>	<b>Date of Accident</b>	<b>Type of Apparatus</b>
04-009653	03/15/04	1995 Engine (E-1)
04-026985	07/07/04	1996 Engine (E-7)
05-032462	05/25/05	1995 Engine (E-1)

Each of the accidents resulted from falls suffered by firefighters using the foot step to allow them to reach the hose bed to deploy the hose. The steps are small and do not fit the size or shape of the fire boot that our department has issued.

The engines involved in these injuries have high hose beds that often require firefighters to use the steps. Narrow steps were utilized to accommodate the fire department's specification for oversized rear compartment openings. This restricts the amount of the amount of space remaining that would allow the attachment of larger steps. Engine 1 and Engine 7 are the only fire apparatus in the department that are configured in this manner.

Replacement of the steps cannot be done because of the size of the compartment door. Other locations for the steps to be mounted were considered, but would not provide improved or safer access to the hose bed.

Alternative Solutions:

- The application of a non-skid surface to the steps. This method would require continued reapplication on a regular basis to ensure that the surface remains non-skid.
- The mounting of “kick-down” steps to replace the original steps. These steps would be large enough to provide footing for the occasional need to reach the hose bed. This method is more expensive and would require the firefighters to position the steps in a configuration that does not interfere with the use of the compartment doors.
- Restrict the use of the small steps. Establish, by company policy, a restriction on the use of the small steps for accessing the hose bed. This would solve the safety problem associated with the steps but may lead to other injuries because of the height of the hose bed.

**Recommendation:**

The safest and best solution to this problem is the mounting of larger “kick-down” steps. These steps would be a permanent “fix” not requiring periodic reapplication of materials to the existing small steps or modification to the compartment doors to accommodate larger stationary steps. Costs associated with the implementation of this solution include the “kick-down” steps and the labor required to satisfactorily mount them on the engine.

An interim measure prior to the installation of the new steps would be the application of a non-skid surface on the small steps. Additionally, procedures for using the smaller steps should be addressed with the Engine 1 and Engine 7 personnel.