



BUREAU OF FIRE PROTECTION

VOLUME 3

for **Fire Safety
Young Adults**



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Young Adults**

Standardized Public Fire Education Manual



BUREAU OF FIRE PROTECTION

Volume 3: Fire Safety for Young Adults
Standardized Public Fire Education Manual

The BFP Standardized Public Fire Education Manual will serve as a reference guideline in conducting fire safety education lectures and seminars in the community.

Module 5: Basic Leadership Training through Fire Safety

This module will be composed of fire safety lectures and seminars for tertiary school students incorporated during their NSTP and ROTC classes and even other activities.

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**Standardized
Public Fire
Education
Manual**

**Volume 3:
Fire Safety for Young Adults**

Preface

Volume Overview

Young adults have a great deal of issues on their plates nowadays. The economic environment has been tough through the years, topping education and health care costs above all that has made adulting immensely difficult. With the contemporary aspects of mental health issues, digital divide, social justice, and inequality presented as the challenges, it is also indubitable that young people are more informed, connected, and empowered more than ever. These characteristics of young adults are determined as the best factors to be honed to create future leaders of this country.

Thus, the main goal of all leadership programs is to empower the leadership skill and capacity to excel, both personally and professionally, in their respective roles as an individual and a constituent of an organization. As such, this Basic Leadership Training, with the core competencies founded on fire safety, duly incorporated with the Basic fire safety and emergency medical skills , will not only provide another opportunity for young individuals to discover their leadership potentials and capabilities bound for the very purpose of being a part of the advocacy on fire safety awareness, rather provide an avenue through the embodied outline of interactive lessons with their corresponding learning objectives, categorized into subjects, with a resolute core value system. In essence, the young adults will be given a representation of the “real-world” challenges in need of their skills, courage to take risks, make decisions under pressure, and learn from the outcomes through this program.

Volume Objective

In this volume, the objectives are the following:

1. Discuss the basic principles behind the origin, development, and spread of fire;
2. Analyze the importance of safety and preparedness measures;
3. Identify the methods of extinguishment through common household materials suited for fire suppression;
4. Discuss the importance of prior planning for the application of the recommended firefighting techniques during fire emergencies;
5. Explain the importance of fire escape plan at homes;
6. Encourage responsible safety practices at home ; and
7. Demonstrate interest on fire safety and emergency response as dedicated and enthusiastic group of young individuals.

Audience and Specific Use

This volume seeks to train young adults in college institutions, out-of-school youths, students under Alternative Learning System, Sangguniang Kabataan officials, and members of youth organizations.

Acknowledgments

**Volume 3: Fire Safety for Young Adults
Standardized Public Fire Education Manual**

Module 5: Basic Leadership Training through Fire Safety

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Table of Contents

	Page
PREFACE	v
Overview	v
Objectives	v
Target Audience and Specific Use	vi
Acknowledgment	vii
Table of Contents	ix
<hr/>	
PART 1 FUNDAMENTAL COURSE	5
Chapter 1 Qualities of a Potential Leader	21
Chapter 2 Dynamics - The Chemical History of a Flame	31
Chapter 3 Fire - Classified	61
Chapter 4 SafeHome Escape Quest	99
Chapter 5 Basics of Bleeding Control	129
Chapter 6 Fire Response Basics	169
<hr/>	
PART 2 ADVANCED COURSE	211
Chapter 1 Teamwork: Foundation of Good Leadership	227
Chapter 2 Youth Fire Emergency Response Team	237
Chapter 3 Bucket Brigade: Water Warriors Chain	267
Chapter 4 Hose Management and Employment	293
Chapter 5 Rope Hero Essentials	325
Chapter 6 BlazeMobile Command: Youth Drivers Training	345
Chapter 7 HazMat Awareness during Fire Incident	371
Chapter 8 Emergency Evacuations and Social Herd Behavior	399
<hr/>	
PART 3 INTRODUCTION TO FIRE SAFETY	429
Chapter 1 Fire Science, Classes, Common Causes	433

ANNEXES & REFERENCES POWERPOINT PRESENTATION & VISUAL AIDS

**included in every chapter*

**included in every chapter*

MODULE 5

Basic Leadership Training through Fire Safety

2 MODULE 5 Basic Leadership Training through Fire Safety

MODULE 5 OUTLINE

Basic Leadership Training through Fire Safety

Scope/ Overview

This module provides young adults with fire safety lectures and skills programs aimed at developing their leadership potential and activating their fire safety commitment. It is designed to train young adults who are college students, out-of-school youths, students under the Alternative Learning System, Sangguniang Kabataan officials, and members of youth organizations.

This module caters to two (2) courses, namely: Fundamental Course and Advanced Course. Fundamental Course is a 2-day course that carries basic lectures on fire safety and provides lessons on personal accountability, social responsibility, preparedness, and proper communication. Advanced Course, on the other hand, is a 3-day skills training focused mainly on teamwork, critical thinking, resource management, and problem-solving.

Delivery Methodology

This module targets a maximum of 30 young adult participants who will complete the two (2) courses from start to finish. Classroom instruction is the main tool of this module in delivering the basic fire safety subjects while encouraging interaction from the participants. While the courses aim at individual retention of the lessons, the group will be divided into five (5) to challenge and motivate individuals' unique skills in small groups.

Provision of case studies of actual fire incidents, local and abroad, form part of the lectures to attract the attention of the young participants who still appreciate storytelling. These stories do not give a happy ending but they will surely capture their desire to not repeat the mistakes of others.

Practical demonstrations, drills, and exercises with the use of proper protective equipment is also required to assess and demonstrate learning ability and execution of skills and techniques. Likewise, tabletop exercises are an important team-building activity to enhance the teamwork and decision-making abilities of the participants.

Learning Objectives

At the end of the activity, the audience will be able to:

1. Cite the qualities that make up a caring personality;

2. Explain the basic principles behind the origin of fire;
3. Categorize fires according to its classes and causes;
4. Know the importance of having a home fire escape plan;
5. Recognize the signs of life-threatening bleeding and execute proper procedure using the ABC of bleeding control method;
6. Identify the fire extinguishers and differentiate their use;
7. Demonstrate how to properly use a fire extinguisher using TPASS method;
8. Enumerate the different values that define teamwork;
9. Define specific roles and responsibilities within the FireSquad Youth Heroes;
10. Comprehend the types of fires that can be controlled using Water Bucket Brigade;
11. Identify the different types of hoses in use during fire response and its maintenance;
12. Develop proficiency in basic rope rescue techniques;
13. Identify and explain the key components of a firetruck;
14. Recognize hazardous materials labels, symbols, and placards;
15. Formulate proper evacuation procedures for a variety of campus emergencies

Learning Materials Needed

1. Fire Box
2. Fire Extinguishers
3. Fire hose cabinets
4. Fire blankets
5. Visual aids
6. Fire risk assessment templates

Preparatory Activity Prior to Delivery of the Module Subjects

The requesting party may forward a letter addressed to the City/Municipal Fire Marshal of the local fire station, containing, among others, the proposed venue and the dates of the training. The BFP, through the C/MFM, shall respond to accommodate such request subject to the availability of the lecturer. The requesting party shall provide the materials as needed, for the conduct of the training.

Dedication

This module was created as part of the Standardized Public Fire Education Manual (SPFE) of the Bureau of Fire Protection which hopes to reach out to young adults and offer them a program that helps them enhance their leadership potential, discover their leadership styles, and activate their self-awareness – all while learning the various contexts attached to fire, such as its causes and origin and how to be safe around it.

The module seeks to train young adults who may be college students, out-of-school youths, students under the Alternative Learning System, Sangguniang Kabataan officials, and members of youth organizations.

Part 1

Basic Leadership Training through Fire Safety

FUNDAMENTAL COURSE

Fundamental Course

Course Outline

I. Course Rationale

“Leaders are not born; they are made.” There is a strong reason why this maxim exists, and that is to help us all realize that leadership is a skill to be discovered and developed, and not a birthright to be claimed easily.

There are various leadership trainings out there that young individuals may grab and add to their collection of experiences, but these are just not enough to cater to all the minds that are hungry for learning and wisdom. That is why, the Bureau of Fire Protection has come up with leadership training in the context of fire safety – not only to provide yet another opportunity for young individuals to discover their leadership potential and capabilities but also to emphasize that there is more to learn about fire than mere prevention and suppression.

The end goal of the Basic Leadership Training through Fire Safety – Fundamental Course is to offer a basic range of knowledge and information – from activating the desire to be involved to the basic principles of proactive transformation. With young adults as the target participants, the Bureau of Fire Protection crafted this Course not only to plant the seed of leadership among potential leaders but also to enhance the skills of those who are on their way to holding key responsibilities in their respective organizations and communities.

Basic Leadership Training through Fire Safety – Fundamental Course intends to remain in the circle of the training world for as long as there are young adults who need some reinforcement in bringing out the leaders in them.

II. Core Values

Core Values are an essential part – the drop-anchor – of every leadership training design to which the measure of success may be attributed. Hence, the Fundamental Course of the Basic Leadership Training through Fire Safety (BLTFS) of the Bureau of Fire Protection has enshrined Social Responsibility, Personal Accountability, Resilience, Critical Thinking, and Volunteerism as its core values.

Since all subjects included in this fundamental course are founded on the above-mentioned core values, the training hope to benefit the young adults as the target participants of this leadership training.

III. Course Description

A. Program of Instructions

Basic Leadership Training through Fire Safety (BLTFS) – Fundamental Course is a two-day course that covers basic information and knowledge about fire, preceded by basic principles of individual commitment to community and fire safety.

SUBJECT	DESCRIPTION	NUMBER OF HOURS
Qualities of a Potential Leader	Discusses the top qualities of a caring personality every helping individual must possess	30 minutes
Dynamics – The Chemical History of a Flame	Provide basic principles behind the origin of fire while instilling social responsibility of each individual	1.5 – 2 hours
Fire – Classified	Categorize fire according to its classes and causes. Young adults will learn their personal accountability in fire safety and fire prevention.	1 – 1.5 hours
SafeHome Escape Quest	Establish a routine of conducting drills at home where communication and teamwork will be learned.	2 hours
Basics of Bleeding Control	Execute the ABC of bleeding control method while exercising preparedness and volunteerism	1 – 1 hour 45 minutes
Fire Response Basics	Demonstrate the proper use of fire extinguishers and other firefighting equipment. Here, the young individuals will exercise critical thinking and preparedness, and resilience	3 – 3.5 hours

B. Method of Execution

Since this is leadership training on its fundamental level, most of the methodologies included in this module are learner-centered in which the participants get to perform tasks that inspire them to awaken their leadership capabilities.

Also, all activities included in this module are anchored to the core values that the BFP would like to instill among the participants. They shall be closely supervised to ensure that all tasks and activities are performed with caution and maximum safety.

C. Course Requirements

Materials	BFP	Requesting Party
a. Primary Tools		
✓ Multimedia Projector		1 pc
✓ Powerpoint Presentation	1 pc	
✓ Video Presentation	1 pc	
✓ Hand-outs	1 pc	1pc
✓ Visual Examples		
· Candle, matchsticks		1 pc
· Firebox	1 pc	
· Crumpled scratch paper		1 pc
· Spray bottle, petroleum jelly		1 pc
✓ Training Materials for return demo		
· Bandages		30 pcs
· Training CAT tourniquets		30 pcs
· Hemorrhage control trainer	1 pc	
✓ Demonstration materials		
· Fire pit		1 pc
· Fire extinguishers	1 pc	
· Fire blanket	1 pc	
· Smoke alarms	1 pc	
· Floor plans/maps		1 pc
· Stopwatch/timer		1 pc
· Fire safety props		
✓ Visual Examples		
· Improvised firefighting tools	1 pc	
· Spot map or plan showing the building layout		1 pc
b. Secondary Tools		
✓ Flip cards	1 pc	
✓ Fumigating machine/ smoke machine	1 pc	
✓ Others		
· Interactive apps	1 pc	
· Virtual reality (VR) headsets		1 pc
· Online resources	1 pc	

1. Materials

The provision of the following training materials shall be subject to the limitations of the BFP. Other requirement shall be borne by the requesting party.

For guidance, the necessity to provide all the requirements listed hereunder are specifically instructed in each subjects' Lecture Guide, inside the Facilitator's Note box.

2. The Training Team

The training team may be composed of, but not limited to, the following BFP personnel for the duration of the leadership training:

One (1)	Team Leader
Two (2)	Lecturer/Facilitator
One (1)	Photographer/Secretariat

The BFP may opt to deploy more than the aforementioned figures, if necessary.

3. Supplies

The following requirement shall be provided by the requesting party for the consumption of the training team and the participants.

- Meals and Snacks for two (2) days
- Identification Cards for printing and distribution (format and specs shall be provided by the BFP)
- Fuel, if necessary
- Sound System
- Projector
- Contingency fund

Other supplies requirement shall be mentioned by the City/Municipal Fire Marshal, upon approval of the request. The BFP shall exercise reasonable care in providing unnecessary training requirements to the requesting party.

4. Venue

The requesting party shall provide a venue suitable for this training and can accommodate the 30 participants and the BFP training team. Strictly, the venue shall be within the AOR of the requested BFP training team.

5. Certificates and Badges

Participants who successfully completed this two-day course shall receive a Certificate of Completion like the one shown below. The training team shall use the heading of their unit/station for identity purposes. Likewise, the City/Municipal Fire Marshal shall be authorized to sign every certificate produced in this training.



Fig. 1 Certificate of Completion

Upon registration or prior the start of the training, each participant shall be provided by an identification card which shall be worn by the trainee at the duration of the training. By the end of the training, each ID card shall be stamped with the badge “Fundamental Course” as additional proof of completion.



Fig. 2 ID Card of Participants

A stamp shall be procured by the City/Municipal Fire Marshal bearing the letters “BLTFS – FC” which shall be imprinted to the empty box (Fundamental) in the ID cards of the participants during the closing program.



Fig. 3 Stamp for Fundamental Course

Aside from the abovementioned proof of completion, a badge shall also be given to each completers. The badge is a symbol of pride – for accomplishing the course, and identification – for committing to cooperate in the fire safety and prevention programs of the BFP. This badge shall be funded for reproduction by the Bureau and shall form part of the training requirements to be provided by the BFP.



Fig. 4 Badge for Fundamental Course

6. Commitment Board

At the Expectation Setting, participants will post in the Commitment board printed in tarpaulin provided by the training team their expectations in the training. These expectations are provided (See Annex 2) and written in a colored paper (cartolina paper).

During the Closing Program, participants will sign the Commitment Board (See Annex 3), and after that, the ID cards provided to them will be stamped.

7. Coordinating Instructions

To avail of the Basic Leadership Training through Fire Safety – Fundamental Course, the requesting party may forward a letter addressed to the City/Municipal Fire Marshal in their locality containing, among others, the proposed venue and dates of the training.

The BFP, through the City/Municipal Fire Marshal shall respond to accommodate such request, subject to the availability of the lecturer on the given schedule. Otherwise, the BFP and the requesting party may agree on a different schedule to accommodate the request.

The participation of the BFP shall be limited only to the training team and other equipment inherently available with the BFP. Other training requirements, such as food, venue, and materials needed shall be borne by the requesting party.

8. Participants Requirements

Interested participants shall acquire a recommendation from the Requesting Party for inclusion to the list.

Upon registration, the participant shall provide the training team ID photo (1 pc, size 1 x 1 in white background).

Dress Code: Comfortable training clothes.

IV. The Training Subjects Outlines and Lecture Guides

See succeeding pages

V. Annexes and Training References

Annex 1 – Program of Activities

Annex 2 – List of Expectations from the participants

Annex 3 – Commitment Board

ANNEX 1 – PROGRAM OF ACTIVITIES

front page

BUREAU OF FIRE PROTECTION
_____ Fire Station

Basic Leadership Training Through Fire Safety



TRAINING DIARY

Name of Participant: _____

inner page 1

Training Program

Fundamental Course, Day 1

- I. Registration
- II. Opening Program
 - National Anthem
 - Opening Remarks Requesting Party
 - Overview of the Course Team Leader, BFP
 - and House Rules
 - Expectation Setting
- III. Lesson Proper
 - Qualities of a Potential Leader
 - Dynamics – The Chemical History of a Flame
 - LUNCH BREAK
 - Fire – Classified
 - SafeHome Escape Quest
- IV. Daily Course Evaluation

Fundamental Course, Day 2

- I. Prayer
- II. Recap of Day 1
- III. Lesson Proper
 - Basics of Bleeding Control
 - Fire Response Basics
 - LUNCH BREAK
 - Fire Response Basics (continued)
 - Culminating Activity
- IV. Closing Program
 - Reflection from the participants (call at least 3)
 - Awarding of Certificates and pinning of badges
 - Commitment Board signing and stamp imprinting
 - Closing Remarks City/Municipal Fire Marshal
 - Photo ops

inner page 2

Training Diary

inner page 3

MY NEW BEST BUDDIES

Name _____

Contact Number

[back page](#)

THE LEADERSHIP TRAINEE'S PRAYER

Dear God,
Creator of this beautiful Universe,
Giver of life, wisdom, and strength,
Provider of miracles big and small...

I come before You today, emptying my cup of knowledge,
Leaving only the songs of praises that You alone are worthy of.

As I step into this Leadership Training,
I lift up to You my worries and cares,
Knowing that You alone
can pour out wisdom in this temple I call body.

As I entrust myself to the expertise of the trainers in this course,
I do so with total surrender, knowing that it is You who has sent them here
today.

Lord, there is nothing else I would rather have
Than Your heavenly presence to be with me
throughout this course and for the rest of my life.

Guide my mind so that it wanders not into the realms of resistance and
disengagement.

Guard my body so that it may yield only to the teachings of today's training.
Give me strength and courage so that I may be able to fulfill your purpose for
me.
Today and for always.

In the mighty name of Jesus,
I thank You for this life you have so fearfully and wonderfully made.
Amen.

ANNEX 2 – LIST OF EXPECTATIONS FROM THE PARTICIPANTS

The following list comprise the possible expectations from the participants which can be achievable by the training team.

- ▶ Learn about fire safety
- ▶ Become a better leader in my community
- ▶ Teach other
- ▶ Learn how to fight fire
- ▶ Learn how fire starts
- ▶ Learn how to use everyday items in putting out fire
- ▶ Learn how to use fire extinguisher
- ▶ Become a better person
- ▶ To assist firefighters during fire operation
- ▶ To know what to do when fire occurs in my house/community
- ▶ To apply my knowledge in my workplace
- ▶ To become a firefighter
- ▶ To learn rescue techniques
- ▶ To save a life
- ▶ To save myself from fire dangers

The list continues, provided that the expectation is workable/achievable. For example, “To become a firefighter” – explain to the young adult that this training will not make them the priority during recruitment in the Bureau but only as a credential.

This list shall be printed in a cartolina paper cut-outs and to be presented to the participants for individual selection during the Expectation Setting to be pasted in the Commitment Board.

The training team must complete 30 expectations, either individually distinct from the other or duplicated.

ANNEX 3 – COMMITMENT BOARD



Chapter 1

Basic Leadership Training through Fire Safety

Qualities of a Potential Leader



PHOTOGRAPHY BY: F01 Kevin M Dalut

In this Chapter 1...

Goal

For the lecturer to guide the participants in awakening the spirit of leadership in themselves by giving them a picture of what a potential leader is.

Objectives

By the end of the session, participants should be able to:

1. Cite the qualities that make up a potential leader;
2. Check upon themselves whether or not they possess these qualities; and
3. Apply these qualities in their daily encounters, especially during emergencies and fire incidents.

Total Time of Delivery:

30 minutes

Subject Aids Needed:

1. Multimedia Projector
 2. Powerpoint Presentation with illustrations/pictures
-

Subject Overview

Purpose: This subject was formulated to persuade the participants to appreciate their important role in influencing the perception of their communities towards fire safety.

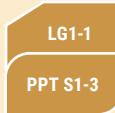
General Guidance: Lecturers of this module must, at all times, adhere to the following guidelines/instructions:

1. Grooming and Appearance

- ✓ 1.a Lecturers must always be in their proper uniform, complete with headgear (if necessary) and prescribed paraphernalia.
- ✓ 1.b Lecturers must always sport a neat appearance, including proper haircuts and no visible stubbles (for males) and minimal make-up with slick hair-do (with prescribed hair-bun for females).
- ✓ 1.c Lecturers must aspire to look dignified and honorable, especially in their manner of speaking, walking, and dealing/communicating with their audience.

Cheat Sheet

Subject Outline

Audio/Visual Aids	Outline	Notes
	1. INTRODUCTION Greet participants and dignitaries present. Introduce yourself and your team.	A short program may be initiated, including Nationalism and an opening invocation.
 PPT S1-3	2. MOTIVATION Ask the participants: What do you think are the qualities of a leader? What past situations have you been involved in that could speak of your concern for others or your community? How much do you care about fire safety?	Call on participants – at least five – to respond. Allow participants to relate personal encounters. Ask participants about how they observe fire safety at home and in their community
LG1-1 PPT S4-10,11-17	3. LESSON PROPER Read short story found in the module. Present qualities of a potential leader as cited in the module.	Have participants relate qualities to situations that need such response, particularly during a fire incident
PPT S18	4. SUMMARY OF THE LESSON Ask a recap of the lessons learned by the participants	
PPT S19	5. CLOSING EVALUATION Review objectives End subjects by acknowledging active participation and support from the receiving entity End subjects by acknowledging active participation and support from the receiving entity	Gather insights from the participants

-Nothing Follows-

Cont.

- ✓ 2.a Lecturers must arrive at least 30 minutes earlier at the venue to allow them ample time to check on the readiness of equipment and materials to be used during the lecture.
- ✓ 2.b Lecturers must begin their lectures with a short introductory program that includes invocation, act of nationalism, and words of welcome/inspiration from school administrators or the BFP officers present.

2. During Lecture Proper

- ✓ 3.a Lecturers must speak in a clear, well-modulated voice so as not to bore or disengage their audience.
- ✓ 3.b Lecturers may infuse humor in the delivery of their lectures, provided that they refrain from using profane language (e.g. cursing, highly sexualized or green jokes) as a tool to maintain attention from their audience.
- ✓ 3.c Lecturers may choose to deliver their lecture in English, Filipino, or the local dialect, provided that they can do so in a manner that is audible and understandable to the audience.
- ✓ 3.d Lecturers must strictly adhere to the topics and materials prescribed in this module during the delivery of their lecture unless there is a justifiable need to improvise or provide alternatives.
- ✓ 3.f As much as possible, lecturers must always invoke active participation from the participants by allowing them to recite, ask questions, or return demonstrations.
- ✓ 3.g Lecturers must aspire to finish their lectures within the time allowed without compromising the quality and content of their lectures.

3. After Lecture Proper

- ✓ 4.a Lecturers must ensure learning and retention among participants by administering an evaluative tool after the discussion and lecture proper.
- ✓ 4.b Lecturers must see to it that the venue is spick and span before the culmination of lectures by advising participants to observe CLAY Go (Clean as you go).

Talking point:

The Potential Leader in You [1-1]

It was seven o'clock in the evening. Gabriel, a first-year college student, was anxiously waiting for a tricycle outside the university. His stomach is rumbling out of hunger and he just could not wait to get home for dinner. An elderly professor was standing next to him, waiting for a ride, too. A trike pulled up and without hesitation, he beckoned for the professor to go ahead and take the trike. The professor thanked Gabriel and bid good night.

Soon, he got a ride, as well, and as soon as he reached the block where he lived, he could see bright flames coming from a familiar direction. His friend, Mark's house was on fire! As quick as he could, he reached for his fare and gave it to the driver and on his cell phone he dialed the fire station's hotline to report what he saw. It was a good thing he took note of the hotline during the fire safety lecture held in their university. After knowing help was on the way, he sprinted to the burning house to see how else he could help.

Now, their place was quite populated and houses were built close to each other with firewalls as the only means of partition. As he got nearer, Gabriel saw that some young men in the neighborhood were already doing a bucket relay while others were controlling the crowd from obstructing the way. Still, some teenagers could not be stopped from taking out their cellphones and taking videos of the fire in progress, but somehow, he was comforted and even more so when he saw that it was not Mark's house that was burning but the abandoned house beside theirs. However, he was worried that his friend's house might catch fire as it stood only a couple of meters away. He called out to Mark and saw that the latter was rushing about, helping his father, Mang Caloy, who was restless, too. They were taking everything they could out of the house in case it caught fire, while Aling Maura, Mark's mother was carrying his sister, five-year old Judith, who was horrified of what was happening.

Gabriel stormed through the back of the house where he took a bucket and filled it with water. Then, he ran to splash it on the outside wall of the house close to the burning one. He ran back and forth, filling up the bucket with water while the fire was getting bigger on the other house.

A few minutes after Gabriel's call to the fire station, a fire truck arrived and took charge of the progressing fire. The Community Fire Auxiliary Group or CFAG, composed of the barangay officials and headed by the barangay chairman, were clearing everything and everyone out of the fire scene while the firefighters were throwing water at the burning house, as well as Mark's house. At least, 20 minutes later, the ground commander pronounced "fire out".

After making sure that everything was overhauled, the fire team was preparing to leave. Mang Caloy and Aling Maura thanked them profusely for arriving on time to save their house from getting burned down. The couple, then, stood a few meters away and looked at their house and breathed a sigh of relief, knowing that they had only to worry about putting back their belongings into the house. They thanked Gabriel and their neighbors, as well, for helping them safe through the fire.

Gabriel went home with joy and gratitude in his heart, knowing that he was able to help his friend and neighbors and apply what he just learned through the Leadership Training conducted in their school by the Bureau of Fire Protection! That night, a dream started within him. He wanted to become a fire fighter, too!

Just like Gabriel, you can make a difference, too. You can be of help to others, too. You just have to awaken the leader in you and learn the safe and proper way to give help whenever necessary.

In this course, we have listed down the top qualities of a leader for you to check upon yourself so that next time something similar happens, you will know what to do just like Gabriel and the neighbors did.

1. Social Responsibility.

Facilitator's Note [1/6]

The Lecturer may cite a fire-related situation and have the participants share how they can demonstrate social responsibility in their respective communities.

One of the most important qualities of a potential leader is being able to work alongside other people and/or organizations for the benefit of their community. In the context of fire safety, it may also mean the ability to respect others not just as individuals but as people cloaked with their respective capacities to perform a particular function, such as firefighters – we will call it social responsibility. The challenge now lies in the capacity of the leadership trainee to influence how their community sees the firefighters as partners in protecting their community from destructive fires.

2. Personal Accountability.

Facilitator's Note [2/6]

The Lecturer may cite a fire-related situation and have the participants share how they can show personal accountability in their respective communities.

Personal accountability is usually defined as one's capacity to own up to their actions, especially when one commits a mistake. In the context of the given story, personal accountability, as a quality of a potential leader, may be defined as the ability to take action and own up to the social obligation of helping others as a result of a working conscience. In the given story, Gabriel knew the fire station's hotline and without being told to do so, he dialed it because he held himself accountable for the welfare of his neighbor, more so his friend.

3. Resilience.

Facilitator's Note [3/6]

The Lecturer may cite a fire-related situation and have the participants share how they can show resilience when faced with a similar situation in their community.

Once confronted with emergencies, we tend to lose our balance and become unsteady, or, worse, we tend to lose interest and withdraw. Potential leaders are always resilient; they always find ways to help no matter how menial the task is. In other words, they are unstoppable in helping others even when they are aware of the danger attached to it.

Are you resilient in helping others in your community, too? That is a good sign that you are on your way to becoming a good leader but, please, remember to keep safety first at all times.

4. Critical thinking.

Potential leaders are reliable at all times, especially during emergencies because they are quick enough to decide which is best to do. In the given story, Gabriel knew that he had to do something in order to save his friend's house from catching fire, and so with a bucket as his only weapon, he ran back and forth to cool down Mark's house especially the side near the burning house. That, right there, is a strong display of critical thinking.

Facilitator's Note [4/6]

The Lecturer may cite a fire-related situation and/or have the participants share how they can show their critical thinking ability.

5. Volunteerism.

Potential leaders have such an unreserved spontaneity to help others, especially during emergency situations without waiting to get paid or even appreciated. In other words, volunteerism is always part of their shortlist without thinking of perks and benefits.

You might have noticed how Gabriel was happy when he went home, knowing that he was able to help his neighbors and his friend. That is an example of volunteerism.

Facilitator's Note [5/6]

The Lecturer may cite a fire-related situation and/or have the participants share about how they can show volunteerism in their community.

Your Take-Away

Now that you have learned the top qualities of a potential leader who cares about their community and the people who live in it, ask yourself again: do I have what it takes to become a good leader? Do I have these qualities in me or do I have, yet, to master them so that I may become the person that my community deserves to have?

Facilitator's Note [6/6]

The lecturer shall process the story given and relate it to the given qualities of a potential leader.

Movimiento Esvida

"Movement is Life!"

Chapter 1

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

QUALITIES OF A POTENTIAL LEADER

- At the end of the lesson, the participants should be able to:
1. Cite the qualities that make up a potential leader;
 2. Check upon themselves whether or not they possess these qualities; and
 3. Apply these qualities in their daily encounters, especially during emergencies and fire incidents.

Goal:

For the lecturer to guide the participants in awakening the spirit of leadership in themselves by giving them a picture of what a potential leader is.

2

Objectives:

THE POTENTIAL LEADER IN YOU

It was seven o'clock in the evening. Gabriel, a first-year college student, was anxiously waiting for a tricycle outside the university. His stomach is rumbling out of hunger and he just could not wait to get home for dinner. An elderly professor was standing next to him, waiting for a ride, too. A trike pulled up and without hesitation, he beckoned for the professor to go ahead and take the trike. The professor thanked Gabriel and bid good night.

Soon, he got a ride, as well, and as soon as he reached the block where he lived, he could see bright flames coming from a familiar direction. His friend, Mark's house was on fire! As quick as he could, he reached for his fare and gave it to the driver and on his cell phone he dialed the fire station's hotline to report what he saw. It was a good thing he took note of the hotline during the fire safety lecture held in their university. After knowing help was on the way, he sprinted to the burning house to see how else he could help.

3

4

Now, their place was quite populated and houses were built close to each other with firewalls as the only means of partition. As he got nearer, Gabriel saw that some young men in the neighborhood were already doing a bucket-relay while others were controlling the crowd from obstructing the way. Still, some teenagers could not be stopped from taking out their cellphones and take videos of the fire on progress, but somehow, he was comforted and even more so when he saw that it was not Mark's house that was burning but the abandoned house beside theirs. However, he was worried that his friend's house might catch the fire as it stood only a couple of meters away. He called out to Mark and saw that the latter was rushing about, helping his father, Mang Caloy, who was restless, too. They were taking everything they could out of the house in case it caught fire, while Ailing Maura, Mark's mother was carrying his sister, five-year old Judith, who was horrified of what was happening.

5

6

Gabriel stormed through the back of the house where he took a bucket and filled it with water. Then, he ran to splash it on the outside wall of the house close to the burning one. He ran back and forth, filling up the bucket with water while the fire was getting bigger on the other house.

7

A few minutes after Gabriel's call to the fire station, a fire truck arrived and took charge of the progressing fire. The Community Fire Auxiliary Group or CFAG, composed of the barangay officials and headed by the barangay chairman, were clearing everything and everyone out of the fire scene while the fire fighters were throwing water at the burning house, as well as Mark's house. At least, 20 minutes later, the ground commander pronounced "fire out".

8

After making sure that everything was overhauled, the fire team was preparing to leave. Mang Caloy and Ailing Maura thanked them profusely for arriving on time to save their house from getting burned down. The couple, then, stood a few meters away and looked at their house and breathed a sign of relief, knowing that they had only to worry about putting back their belongings into the house. They thanked Gabriel and their neighbors, as well, for helping them safe through the fire.

9

Gabriel went home with joy and gratitude in his heart, knowing that he was able to help his friend and neighbors and apply what he just learned through the Leadership Training conducted in their school by the Bureau of Fire Protection! That night, a dream started within him. He wanted to become a fire fighter, too!

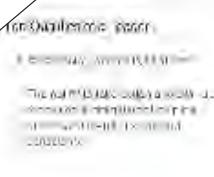
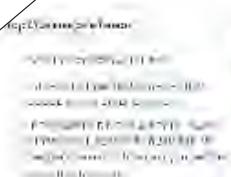
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Just like Gabriel, you can make a difference, too. You can be of help to others, too. You just have to awaken the leader in you and learn the safe and proper way to give help whenever necessary.

11

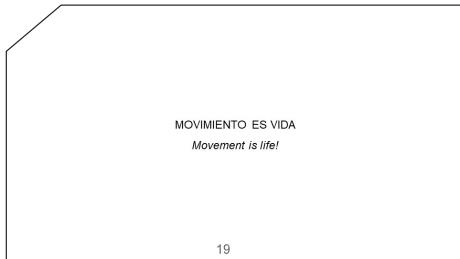
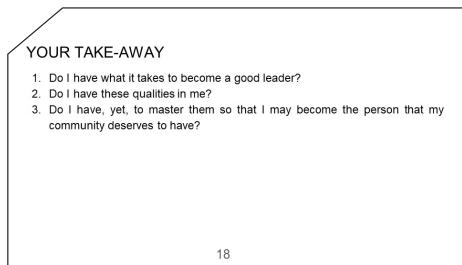
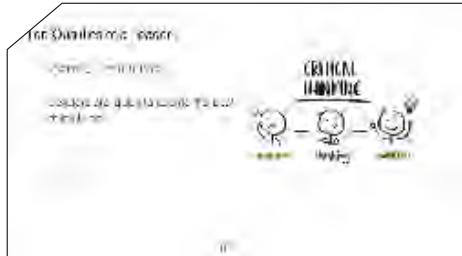
In this course, we have listed down the top qualities of a leader for you to check upon yourself so that next time something similar happens, you will know what to do just like Gabriel and the neighbors did.

12



It Starts With You

30 MODULE 5 Basic Leadership Training through Fire Safety



Chapter 2

Basic Leadership Training through Fire Safety

Dynamics – The Chemical History of a Flame



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 2...

Goal

For the audience to get a comprehensive understanding of basic concepts surrounding the creation and sustainment of a flame, allowing them to recognize conditions that could allow for sustained combustion and subsequent development and spread of fire.

Objectives

By the end of the session, participants should be able to:

1. Gain an appreciation of the importance of individual fire preparedness and social Responsibility in fire safety
2. To explain the basic principles behind the origin of fire
3. To Identify the four stages of fire development and contributing factors to its spread
4. To understand how heat transfer and fuel arrangement contribute to fire spread and intensity

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Visual Examples
 - i. A candle, matchsticks
 - ii. a "firebox" consisting of a Bunsen/ butane burner with a clear acrylic cover with a removable top (alternatively, you can use a glass jar)
 - iii. Piece of Crumpled Scratch Paper or other readily combustible materials
 - iv. Spray Bottle Full of Water, petroleum jelly

B. Alternative Tools

1. Flip Cards
2. Visual Examples
 - i. A candle, matchsticks
 - ii. "firebox" consisting of a Bunsen/butane burner with a clear acrylic cover and removable top (alternatively, you can use a glass jar)
 - iii. Piece of Crumpled Scratch Paper or other readily combustible materials
 - iv. Spray Bottle Full of Water, petroleum jelly

Total Time of Delivery:

1.5 – 2 Hours

Cheat Sheet

Subject Overview

Purpose: To allow participants to see in appreciable terms how the elements of fire come together to initiate and maintain combustion and how changes in the interaction of these elements produce differing results. This subject will also allow participants to see the critical interactions during the phases of development fires in real-time.

General Guidance: This subject includes demonstrations of the different elements that contribute to fire and how they interact. The lecturer needs to ensure safety when conducting the experiments. The lecturer should explain the interactions in the simplest possible terms using colloquial terms when applicable/ necessary to facilitate understanding. He should deliver this subject to catch the interest of the audience and encourage them to ask questions.

Things to Consider: This subject teaches the uses and potential dangers of fire; the lecturer should be mindful of commentary when delivering the subject since participants come from various backgrounds. Care should be taken when citing examples.

Subject Outline

Audio/ Visual Aids	Outline	Notes
1. PREPARATORY		
 ppt cover	1.1 Greet the participants and start by introducing your name and your teammates.	Again, greet participants warmly and introduce them to the first formal subject of the basic course.
 LG2-1  PPT S4-5	1.2 Engage the participants by using the lighter to create a flame, then ask the following questions: - What do you see? - Does anybody know what fire is? - What is it made of? - Is it useful? How? - Is it destructive? How?	The goal of this segment is to get the interest of our participants. <i>The following questions are not suggestions to choose one, but rather should all be asked in the presented manner.</i>
 PPT S2-3	2.2 Present subject objectives.	Refer to Goals and Subject Objectives

Cont...1

Audio/ Visual Aids	Outline	Notes
LG2-1	2. MOTIVATION 2.1 Start by providing trivia about how man first used fire and how they viewed it	Talk about how the perception of fire transformed from aid towards civilization – to how it is viewed now as a global public health problem.
LG2-1 PPT S6-14	 2.2 Talk about: How fire can be good How fire can be bad Relevance of Fire Emergencies Destructive Fires and Social Responsibility	Give the participants time to interact and give their answers. Entertain and mention all their answers until such time that one gives a key answer. Allow 2-3 responses.
LG2-2 PPT S15-19	3. LESSON PROPER 3.1 Start by talking about the fire in terms of its characteristics What is fire? <ul style="list-style-type: none">•Fire is Fast•Fire is Dark•Fire is Hot•Fire is Deadly	Describe fire in relatable terms and encourage participation by allowing participants to voice their views on each characteristic. The goal is to engage their logic.
LG2-3 PPT S20-21	 3.2 Proceed to the NFPA/RA 9514 definition of Fire	Ask participants to dry and define fire once more after listening to your discussion.
LG2-3 PPT S22-24	 3.3 The Candle and the Matchstick (Chemistry of Fire) Discuss the triangle of fire Fuel – can be anything that burns. Heat – the initial source of energy Oxygen – acts as an oxidizer and is in the air we breathe.	<i>Finally, proceed to the RA9514 definition of fire. Focus on the terms Burning heat, light, and combustion.</i> <i>Present the triangle of fire, briefly discussing each element. The lecturer may ask participants to observe their immediate surroundings to identify possible sources of these elements.</i>
PPT S25-26	Activity I - Elements	<i>Use the firebox as a tool to demonstrate by adding/ removing one element at a time.</i>

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
<p>LG2-4</p> <p>PPT S27</p>	<p>3.3 Chain Reaction (Fire Tetrahedron) Demonstrate and discuss the concept of fire chain reaction by showing the interactions between elements</p> <ul style="list-style-type: none">• Fire Point vs Flash Point	<p><i>The lecturer may explain that each type of fuel has its ignition/fire point.</i></p>
<p>PPT S28-31</p>	<p>3.3.1 A Closer Look at Combustion Present how fuel and oxygen are fused, creating heat and flame.</p>	<p><i>The lecturer can discuss this by asking the question. Then, discuss how the products of combustion are essentially a combination of the fuel and oxygen> hence, different fuels create different products of combustion.</i></p>
<p>PPT S28-33</p>	<p>Why do some fires produce black smoke? While others don't?</p>	
<p>LG2-5</p> <p>PPT S34-37</p>	<p>Activity II. - Fuels</p> <p>3.4 Spread Discuss how fire spreads and what its effects are on fire response</p> <ul style="list-style-type: none">• Conduction• Convection• Radiation	
<p>LG2-6</p> <p>PPT S38-45</p>	<p>3.5 From Incipient to Decay Demonstrate and discuss the phases of development of a fire</p> <ul style="list-style-type: none">• Incipient Phase• Growth Phase• Fully Developed• Decay	<p><i>The lecturer may use the provided AVP in real time to demonstrate the phases of fire development. Narrate events in real-time and discuss factors affecting each phase of growth.</i></p>
	<p>3.5.1 Do a quick recap of the previously discussed topic</p>	
	<p>3.6 Implications - Effects Discuss the potential impact of destructive fires:</p> <ul style="list-style-type: none">• Bodily Harm > Loss of Life• Loss of property > Decreased Productivity• The Emotional Impact	<p><i>These effects of fires should be emphasized to the audience by giving pictorial examples or relating examples. (allow participants to relate their thoughts on the effects of destructive fires.)</i></p>

Cont...2

Audio/ Visual Aids	Outline	Notes
	4. RECAPITULATION 4.1 Summarize the key points discussed: What is fire? Characteristics of fire, elements of fire and the fire tetrahedron, heat transfer, the process of combustion, and the development of fire	
LG2-8	4.2 Take away Explain the relative ease with which fires can occur and their potential impact.	
LG2-9 PPT S48	5. CLOSING EVALUATION 5.1 Review the objectives by asking the questions; <ul style="list-style-type: none">• What is fire?• What are the main characteristics of a fire?Elements?• What are the phases of development for a typical fire? Contributing factors?• What are the potential impacts of fire on you? 5.2 Ask if there are questions or clarification 5.3 Allow participants to share what they have learned during the subject	

Origin - The Chemical History of a Flame

2.1 History of Fire in Human Use^[1/9]



Fig 1. Depiction of Early Man Gathering Around Fire. Source: vikasacharya.wordpress.com

As one of the 5 basic elements, Fire can trace back its history to the beginning of the universe. However, it is when man understood fire, its uses, and how we learned to both create and control fire that helped turn us from just another species into one able to change our surroundings and shape the planet to suit our own needs.

To aid mankind towards civilization it is said that the Greek God Prometheus stole fire from the gods and gave it to humanity as a gift. In reality, though, a fire most likely occurred naturally with either tinder, dry grass, and wood being set alight by the heat of the sun, by lightning, or by some other natural source and accidentally came upon by early man.

The earliest evidence of our ancestors (*Homo Erectus*) using fire dates back from between 1.7 to 2 million years ago. Though, the most widely accepted evidence points to about one million years ago citing campfire remains found at caves in Africa (*Science Daily 2012*). Interestingly, during the same period *Homo Erectus* also started developing a larger brain and a more efficient gut. The theory is that, learning how to roast meat and vegetables over fires provided our ancestors with a much-needed surplus of energy. And seeing as the human brain consumes 20% of the body's calories at rest, cooking effectively predigested food and helped early humans absorb calories more rapidly.

Trivia:

Did you know that fire was first discovered by our ancestors *Homo Erectus* between 1.7 and 2 million years ago? In the past, our ancestors first used fire to cook meat and as protection against predators at night.

Additional trivia:

When fire met food, the brains of early humans grew. Cooking made food easier to digest and gave early humans the calories needed to feed that bigger brain. (*ADLER 2015*)

However, the regular and habitual use of fire can only be confidently dated to somewhere between 300,000 and 400,000 years ago. The evidence to support this includes what has been identified as a repeated use of a single hearth, with additional signs of meat being roasted there. (Scutumlondon.co.uk)

Middle Ages

Fire became an **essential part** of life by the Middle Ages. It was used to provide, light, heat homes, and cook food. Almost every dwelling or structure had at least one hearth where people would gather to cook, eat, and socialize. Coincidentally, fire was also extensively used in the other thing people did best, **warfare**. During the siege of Ma yenne in 1063, William I of England's. Archers shot fire into the garrison, while two young boys made it into the castle and started a fire within the walls. Death by fire was also an occasional and horrific punishment during the Middle Ages, often for people accused of witchcraft or heresy. The most famous being Joan of Arc.

Additional trivia:

Did you know that in the Philippines, major burn units are found in only four hospitals? Philippine General Hospital, Jose Reyes MMC, East Avenue Medical Center and Davao Medical Center. (NLM 2017)

Fire Emergencies in Modern Times

A 2018 statistic from the World Health Organization classified fire-related injuries such as burns as a **global public health problem**, accounting for an estimated 180,000 deaths annually. The majority of these occur in low- and middle-income countries with two-thirds occurring in African and South-East Asia regions.

Non-fatal burns are one of the leading causes of morbidity for low-income communities in the Philippines, including prolonged hospitalization, disfigurement, and disability. ([WHO 2018](#))

Key facts to remember:

- An estimated 180,000 deaths every year are caused by burns – the vast majority occur in low- and middle-income countries.
- Burns occur mainly in the home and workplace.
- Burns are **preventable**.

Facilitator's Note [1/7]

In the Philippine context, reports of fires have become commonplace in the news as of late. For example: (Cite 1-2 recent incidents and allow participants to provide their thoughts on those cases. Ask/ answer questions like what happened? Casualties? Victims?) As we continue to develop, as our communities continue to grow, fires will continue to pose a danger to every one of us.

In the Philippine Setting

Although the number of incidents involving fire has gradually dropped, from January 1 to April 17, 2023, there were 3,991 fire incidents that they recorded (BFP), 10 percent less compared to the 4,448 fire incidents recorded during the same period last year, the severity of these fires and the number of people who died as a result of fire was higher. ([Guzman 2023](#))

In early 2023 the number of deaths from reported fires reached 124, which includes 121 civilians and three firefighters, higher than the 87 recorded the year prior. The number of fire injuries was also higher at 402, vs 352.

Property damage also swelled by 83.4 percent year-on-year and reached P15,122,588,314 in early 2023, compared to only P1,619,206,831 last year. (*Punan 2023*)

It seems that, here in the Philippines even with the constant efforts of both government and the private sectors, the damage caused by fires is overwhelmingly looking worse. But why is that?

Destructive Fires and Social Responsibility

Fire can be a welcoming thing, a warm, comforting respite from the cold, or a beacon for anyone who has ever sat by a campfire in the dark. Yet fire can also be deadly and unpredictable, consuming everything in its path and leaving nothing but ruin.

It has been regarded as both a blessing and a curse; however, more recently, fires have characteristically been viewed as destructive, but this is not true. Fire is inherently neither good nor bad. It is both the catalyst for human progress and has great potential for destruction. The difference lies in whether it can be harnessed and controlled or not. Remember, fire is good until it isn't.

Social Responsibility is a moral framework where individuals cooperate for the benefit of the community. This can be done passively, by avoiding harmful acts, or actively by participating in activities that advance the goals of the community, such as spreading awareness and volunteerism. Social responsibility is also intergenerational since the present actions of even single individuals have consequences for everyone else who will follow.

Social Responsibility in Fire Safety

So, what is social responsibility in fire safety? Everyone should actively cooperate with others to be a positive influence on the fire safety of their communities. It is the idea of your fire safety practices and beliefs influencing others around you, with even small actions contributing to the greater whole.

By actively participating, spreading awareness, and gaining a better understanding of how and where fires can begin and develop, all of us are doing our part to ensure that the risk of destructive fires is managed.

This is Echoed in the Bureau of Fire Protection's call to action against destructive fires and its long-running theme: "Sa Pag-iwas sa Sunog, Hindi ka Nagiisa."

The Importance of Being Prepared

Being prepared makes a difference as these plans limit or prevent fires from happening in the first place. Good preparation helps save lives, allay fears and can make it easier to recover when fires do occur.

Facilitator's Note [2/7]

At the end of the discussion, Ask the question: so, are fires good or bad? Do we need them? (Answer: fires are inherently neither good nor bad - just controlled or uncontrolled.)

So, who is responsible for keeping fires under control and avoiding destructive fires? (Answer: every one of us, hand in hand - because the BFP cannot do it alone.)

General Characteristics of a Fire [2/9]

When talking about fire, we can define it by its characteristics:

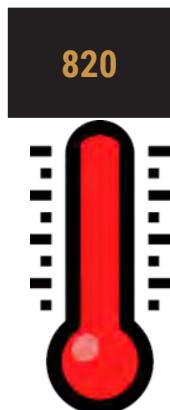
FIRE IS FAST! (Spread)



Even a small fire can quickly get out of control in as little as 30 seconds if left untouched and can meet conditions for a “Flashover” in as little as 3 minutes. Typically, the heat generated by a fire naturally rises where it is dissipated into the surrounding air, but in an enclosed space, this heat is trapped by the ceiling which then travels horizontally, spreading the fire across the entire room and engulfing it in flames within moments. (*Readers Digest 2018*)

This needs to be taken into account when planning for your initial fire response or conducting emergency evacuations because it only takes minutes for smoke to fill up a house or for it to be fully engulfed in flames.

FIRE IS HOT! (Intensity)



As a general rule, we say that fire is hot, but how hot? The heat from a matchstick is different than the heat from a burner, the same is true for structural fires.

The heat generated in a structural fire is actually more dangerous than the flames themselves. Within minutes, room temperatures in a fire can be 40°C (extremely hot summer day) at floor level and rise to 320°C (maximum setting on a kitchen oven) at eye level. This is hot enough to melt clothing on the skin, cause severe burns, and scorch your lungs in one breath.

As heat naturally rises and gets trapped, upper thermal layers can reach up to 820°C. This intense heat buildup causes objects to spontaneously ignite regardless of their proximity to the blaze, this is known as Flashover.



FIRE IS DARK!

Fires may start bright but quickly produce black smoke and complete darkness. Even a small fire can produce enough smoke to fill a building within minutes. This thick black smoke can quickly cause disorientation, and impair spatial awareness and recognition.

This is often the most underestimated danger when it comes to talking about fires. While reduced visibility may not outright harm individuals caught in a fire, it can be a major contributing factor to how quickly (or slowly) people can navigate inside a burning building and evacuate to safety.

FIRE IS DEADLY! (Severity)

More people die from smoke inhalation during fires than the actual flames. Smoke produced in a fire contains poisonous gases such as carbon dioxide, hydrogen cyanide, and ammonia that attack your eyes, nose, throat, and lungs. Inhaling even small amounts of smoke can numb your senses and leave you dazed.



Even more dangerous is the presence of Carbon Monoxide (CO) which is a colorless, tasteless, and odorless gas that is extremely difficult to detect. It is produced when fuels such as oil, coal, gas, and wood are burned and is often known as the **silent killer** owing to our lack of initial reaction when being exposed to it. (Which often only presents as nausea and lightheadedness)

The Candle and the Matchstick (Chemistry of Fire) [3/9]

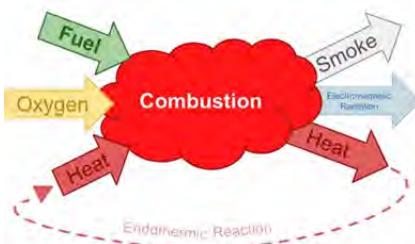
What is Fire?

The First step in preventing fires is to understand exactly what it is. The Fire Code of the Philippines (RA9514) defines fire as the active principle of **burning**, characterized by **heat** and **light** of combustion.

It is a rapid oxidation of a material in the exothermic chemical processes of combustion, releasing heat, light, and various reaction products. It is neither solid nor liquid. Fire is a chemical reaction that results in light and heat and it usually occurs only in the gas phase. Solids must be heated first, to decay and produce gases, a process called **pyrolysis**. Liquids must be heated to produce ignitable mixtures in air (**vaporization**).

Facilitator's Note [3/7]

The lecturer may then again ask the question: "But really, what is fire?" (Entertain 1-2 speculative answers before defining fire (RA9514))



Source: <https://firewise.com.au/definition/fire>

Combustion or “burning” on the other hand is a high-temperature exothermic (heat-producing) reaction between a fuel, oxidizer (oxygen), and an initial heat source.

Combustion occurs when a fuel or other materials chemically react with available oxygen and in the process, produce light, heat, and a flame. The visible, gaseous part of a fire resulting from the heat produced during the reaction is called the flame and consists primarily of carbon dioxide, water vapor, oxygen, and nitrogen.

The Element of Fire

Facilitator's Note [4/7]

Activity I. – Elements: This demonstration will illustrate how elements of fire contribute to the initial ignition (please refer to the activities section)

For the initial combustion to occur, three essential components needed, we often refer to this as the three elements of fire: Fuel, Heat and, Oxygen. These elements are interdependent with each other where all three are constantly consumed during the combustion process. The absence or removal of one or more these elements will break the combustion cycle and lead to the extinguishment of the fire.

I. Fuel

It is anything that can burn and contains the chemical potential energy released during combustion. Initially, the fuel may be in the form of a solid, liquid, or gas at the ambient temperature.

Some materials burn easier than others, this has to do with their **fire point** or the minimum temperature at which a fuel emits sufficient vapors to ignite when exposed to a flame or heat source. A high fire point means that a certain material has a lower hazard when exposed to heat sources. Since all materials have a fire point, nothing is ever truly fireproof only fire –resistant.

Another factor to be considered, particularly in the case of solids, is the physical size and shape of the material. The more surface area subjected to heat and resulting vaporization, the more easily ignitable it becomes. As an example – it is very difficult to light a large log in a fireplace with a single match, but very small pieces of wood, having more combined surface area exposed to heat, can be easily ignited.

II. Heat

It is the energy component of the fire triangle and is responsible for the initial ignition. When heat comes into contact with a fuel, the energy supports the combustion reaction. Heat allows fire to spread by drying out and preheating nearby fuel (pyrolysis) as well as warming the surrounding air.

The amount of heat required to start the reaction largely depends on the type of fuel and its **fire point**.

Heat/ignition sources include anything capable of generating heat for example lightning, cigarettes, powerlines, catalytic converters, small engine sparks, matches, and sunlight hitting a magnifying glass.

III. Oxygen

It is present in the air we breathe and serves as the oxidizing agent for the combustion process. Because combustion or “burning” is essentially oxygen combining with fuel through the application of heat, the amount of oxygen available controls the speed of the reaction.

With a diminished amount of oxygen, the combustion process is slowed (i.e., Rusting). With an abundant amount of oxygen, the chemical reaction is accelerated. (i.e., when fanning flames)

More oxygen means a fire will burn hotter

Air contains about 21 percent oxygen, and most fires require at least 16 percent oxygen content to burn. When fuel burns, it reacts with oxygen from the surrounding air, releasing heat and generating combustion products (gases, smoke, embers, etc.) in a process known as oxidation.

3.3 The Fourth Element (Fire Tetrahedron) [4/9]

The Chemical Chain Reaction

While it is true that fire cannot exist without each of the three elements present, simply combining them at random does not guarantee ignition. Otherwise, everything would ignite spontaneously seeing that each element is constantly present at varying levels in our surroundings

For combustion to occur, requires that the three elements combine in the correct ratio to initiate and sustain combustion — this is called the chemical chain reaction and is the most essential component of the burning process.



Source: fire-risk-assessment-network.com

The Fire Tetrahedron

In addition to the elements of fire, the fire tetrahedron introduces the fourth component – Chemical Chain Reaction. Each face of the tetrahedron represents the interdependent elements needed to ignite and sustain fire. At its base is the chemical chain reaction which brings

together the other components to create fire. Having this fourth component together with the three elements of fire provides a clearer understanding of what causes fires to ignite and continue to burn over time.

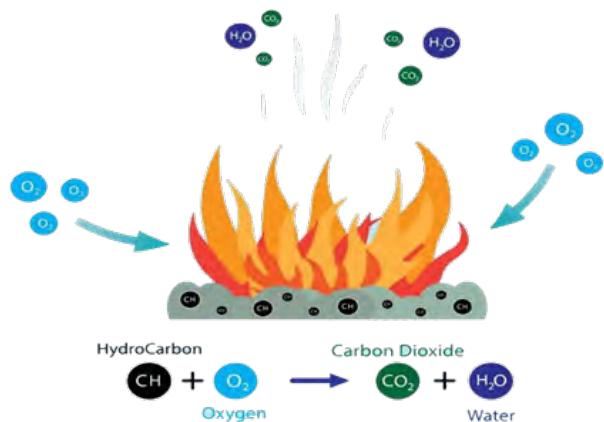
How the Chemical Chain Reaction happens

When the three elements of fire coalesce in the correct ratio, initial ignition occurs, the chemical chain reaction then continues to support the burning process by providing enough heat to sustain the fire. To do this, the combustion must produce more heat than it loses to the environment and is achieved by having fuel at their ignition temperature and enough oxygen to support the reaction. As long as this golden ratio is sustained, the fire grows and continue to burn until one or more of the elements run out.

Combustion – A Closer Look

Combustion occurs when the products of a series of chemical reactions contribute to another reaction. This transformation of products to reactants allows a reaction to continue with minimal or no outside influence. These chain reactions are generally triggered by a single initial reaction where an unstable product from the first reaction becomes the reactant ($\text{CO}_2 + \text{Heat}$). This is how fire propagates over a larger area.

There are three “phases” to a chemical chain reaction: the first is the initiation or the initial spark, the next is the propagation, and the final state is the termination where the system reaches a stable state.



source: <https://shorturl.at/dlyS4>

Let's take a lit campfire as a way of illustrating the processes taking place during combustion. When a piece of wood or other flammable material is surrounded by enough oxygen and is exposed to a source of heat bringing it to a temperature above its flash point, a fire is then ignited. This process will

continue as long as there is enough oxygen, fuel, and heat to maintain the chemical reaction of the fire.

Additionally, in this example the products of combustion (Heat + CO₂) act against other nearby sources of fuel by preheating them, eventually leading to further spread of the fire until such time that all available fuel is consumed.

Different Fuels, Different Products of Combustion

Typically, during complete combustion, when there is enough oxygen available to react with all the fuel, very few byproducts are left over. For instance, take hydrocarbons such as wood or gasoline (CHO). When these undergo complete combustion, the reaction will primarily yield carbon dioxide and water. The same is true when elements burn, only that they mainly produce oxides of the original reactant element. Burning Carbon will yield carbon dioxide, sulfur will produce sulfur dioxide and iron-iron oxide. This is the reason why, some fires have toxic smoke, while others release acids when burned.

Some Fires More Toxic than Others. An example of this happens in the case of refrigerator fires, specifically the refrigerant (cooling agent) they contain. Did you know that the most common commercial refrigerant (R134A) releases, **hydrogen fluoride** in addition to the other products of combustion? And when this gas makes contact with the moisture in your lungs it creates **HYDROFLUORIC ACID**. So yes, next time your refrigerator goes up in flames, close the door and stay away.

Facilitator's Note [5/7]

Activity II. – Fuels: This activity will demonstrate how the shape, size, and composition of fuels affect combustion (please refer to the activates section)

Trivia:

Did you know that combustion is the opposite process of photosynthesis? Combustion is the process of breaking apart the building blocks put together during photosynthesis, thereby releasing the stored chemical energy within the fuel to create the byproducts of combustion plus heat.

Combustion

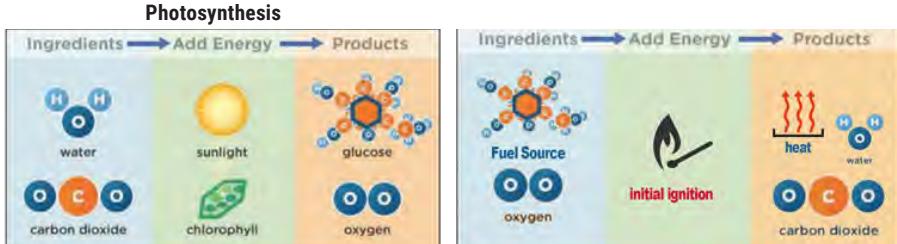
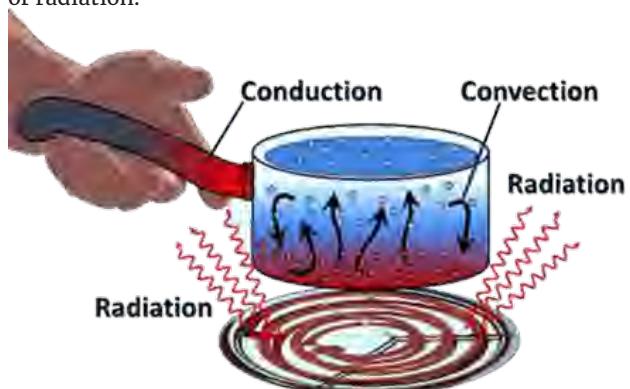


Fig: illustration showing how combustion binds the fuel to oxygen, thereby in a chemical reaction that produces heat, thereby creating the other products of combustion.

3.4 Spread - Heat Transfer^[5/9]

Understanding heat transfer is important because a major aspect of fire dynamics (how fires begin, grow, and evolve) is to understand how heat is transferred to and from a fire. Heat spreads through 3 methods: convection, conduction, or radiation.



source: <https://wegetstuffdone.com/mechanisms-heat-transfer/>

Trivia:

Did you know that even air can conduct heat? This is because conduction is defined as the transfer of heat through particles of matter without bulk motion

I. Conduction

It is the transfer of heat from one body to another by direct contact of the two bodies or by an intervening heat-conducting medium. For example, a flame touching and lighting a candle wick is an example of conductive heat.

This is regarded as the slowest method for heat transfer because the heat needs to travel from particle to particle.

Conduction contributes to the spread of fires either by:

1. Conduction via Direct Contact with Flames

This process is directly affected by proximity or how close other burnable materials are to the fire.

(Example: Flames Directly Touching Objects in the vicinity of a fire)

2. Conduction through objects via a Medium with High Thermal Conductivity

Thermal Conductivity is defined as the ability of any material to conduct/transfer heat. Because some materials conduct heat better, fires can spread faster depending on the material being burned.

(Example: A Steel pipe going through the floor of a multi-story building can spread the heat throughout the building during a fire.)

II. Convection

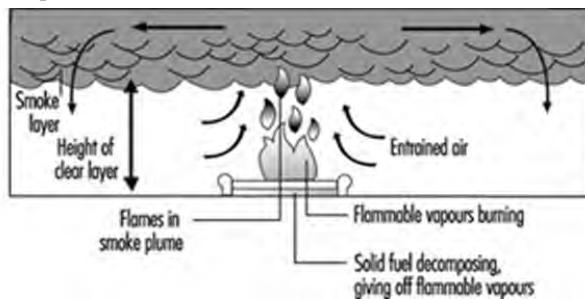
It is the transfer of heat energy by the movement of fluids from the source of heat to a cooler part of the environment. It is the most common method of heat transfer; when liquids or gases are heated, they become less dense and will expand and rise.

(Example: In a hot air balloon air is heated making it less dense than the surrounding air and causes the balloon to rise.)

Convection Heat Transfer During Fires

In a typical fire, the heated air continues to rise, creating a plume of heat, smoke, and ash which dissipates into the atmosphere. In enclosed fires however, this heated air makes contact with the ceiling, where it is trapped causing it to move horizontally throughout the structure creating currents of hot air. Because the heated air is trapped, it eventually becomes denser, which is then forced down through the air column increasing ambient room temperatures by hundreds of degrees in a matter of minutes.

This is the most dangerous way a fire can spread through a structure since this method of heat transfer tends to dry and preheat fuels faster.



Picture Source: www.iloencyclopaedia.org

III. Radiation

This is the transfer of heat by infrared radiation (heat waves, e.g., the sun) which generally is not visible to the naked eye. Radiant heat generally travels from the sides or edges of a fire until the heat waves reach another object. It is the least efficient method of heat transfer to fuels and is greatly affected by distance.

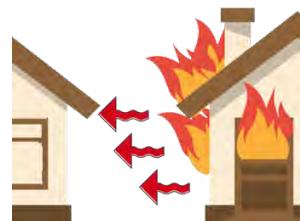


Fig. shows radiated heat transferring to other burnable material

Radiated Heat During Fires

Because radiated heat moves in all directions away from the initial fire, a sufficiently hot fire may spread to any burnable material close enough to absorb enough heat. In extreme cases, burnable object may spontaneously combust when subjected to enough heat for it to reach its **fire point**.

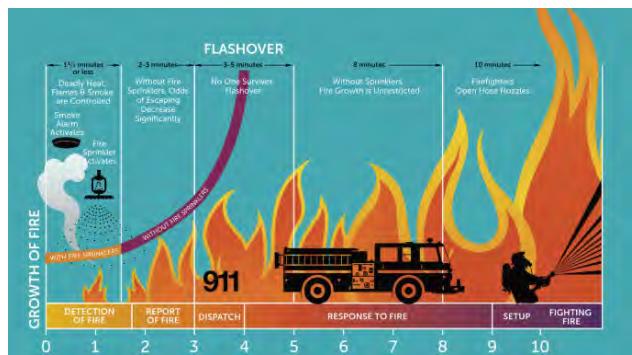
Facilitator's Note [6/7]

Scenario-Based Activity I. – Development in real time: This demonstration will illustrate how a fire develops in real time when compared to active response times. Narrate the scenario as stated.

Fire Development is divided into four (4) Stages: Incipient, growth, fully developed, and decay.

From Incipient to Decay - Stages of Development [6/9]

When you are faced with a fire emergency, what you do within the first few minutes can mean the difference between potentially saving yourself, your loved ones, and your property or losing it all. Understanding how a fire forms and knowing the what factors contribute to each stage can help you better protect yourself and your assets - from the incipient stage until decay.



Picture Source: link.springer.com/



Fig. Showing the Incipient Stage

Stage 1 – Ignition (Incipient Stage)

The first stage begins when the three elements of fire are present in the correct ratio that a chemical reaction occurs to produce a flame and typically lasts for up to a minute from the initial ignition. It is crucial to fight the fire at this stage because it is easiest to suppress and will cause the least damage. During this stage, a flame may not even be visible making it harder to identify that a fire is occurring at all. (Smoke detectors are activated during this stage)

Fuel-wise, the fire only involves fuel in the immediate vicinity and is characterized by small flames that are not widespread, smoke still allows visibility in the affected room, and the heat emitted is relatively low.



Fig. Showing the Growth Stage

Stage 2 – Growth Stage

If the fire remains undisturbed and is allowed to continue it eventually enters the growth stage. How fast a fire grows at this point is affected by the availability of oxygen to continue supporting its growth, the quantity and type of fuel available, and its proximity to the initial fire.

During this phase a defined layer of thick smoke above the flame is present, this reduces visibility in enclosed spaces. The temperature in the room increases drastically as the

fire grows and spreads first vertically and then laterally.

Thermal layering also occurs during this phase where heated air is trapped by the ceiling and pushes cooler air down to the floor. As heat builds up, this produces a distinct fast-moving smoke (turbulent smoke) indicating that conditions are ripe for a **flashover**.

Flashover is a condition when there is a sudden ignition of all combustible materials in a confined area. Temperatures can rise to 800+ degrees Celsius in just a few seconds.

Stage 3 – Fully Developed

This brings us to the third phase of fire development, a fully developed fire is the hardest to suppress because, at this point, the fire has ignited all available fuel and is at **maximum temperatures** (700°–1200°C) and causing the most heat damage. If you've failed to suppress the fire before this point, then your chances of stopping the fire are much smaller.

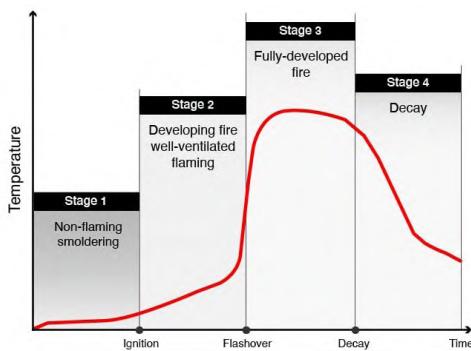
A fully developed fire may exhibit: darkened or black smoke, substantial radiated heat, and flames visible on the exterior of the structure



Fig. Showing the Fully Developed Stage

Stage 4 – Decay

During the final stages of fire, a flame will enter the decay phase. This stage occurs after the fully developed flame starts to run out of fuel or oxygen. If no additional fuel or oxygen is introduced then the fire eventually goes out.



Picture Source: www.firetrace.com



Fig. Showing the Decay Stage

3.6 Implications - Effects^[7/9]

Physical Cost

Fires can cause significant damage to property, including buildings, vehicles, and personal belongings. The damage can be particularly severe for low to mid-income

communities prevalent in the Philippines because of the lack of readily available financial resources to support recovery. For the business sector, a fire in a manufacturing facility can destroy expensive machinery, raw materials, and finished products leading to lower productivity and economic output.

Bodily Harm

Fires within densely populated areas often result in injuries, or worse death, and with far-reaching consequences. Because burns and smoke inhalation account for the majority of injuries during fires, victims may require extensive medical treatment, such as reconstructive surgery, skin grafts, and long-term rehabilitation. Smoke inhalation can also cause serious respiratory problems such as permanent lung damage, which can have life-long health consequences.

Emotional Cost

Witnessing a fire or experiencing the loss of a loved one in a fire can be emotionally traumatizing, leading to anxiety, depression, and post-traumatic stress disorder (PTSD). Victims of a fire may feel a sense of hopelessness, and vulnerability and struggle to cope with the event's aftermath. Even if not physically injured, they may experience significant emotional distress, affecting their ability to work and carry out their daily activities.

Facilitator's Note [7/7]

Allow participants to relate some of their own experiences (or known experiences) during fires, how quickly it spread, how fast/slow response times were, and its effects on them or others

Your Take-Away [8/9]

Fire is inertially neither good nor bad. Sadly, destructive fires can happen anywhere and at any time, and if left unchecked, can have devastating effects on both life and property. The Philippines in particular, is still highly vulnerable to the effects of fire disasters (Kurata et al 2023) and needs a cooperative approach to fire prevention from all members of society. The first step in preventing destructive fires is to understand what fire is.

Closing Evaluation [9/9]

- Evaluate the participants by asking the questions:
- What is fire?
- How important is fire?
- What are the main characteristics of a fire? Elements?
- What are the phases of development for a typical fire? contributing factors?
- What are the potential impacts of fire on you?
- How important is preparedness and social responsibility in fire safety

Footnotes and References

Science Daily 2012, Evidence of Man Using Fire 1million Years Ago
<https://www.sciencedaily.com/releases/2012/04/120402162548.htm>

Scutumlondon.co.uk, The History of Fire and How Humans Discovered IT
<https://www.scutumlondon.co.uk/help-advice/the-history-of-fire-and-how-humans-discovered-it>

WHO 2023, Burns Factsheet
<https://www.who.int/news-room/fact-sheets/detail/burns>

Adler 2015, Why Fire Makes Us Human
<https://www.smithsonianmag.com/science-nature/why-fire-makes-us-human-72989884/>

Readers Digest 2018, 5 Myths About House Fires
<https://www.readersdigest.ca/home-garden/cleaning/5-myths-about-fire/>

NLM 2017, Clinical Management of Burns in the Developing World
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5318592/>

Punan 2023, PH Fire Incidents Up 40%
<https://pia.gov.ph/news/2023/05/02/ph-fire-incidents-up-40-bfp>

Guzman 2023, PH Fire Incidents Down, Casualties Up
<https://pia.gov.ph/news/2023/04/19/ph-fire-incidents-down-casualties-up-bfp>

Kurata et al, Determining Factors Affecting Perceived Effectiveness among Filipinos for Fire Prevention Preparedness
<https://www.sciencedirect.com/science/article/abs/pii/S2212420922007166>

Activities:

I. Elements (10 minutes)

This demonstration illustrates that if you take one element (oxygen, fuel, heat source) of the fire triangle away, the fire will go out. This demonstration is conducted in front of the class on a table with a fire-proof surface. You will need a clear glass jar, a candle, petroleum jelly, a lighter, 2 sets of 10 matchsticks held together with a rubber band, and a little water.

1. Place a little petroleum jelly on the rim of the jar
 (To create a seal between the jar rim and the table top)
2. Light the candle, and place the jar over the candle. After a few moments, the candle will begin to dim and go out.
3. Next, place the bunched-up matches on the table, and light the matches. After a few moments the matches will burn up and the flames will be extinguished.
4. Lastly, place the same number of wet matches on the table and attempt to light the matches

52 MODULE 5 Basic Leadership Training through Fire Safety

Ask participants the following questions:

1. Why did the candle go out?
(Lack of oxygen).
2. Why did the first set of matches go out?
(Ran out of Fuel)
3. What happened to the second set of matches?
(Not Enough heat to ignite)
4. What else can we do to extinguish flames?
(Deny the fire fuel; reduce or eliminate the heat source by using water; take away the oxygen by using a chemical fire extinguisher for chemical, fuel, or grease fires.)

II. Fuels (20 minutes)

This activity will allow students to explore the different properties of fuels and their effects on combustibility. Provide students with a safe area, a fire-proof surface, or a clear area to burn different sizes and types of fuel. With the participants grouped as indicated at the beginning of the subject

1. Provide each group with 3 matchsticks (as initial ignition source) and a variety of fuels, one for each group:
 - a. 3 pieces of paper, tightly folded
 - b. 3 pieces of paper, shredded
 - c. 3 pieces of paper, damp shredded
 - d. 3 pieces of paper, damp tightly folded
 - e. Petroleum Jelly
2. Have students attempt to light their fuel in the least amount of time while using the least amount of their initial ignition source(matchsticks)
3. Participants may arrange their fuel in whatever configuration they want as long as the original shape of the fuel is not changed. (**Allow 2 minutes of group planning**)
4. Each group will take turns to attempt and ignite their assigned fuel.
5. Have other groups make observations of how thoroughly each group's fuel ignited and burned, and how many matchsticks were needed

Ask the participants the following questions:

1. Which group ignited their fuel the easiest?
(3 pieces of paper, shredded)
2. Which group found it harder to ignite their fuel?
(3 pieces of paper, damp tightly folded, and petroleum jelly)
3. Why did you think some others burned easier than others?

(surface area and moisture content in the fuel,)

4. Were you able to burn the petroleum jelly? Why do you think so?

(no, because petroleum jelly is not flammable)

At this point, take 2 balls of cotton, one with petroleum jelly and one without. Burn both balls at the same time. (the cotton ball with petroleum jelly will burn longer)

Explain that although petroleum jelly is normally thought to be non-flammable, when heated to 70 degrees or more (enough to melt) it releases vapors allowing it to burn. Because the fire point of petroleum jelly is 70 degrees.

Scenario-Based Activity I

A Video clip demonstration of a fire will be played on screen, this demonstration will show how a typical fire burns when left alone, and shows the key timings when detection occurs, reporting happens, and finally when response teams arrive. The facilitator should create a story around the events which are relatable to the audience based on their demography and/or location.

(Example: It is Saturday morning, 7 am, at one of the offices near _____. A water heater was left plugged in at one of the lounges by an employee, since it is Saturday, only the duty guard and cleaners are on site. At 7:10 am (timestamp 00:10) something begins to burn near one of the sofas, it's the water heater; and so on.

It is important to tell this scenario in terms that are relatable to the audience. You may insert actual travel times needed by emergency responders)

Video is included in this activity. The facilitator should narrate what is happening during key points in the video while connecting it to the phases of fire development.

00:10 Ignition

00:30 Growth

01:30 (Detection) smoke detectors go off

01:45 Flames approach the ceiling

01:50 Smoke has filled the room, thermal layering occurs

02:00 (Reporting) 911 is called, fire fighters are alerted

02:00 Fire spreads to the ceiling and walls

02:30 Firetruck is dispatched and starts traveling to fire scene (travel time is typically 5 minutes)

02:30 FLASHOVER

02:31 Fire engulfs entire room

After the video, ask the questions:

1. What do you think will be the result if the fire is left alone to continue at this pace?

(house will burn down)

2. Would firefighters have been able to arrive on time to prevent major damage?

(no)

3. Could the damage have been prevented? Minimized? How?

4. Have you known any real events where firefighters arrived on scene with the structure fully engulfed in flames?

(Allow participants to share answers.)

Chapter 2

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

[Cover Page]

Dynamics – The Chemical History of a Flame

[Firestation]
[Address]
[Hotline]

Subject Goal 

For the audience to get a comprehensive understanding of basic concepts surrounding the creation and sustainment of a flame, allowing them to recognize conditions that could allow for sustained combustion and subsequent development and spread of fire.

2

Subject Objectives



1. Gain an appreciation of the importance of individual fire preparedness and social responsibility in fire safety
2. To explain the basic principles behind the origin of fire
3. To identify the four stages of fire development and contributing factors to its spread
4. To understand how heat transfer and fuel arrangement contribute to fire spread and intensity

3



What do you see?

4

What is Fire? 



What is it made of?

Is it Useful?

Is it Destructive?

5

The Complicated Relationship Between **Man** and **Fire**

6

History of Fire In Human Use
Mankind's Discovery of Fire

Myth:
According to Greek Mythology the Greek God Prometheus stole fire from the Gods and gave it to *Aid Mankind Towards Civilization*

Reality:
Fires occurred naturally in nature and accidentally came upon by early man 1.7 – 2 million years ago
Used by our ancestors Homo Erectus to Roast Meat and Vegetables

Evidence of habitual use only dates back from 300,000 to 400,000 years ago

7

History of Fire In Human Use
Mankind's Discovery of Fire

Fire Cooking and the Human Brain



During the same time, *Homo Erectus* also started developing a larger brain and a smaller more efficient gut.
The human brain consumes 20% of the body's calories at rest.

When fire met food, the brains of early humans grew. Cooking made food easier to digest and gave early humans the calories needed to feed that bigger brain.

History of Fire In Human Use
Fire in the Middle Ages

In the Middle Ages fire was regarded as an *Essential Part of Life*

Warmth and Warfare



9

History of Fire In Human Use
Fire Emergencies in Modern Times

In 2018 The World Health Organization (WHO) classified fire related injuries as *A Global Health Problem*

180,000
People still die every year from fire related injuries.
Low and Middle Income Countries at risk

Burns are Preventable



10

History of Fire In Human Use
Fire Emergencies in Modern Times



Fires in the Philippines
Incidents down – Casualties up.

From January 1 to April 17, 2022, there were 3,991 fire incidents recorded by the BFP, 10 percent less compared to the 4,448 fire incidents recorded during the same period in 2022.

The severity of these fires and the number of people who died as a result of fire was higher though; from fires reached **124**, which includes 21 civilians and three firefighters, vs. **87** in 2022.

11

Despite the fire prevention programs

Why are destructive fires are still so common? And so deadly?



12

Is fire good or bad?

*Fire is inherently neither good nor bad.
It all depends if we can control and harness it or not.*

The discovery of fire is credited as the single most important factor that gave way to man's Progress.

13

Understanding Social Responsibility
In Fire Safety

Social Responsibility
is a moral framework where individuals cooperate for the benefit of the community.
It is *intergenerational* since your present actions will undoubtedly have consequences for everyone else who will follow.

Social Responsibility in Fire Safety

It is the idea of your fire safety practices and beliefs influencing others around you, with even small actions contributing to the greater whole.

The Importance of Being Prepared

Being prepared makes a difference as these plans limit or prevent fires from happening in the first place. Good preparation also helps save lives, allow fears and can make it easier to recover when fires do occur.


14

Spread Awareness
Cooperate with Others

What is fire?

15

Characteristics of Fire

FIRE IS FAST! (Spread)



Even a small fire can quickly get out of control in as little as 30 seconds if left untouched and can meet conditions for a "Flashover" in as little as 3 minutes.

This needs to be taken into account when planning for your initial fire response or conducting emergency evacuations because it only takes minutes for smoke to fill up a house or for it to be fully engulfed in flames.

16

Characteristics of Fire

FIRE IS HOT! (Intensity)

The heat generated in a structure fire is actually more dangerous than the flames themselves. Within minutes, the room temperatures in a fire can be 40°C (extremely hot summer day) at floor level and rise to 320°C (maximum setting on a kitchen oven) at eye level. Thermal layers can reach up to 820°C



17

Characteristics of Fire

FIRE IS DARK!



Fires may start bright but quickly produce black smoke and complete darkness. Even a small fire can produce enough smoke to fill a building within minutes. This thick black smoke can quickly cause disorientation, and impair spatial awareness and recognition.

18

Characteristics of Fire

FIRE IS DEADLY! (Severity)

Most people who die in fires, die from smoke inhalation and not the flames. Smoke contains hundreds of toxic gases such as carbon dioxide, hydrogen cyanide, ammonia that attack your eyes, nose, throat and lungs.



Carbon Monoxide (CO) which is a colorless, tasteless, and odorless gas that is extremely difficult to detect and is often known as the *silent killer*.

19

But Really What is fire?

20

The Candle and the Matchstick Chemistry of Fire

What is Fire

The Fire Code of the Philippines (RA9514) defines fire as the active principle of burning, characterized by heat and light of combustion.



Combustion or "burning" on the other hand is a high-energy chemical reaction involving the presence of a fuel, oxidizer (oxygen), and an initial heat source occurs when a fuel or other materials chemically react with available oxygen and in the process, produce light, heat, and a flame

21

The Candle and the Matchstick Chemistry of Fire

Fuel

It is anything that can burn and contains the chemical potential energy released during combustion. Initially, the fuel may be in the form of a solid, liquid, or gas at the ambient temperature.

Some materials burn easier than others, this has to do with their *fire point* or the minimum temperature at which a fuel emits sufficient vapors to ignite when exposed to a flame or heat source.

22

The Candle and the Matchstick

Chemistry of Fire

Heat

It is the energy component of the fire triangle and is responsible for the initial ignition. When heat comes into contact with a fuel, the energy supports the combustion reaction. Heat allows fire to spread by drying out and preheating nearby fuel (pyrolysis) as well as warming the surrounding air.

23

The Candle and the Matchstick

Chemistry of Fire

Oxygen

It is present in the air we breathe and serves as the oxidizing agent for the combustion process. With a diminished amount of oxygen, the combustion process is slowed (E.g., Rusting). With an abundant amount of oxygen, the chemical reaction is accelerated.

More oxygen means a fire will burn hotter

24

Activity I - Elements

25

Activity I Questions

1. Why did the candle go out?
2. Why did the first set of matches go out?
3. What happened to the second set of matches?
4. What else can we do to extinguish flames?

26

The Candle and the Matchstick

Chemistry of Fire

Chemical Chain Reaction

The Fourth Element (Fire Tetrahedron)

This pertains to the combination of the three elements in the correct ratio to create and sustain combustion



27

Lets Take a Closer Look at Combustion

28

Combustion – A Closer Look

Combustion occurs when the products of a series of chemical reactions contribute to another reaction.

These chain reactions are generally triggered by a single initial reaction where an unstable product from one reaction becomes the reactant ($\text{CO}_2 + \text{Heat}$).

Three (3) Phases of Chemical Chain Reaction

Initial Spark

Propagation

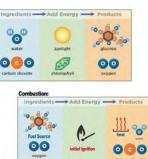
Stable State

29

Combustion – A Closer Look

Did you know that combustion is the opposite process of photosynthesis?

Combustion is the process of breaking apart the building blocks put together during photosynthesis, thereby releasing the stored chemical energy within the fuel to create the byproducts of combustion plus heat.



30

58 MODULE 5 Basic Leadership Training through Fire Safety

Combustion – A Closer Look

Different Fuels, Different Products of Combustion

During **COMPLETE COMBUSTION** when there is enough oxygen available to react with all the fuel, very few byproducts are left over.

The same is true when elements burn, only that they mainly produce oxides of the original reactant element

Did you know? that the most common commercial refrigerant (R134A) releases **hydrogen fluoride** when burnt? And when this gas makes contact with the moisture in your lungs it creates **HYDROFLUORIC ACID**. So yes, next time your refrigerator goes up in flames, close the door and stay away.



31

Activity II - Fuels

32

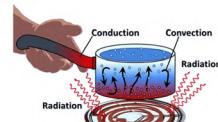
Activity II Questions

1. Which group ignited their fuel the easiest?
2. Which group found it harder to ignite their fuel?
3. Why do you think some others burned easier than others?
4. Were you able to burn the petroleum jelly? Why do you think so?

33

How a Fire Spreads Heat Transfer

Heat spreads through 3 methods:
Convection
Conduction or Radiation.



34

How a Fire Spreads Heat Transfer

Conduction

It is the transfer of heat from one body to another by **direct contact** of the two bodies or by an **intervening heat-conducting medium**.



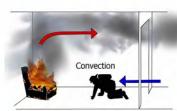
This is regarded as the slowest method for heat transfer

35

How a Fire Spreads Heat Transfer

Convection

Is the transfer of heat energy by the movement of heat **through fluids like air**, from the source of heat to a cooler part of the environment.



This is the most dangerous way a fire can spread through a structure since this method of heat transfer tends to dry and preheat fuels faster.

36

How a Fire Spreads Heat Transfer

Radiation

This is the transfer of heat by infrared radiation through exposure.

It is the least efficient method of heat transfer to fuels.



This allows fire to spread even without any contact

37

From Incipient To Decay

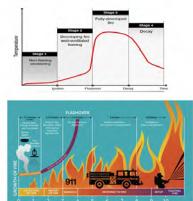
38

Stages of Fire Development From Incipient to Decay

When you are faced with a fire emergency, what you do within the first few minutes can mean the difference between potentially saving yourself, your loved ones, and your property or losing it all.

Fire Development is divided into four (4) Stages:

- Incident
- Growth
- Fully developed, and
- Decay



39

Stages of Fire Development From Incipient to Decay

Stage 1 Ignition (Incipient Stage)

The first stage begins when the three elements of fire are present in the correct ratio that a chemical reaction occurs to produce a flame

During this stage, a flame may not even be visible making it harder to identify that a fire is occurring at all



40

Stages of Fire Development From Incipient to Decay

Stage 2 Growth Stage

If the fire remains undisturbed and is allowed to continue it eventually enters the growth stage.

Speed of Growth is affected by

- availability of oxygen
- quantity and type of fuel
- proximity to the initial fire.



41

Stages of Fire Development From Incipient to Decay

Stage 3 Fully Developed

the fire has ignited all available fuel and is at maximum temperatures (700°-1200°C)

If you've failed to suppress the fire before this point, your chances of stopping the fire are much smaller

**Hardest to suppress**

42

Stages of Fire Development From Incipient to Decay

Stage 4 Decay

This stage occurs after the fully developed flame starts to run out of fuel or oxygen.

If no additional fuel or oxygen is introduced then the fire eventually goes out.



43

Scenario Based Activity I From Incipient To Decay

44

Questions:

1. What do you think will be the result if the fire is left alone to continue at this pace?
2. Would firefighters have been able to arrive on time to prevent major damage?
3. Could the damage have been prevented? Minimized?
4. Have you known any real events where firefighters arrived on scene with the structure fully engulfed in flames?

45

Effects of Destructive Fires

Destructive fires can happen anywhere and at any time, and if left unchecked, can have devastating effects on both life and property. The Philippines in particular, is still highly vulnerable to the effects of fire disasters

Physical Cost

Bodily Harm

Emotional Cost



46

Any experiences with Fire Emergencies?

47

What did we learn?

What is fire?

How important is fire?

What are the main characteristics of a fire? Elements?

What are the phases of development for a typical fire? contributing factors?

What are the potential impacts of fire on you?

How important is preparedness and social responsibility in fire safety?

48

Questions?

49

End of Subject

50

Chapter 3

Basic Leadership Training through Fire Safety

Fire-Classified



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 3...

Goal

For the young adults to appreciate the different classifications of combustible materials involved in the development of fire and to have an in-depth understanding of the common causes of accidental fires affecting the community.

Objectives

By the end of the session, participants should be able to:

1. Appreciate their accountability as an individual in fire safety and prevention;
2. Categorize fires according to their class (5) and the use of the right extinguishing agent; and
3. Identify the common causes of fire and the ways to prevent it.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Visual Examples
 - iv. 1. Multimedia Projector
 - iv. 2. PowerPoint Presentation
 - iv. 3. Hand-outs
 - iv. 4. Video Presentation

B. Alternative Tools

1. Powerpoint Presentation

Total Time of Delivery:

1.5 – 2 Hours

Cheat Sheet

Subject Overview

Purpose: To allow participants to see the different classifications of fire and ways to extinguish it. To enumerate to the participants the common causes of fires identified by the Bureau and let them analyze which among these causes are most likely to happen in their area.

General Guidance: The discussion of classes of fire, the lecturer should demonstrate through illustration how a material ignites with the different combustible materials. He should deliver this subject to catch the interest of the audience while encouraging them to ask questions. Likewise, common causes of fire involve reports of fire incidents in and out of the country, the lecturer must emphasize the cause of fire and how to prevent it. Increase the participants' interaction by asking them to identify recent fire incidents that they are familiar with and analyze what they think caused such incidents.

Things to Consider: This subject presents reports of fire incidents from the Directorate for Investigation and Intelligence (DII), during discussion, always consider/accept the answers of the participants about what they think caused the fire in such incidents. Interaction is very much encouraged in this lesson. On the other hand, the classes of fire lessons compare the US and the European standard system of classification. Some of your participants may have encountered the other standard system, discussing the difference between the two standard systems is necessary.

Subject Outline

Audio/ Visual Aids	Outline	Notes
	1. PREPARATORY	
 ppt cover	1. Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged. 2. Provide an overview of the session and capture participants' interest.	<i>Begin the session with a friendly greeting such as "Good [morning/afternoon] everyone! I hope you're feeling well today. Welcome to our session on Fire-Classified. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.</i>
		<i>Briefly introduce the topic: "Today, we will explore the different fire classifications."</i>

Cont...1

Audio/ Visual Aids

Outline

Notes

LG3-1

PPT S2-3

3. Present subject objectives.

It is important to understand the common causes of fire and its classes before we dwell on the prevention measures. Are you ready?"

LG3-1

PPT S4

2. PROMPT QUESTIONS

Read the ***Introduction and Damage to humans caused by humans*** in the Lecturer's Guide to connect with the following questions.

Check the participants the level of their accountability to fire prevention with the following question:

The lecturer may add questions to adapt to the community setting.

2.1 Did you look for a "fire exit" sign when you visited the mall last weekend?

2.2 Did you unplug the electric fan in your room when you left this morning?

2.3 Do you know what to do first when you see fire today?

LG3-1

PPT S5

3. MOTIVATION

3.1 Activity 1: "Know Your Safety" game.

3.1.1 Activate the five (5) groups from the first session.

3.1.2 Mechanics of the game on **Box A.1**

Invite participants to form a line according to their groups. "Now, before we start our lesson let us analyze your knowledge of the classes of fire."

INSTRUCTION:

One member from each group will hold the cardboard in front of the other players.

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
3.1.3 Give the game your own twist such as the holders of the placards will convince the players to give the true answer or lead them to be eliminated.	There are three (3) levels in this game, the players who choose the incorrect answer will be eliminated. Players who successfully reach Level 3 will receive a reward from the lecturers.	
4. LESSON PROPER		
4.1 Begin with a quick recap on the three elements of fire and the reaction of fire after eliminating one element. Then connect to the succeeding topic.	<i>The lecturer can ask 1 or 2 participants to recap the previous topic.</i>	
4.2 Enumerate and discuss the different classes of fire: <ul style="list-style-type: none">• Class "A" Fire• Class "B" Fire• Class "C" Fire• Class "D" Fire• Class "K" Fire	4.2.1 Do a quick recap of the recently discussed topic.	
4.3 Ask who among the participants is doing the following: <ul style="list-style-type: none">• Overload extension wires with connections• Smoking• Use phones while cooking	<i>Ask the participants to raise their hands or stand to answer each question. As they stand, play a video of a fire resulting from these causes.</i>	
<i>Note: These are the top three common fire causes in the Philippines.</i>		

Cont...2

Audio/ Visual Aids	Outline	Notes
 LG3-3 PPT S13	<p>4.4 Discuss the Classification of fire Incidents</p> <ul style="list-style-type: none">1. Act of God2. Accidental Fires3. Intentional Fires	<p><i>Flash random pictures of accidental causes of fire. Ask 1-2 participants to analyze what caused the fire and discuss with the group his/her analysis.</i></p>
 LG3-4 PPT S14-18	<p>4.5 Enumerate the 29 Common causes of fire</p> <p>4.5.1 Discuss the following accidental fires</p> <ul style="list-style-type: none">1. Electrical ignition caused by a loose connection2. Electrical ignition caused by overloading3. Electrical ignition due to pinched wire4. Electrical ignition caused by arcing5. Smoking (lighted cigarette, cigar, or pipe)6. Open flame from an unattended lighted candle7. Open flame from lamp (gasera) or torch (sulo)8. Open flame from rubbish fire/ bonfire to structural fire9. Open flame from rural/ agricultural land clearing (kaingin)10. Overheated home appliances11. Ignition caused by fireworks/ pyrotechnics12. LPG explosion caused by defective tanks13. LPG explosion caused by defective hose line14. LPG explosion caused by defective regulator15. LPG explosion caused by defective stove16. LPG explosion caused by static electricity or spark17. Children playing with matches or lighters18. Battery short circuit or battery explosion19. Ignition of material caused by welding slags	<p><i>This discussion is lengthy and must be discussed partially with suggested activities or ice breakers in between.</i></p> <p><i>For enhanced understanding on the topics, provide hand-outs to the participants indicating therein the description of the causes of fire, leaving important words blank. This method will motivate the participants to listen and watch out for the lecturer to mention the blanked word.</i></p>

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
	20. Ignition of materials caused by acetylene/ hot works 21. Sky lantern 22. Ignition of materials from ember/ flying ember or alipato 23. Overheated engine (motor vehicle)	
	4.5.2 Discuss the following intentional fires	<i>Flash random pictures of intentional causes of fire. Ask 1-2 participants to analyze what caused the fire and discuss with the group his/her analysis.</i>
	24. Intentional fire by use of open flame 25. Intentional fire by use of incendiary device 26. Intentional fire by use of flammable liquid	
PPT S19	4.5.3 Discuss the following Providential fires	<i>Flash random pictures of providential fires. Ask 1-2 participants to analyze what caused the fire and discuss with the group his/her analysis.</i>
	27. Fire caused by lightning 28. Dust explosion 29. Magnified/ focused sun rays	
	4.5.4 Discuss that these causes vary depending on the area, construction materials used, and the lifestyle of the people.	
	4.5.5 Ask the participants to analyze the cause of fire most likely to occur in their area and how they can prevent it.	

5. RECAPITULATION:

LG3-5

- 5.1 Summarize the lesson and provide a generalization of the things the participants have to remember.

Encourage participants to share their insights and lessons learned from the session.

5.2 Take away

Explain that knowing these common causes and classes of fire helps them understand that their area or activity may be a fire risk and that they can prevent the possible start of a fire.

Emphasize that knowing is only half the battle.

Cont...3

6. CLOSING EVALUATION:

PPT S20

6.1 Review the objectives by asking the questions;

- What are the classes of fire?
- What are the common causes of fire?
- What are the basic causes of fire?
- Are we now aware of the potential fire hazards of the materials in our homes/schools/workplaces?

6.2 Ask if there are questions or clarification

6.3 End the subject.

Conclude the session by expressing confidence in participants' abilities and continue studying the common causes of fire. Only by learning the causes can we prevent if not completely stop the occurrence of fire

Encourage the participants to share the knowledge with their families and communities.

Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer

FIRE-CLASSIFIED

Introduction [1/4]



source: <https://www.nsta.org/science-scope/science-scope-marchapril-2023/fire>

Fires have caused devastating damage to humans either economically, emotionally, or physically. We realized that regardless of our status in life, no one is completely safe from the dangers of fire. Intentional and accidental fires caused injury and death to citizens and firefighters alike. The need to determine its classes and causes will help reduce if not eliminate fire incidents per year.

Fire is a hazard that is always present in our daily lives and our activities increase the chances of fire from occurring. The first step in preventing fires is to learn more about how and why a fire starts, then we can develop procedures to prevent and extinguish fires.

Damage to humans, caused by human

Fires may break out without warning but that does not mean they happen out of nowhere. Many human activities generate enough heat to start fires which cause the loss of lives and properties. A single cigarette butt discarded carelessly can burn millions worth of properties. An unattended cooking can wipe out a whole barangay and can injure people. A mistake in the use of an extinguishing agent can cause serious damage to businesses of all sizes and some never fully recover from its effects.

Humans blame the fire for the havoc it brings to their lives because we can never argue that no one wins in a fire. However, it is also agreeable that the main cause of the fire is simply human negligence since there are plenty of ways that people can ignore dangerous situations.

Our Personal Accountability in Fire Prevention

Now, how do you respond to the call for a fire-safe nation? You know the importance of fire safety measures in the community because you have had regular fire exit drills since junior and senior high. You can't deny that you enjoyed the rush when the men in uniform sounded the alarm and you proceeded gleefully towards the open field together with your friends. But did you look for a "fire exit" sign when you visited the mall last weekend? Did you unplug that electric fan in your room when you left this morning? Do you know what to do first when you see fire today?

You see. You have a big part in the fire safety of your community. You have control over your premises and you can train your mind that in every emergency you have to save yourself from danger or you can prevent that danger from happening.

Activity: “Know Your Safety”

The mechanics follow the TV show game “Pera o Bayong” elimination round.

Materials Needed:

5 pcs. Cardboard size 12" by 12" or according to your preferred size (mark each cardboard with Class A, Class B, Class C, Class D, and Class K)

Objectives:

- For the participants to identify the classes of fire and its extinguishing agents.
- For the participants to learn that one mistake due to ignorance could lead to elimination (disaster).
- For the facilitators to assess the knowledge of the participants on the subject.

Mechanics:

1. Participants will compete in this elimination game of three levels. A word will be displayed (in a projector or in placards) and upon “go” signal from the facilitator, participants will line up on the option they choose.

LEVEL 1: combustible materials (choose which word or picture to flash either wood, cooking oil, methane, gasoline, or lithium)

LEVEL 2: extinguishing agent (choose which word or picture to flash either water, powder, foam, sand, or fire blanket)

LEVEL 3: fire extinguisher (choose which word or picture to flash either powder, foam, CO₂, water, or wet chemical)

2. At Level 1: if “wood” is displayed, the player must select “Class A” to proceed to Level
3. At Level 2: if “water” is displayed, the player must choose “Class A” to proceed to Level
3. Note: There are extinguishing agents applicable to several classes of fire, allow the participants
4. The game continues until Level 3.

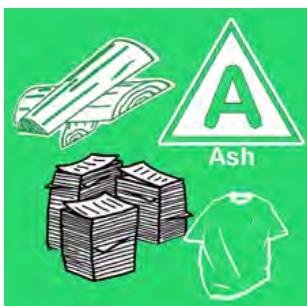
3.2 Classes of Fire [2/5]

The fire tetrahedron explains that four elements must be present for fire to occur: fuel, heat, oxygen, and a chemical reaction. But we can extinguish the fire by limiting or interrupting one or more essential elements in the combustion process such as cooling, starving, smothering, or inhibition.

If a fire starts, it can spread very quickly. Our initial reaction to fight the fire is always uncertain, setting aside the panic which is very natural to most of us. While each fire possesses unique characteristics, encompassing distinct hazards and risks, the use of the wrong type of fire extinguisher could do more harm than good. In this topic, one will be able to identify the different classes of fire and the extinguishing agent to be used for each class.

There are two popular standards used to define the different classes of fire. One is the ISO (International Organization for Standardization) and the other is the NFPA (National Fire Protection Association). The ISO is known as the European standard while NFPA is the US standard. The Bureau of Fire Protection follows the US standard system and it will be the coverage of our discussion, but we will diverge where the two standards differ from each other.

Class A Fires: Ordinary Combustibles



Ordinary combustibles are the sorts of materials that you will often find everywhere, from the wooden table in the dining room to the trash in the bin. These are typically slow-burning solid fuels and they generally leave behind **ASH** when they burn.

Examples of ordinary combustibles include:

- **Wood:** logs for fireplaces, furniture, and wood-building structures.
- **Paper:** such as the paper you might find in the trash and books on your bookshelf.
- **Plastic:** such as Tupperware containers, toys, and bags.
- **Cloth:** such as clothing and curtains.
- **Rubber:** such as the rubber found in shoes.

If you need to extinguish an ordinary combustible fire, cooling the fuel to below ignition temperature is the method to be used. It is possible to use most fire suppression techniques, including:

- **Water:** Such as water from a garden hose or tap.
- **Dry Chemicals:** ABC fire extinguishers usually contain dry chemicals.

- Other Methods:** Fire blankets can deprive a small fire of oxygen.

Because ordinary combustibles are so common in house fires, authorities recommend getting a fire extinguisher with at least an AB rating (Most common fire extinguishers are class ABC). Like fire sprinkler systems which are required for buildings, we must have at least a drum filled with water in our homes in the absence of fire extinguishers. It is vital to use the right fire extinguisher in putting out a small fire. Big fires should be left under the control of the Bureau of Fire Protection.

Class B Fires: Flammable Liquids and Gases

In the United States, all flammable liquids and gases are Class B. In Europe and Australia, flammable liquids are Class B, and flammable gasses are Class C. Flammable liquids and gases are commonly found in motor pools and industries dealing with fuels, lubricants, and certain types of paint. In addition, you might find other Class B flammables around your house, such as in your paint kit and alcohol cabinet.

Class B fires usually burn very quickly and can be hard to extinguish. This type of fire may **BUBBLE** and **BOIL** as it burns.

Flammable liquids include:

- Gasoline:** The gas (petrol) you put in your car fits this category. Diesel is part of this category.
- Most oils:** including the oil you put in your car and your chainsaw, car-bike chains.
- Most paints:** Oil-based paints are considered flammable liquids.
- Alcohol:** The spirits on your cocktail shelf are considered flammable liquids.

Flammable gases include:

- Hydrogen:** Commonly used in party balloons (to help them float above air) and as a fuel for some bus transport systems.
- Butane:** There's a good chance you'll find this in your cigarette lighter. It may be in your refrigerator as part of the cooling process.
- Methane:** Usually found in septic tanks and sewers.
- Ethylene:** The agriculture industry often uses it.

The best materials for extinguishing a Class B fire are:

- Halon** was in fire extinguishers until the 1990s when scientists found it was terrible for the Ozone layer.
- Dry Chemical Fire Extinguisher:** Your regular ABC household fire extinguisher is a dry chemical



Trivia:

The recent fire (August 2023) in Quezon City that killed 16 people in a residential house turned into a T-shirt printing business hub. The cloth and chemicals used for printing (paint) may have caused the fire to spread quickly. – [Philippine News Agency](#)

In May 2015, a fire at the Kentex factory in Valenzuela, Metro Manila killed 74 people. Welding sparks ignited chemicals stored in the area engulfing the whole factory manufacturing flip flops and other rubber shoes. – [ABS-CBN News](#)

extinguisher capable of fighting Class B fires.

- **Foam:** This can be effective for extinguishing liquid gas fires.

Smothering to remove the oxygen is a common solution as are the extinguishing agents for this type of fire. Water is not usually recommended for Class B fires as water can scatter and spread the liquid fuel. Further, some liquids float on water, meaning the water is not the best substance for separating the energy from an oxygen source.

Standard household ABC fire extinguishers can suppress flammable liquids and gases (check your extinguisher – most fire stations require an ABC extinguisher for your home).

Class C Fires: Electrical Equipment

In the United States, electrical equipment is considered Class C flammable material. Electrical appliances are considered Class K materials in Europe and Class E materials in Australia.

According to the Manila Bulletin, electrical ignition caused by arcing and electrical ignition caused by loose connections are the main reasons for the hike in the number of fire incidents in the first 4 months of 2023. This could be due to an increase in electricity demand during summer months that may be compromising the power lines.

Class C fires can cause electrocution; thus, the electrical equipment must be plugged in for it to be considered under this class of fire. If this type of fire occurs, the source of electricity must be shut off to avoid the continuous flow of **CURRENT** as the source of ignition.

Electrical equipment that commonly causes fire includes:

- **Mobile phones:** Overcharged mobile phones cause the battery to overheat and catch fire.
- **Clothes Dryers:** Clothes dryers can cause fires when not adequately maintained. Lint build-up acts like kindling for sparks, and poorly installed or maintained lint traps can cause problems.
- **Wiring and Cords:** Poorly installed wiring can cause sparks. Overloaded power banks can lead to short circuits and power surges.

The best materials for extinguishing electrical fires include:

- **Dry Chemical Extinguisher:** The ideal way to fight a small electrical fire is to use a dry chemical fire extinguisher, such as an ABC-rated household extinguisher.



DID YOU KNOW?

In January 2023, an iPhone 4 caught fire while charging overnight. A child in India was killed when Redmi Note 5 Pro reportedly blew up in her face. In July, a man's phone exploded on an Air India flight, causing an emergency landing. – PC Magazine

It is important to note that water is not very good at extinguishing electrical fires because it is an electrical conduit. However, it is notable that electricity does not burn – it is the spark and heat required to burn surrounding fuels. Therefore, the fire may resemble another fire class depending on the remaining materials once you remove the electrical source.

Class D Fires: Combustible Metals

Class D fires involve combustible metals as the fuel for the fire. The US, Europe, and Australia consider combustible metals as “Class D”. Metals are DENSE and cause DENT once hit with a hammer. This fire classification is very rare unless you work in a laboratory or in an industry that uses these materials. Special attention is required since they are very hard to extinguish.

Class D fires occur when the metal dust, flakes, and shavings generated during the manufacturing process ignite and spread. Extreme heat is usually required to ignite metal, but once a fire has been ignited, it develops and spreads very quickly making it incredibly dangerous and destructive.

Combustible metals include:

- **Sodium** is a highly reactive metal that can cause combustion when exposed to air or water.
- **Lithium**: Such as in laptops and intelligent phone batteries.

The best materials for extinguishing combustible metal fires include:

- **Dry powder**: Dry powder is not confused with dry chemical extinguishers. Dry powder extinguishers can extinguish Class D fires.

Combustible metals are less common in households and more common in industrial fires. Therefore, it is usual that fire stations will not mandate Class D extinguishers to be present at your home (check for your local circumstances).

A regular ABC fire extinguisher is not usually the best for fighting Class D fires. It may, in some instances, exacerbate the fire's intensity. For example, a scorching combustible metal fire may break water into hydrogen gas and oxygen, acting as reactants for spurring the fire.

Sand and soil may be used to extinguish small metal fires. Water is strictly not recommended as it can exacerbate the fire and can be potentially dangerous. Class D dry powder extinguishers absorb heat and smother the fire (separate the metal from oxygen sources).



DID YOU KNOW?

It took 10 hours before firefighters finally put out the fire that razed MV Diamond Highway, a vehicle carrier, off Lapu Lapu City, Cebu on April 2023. The fire started while the crew was cutting the vessel's scrap metals during salvage operation. - Manila Bulletin

Class K Fires: Cooking Fires Involving Oils and Fats



DID YOU KNOW?

Cooking was the leading cause of reported home fires and home fire injuries in 2017-2021 and the second leading cause of home fire deaths. - NFPA

Class K fires are fires that involve cooking oils and fats. In Europe and Australia, these are class F fires. This fire type is a concern in the food service and restaurant industry. Cooking oil spillages near the heat sources often result in **KITCHEN** fires.

Class K fires are technically a subclass of Class B flames since they involve flammable liquids. However, because of some unique characteristics related to this type of fire, it was designated separately and required a distinct battling method. This type of fire is often caused by cooking oils and fats that burst into flame on the stovetop, in the oven, or on the grill. There is also a risk of causing such a fire when these substances are overheated in the microwave.

Common materials in class K fires include:

- **Vegetable Oil:** Oils such as vegetable oil, canola oil, butter, etc., for cooking are in this category.
- **Animal Fat:** By-products of meat (carcass fat of cattle and pigs, lard), by-products of fish caught (fish oil)
- **Cooking Grease:** Grease can accumulate behind and undercooking appliances. Safety inspections of the industrial kitchen will often be checked to ensure no grease build-up, as it poses a severe fire risk.

Typical substances used to suppress fires include:

- **Water Mist:** Water is not the best for Class K fires, but misty water can be a good suppressant.
- **Foam:** Most Class K fire extinguishers use a substance that turns oils into foams.
- **Fire Suppression Blanket:** Fire blankets are regularly used in kitchens if the fire is small enough to be covered entirely by the mantle. The blanket will suffocate the fire by denying it access to oxygen.

Cooking fires escalate and spread quickly making it very difficult to manage. Water can make the situation worse. Many industrial kitchens, restaurants, etc., must have a Class K fire extinguisher and must follow the fire safety requirements when designing and equipping their kitchens, and ensure that all staff members are fully trained for a fire of any class.

In our houses, class K fires usually start in the kitchen. Having a properly rated fire extinguisher is important, and every member of the household should know the effective response to this type of fire.

POINTS TO PONDER:

To beat the enemy one must know the enemy right. Likewise, for fire. Fire is not a single-faceted enemy. It is a multi-faceted opponent; five faces to be precise.

HOW CAN I BE READY FOR THE 5 CLASSES OF FIRE?

1. Equip yourself with the right fire extinguisher.
2. Regularly attend fire safety training conducted by the Bureau of Fire Protection.
3. Keep all your equipment in good condition. Learn how to test and maintain your equipment action-ready or fire-ready.
4. Know the fire station near you. Save to your cellphones the emergency/hotline numbers of the fire station.

4.4 Discuss the Classification of Fire Incidents^[3/5]

To classify fires according to its origin or cause makes it easier for the authorities to identify the liable person for the damages. Fire is classified according to the following origin or cause as recognized by the Supreme Court.

1. Act of God or Providential Fires

These fires are caused solely by the forces of nature and without direct human intervention. They cannot be controlled or prevented by man, and there is no liability for loss if proved that the cause is of this event. Insurance companies often limit or exclude coverage for acts of God.

Green, Investopedia Examples: earthquake, typhoon, lightning, sun rays focused on glasses.

2. Accidental Fires

These fires are caused mostly by human negligence and human errors. These events happen by chance or as a result of an accident, and is not deliberately intended.

Collins Dictionary Examples: unattended candles, children playing matches, smoking in bed, leaving plugged electrical appliances like flat irons, air conditioning units, and defective LPG (Liquefied Petroleum Gas) containers.

3. Intentional Fires

These fires are those deliberately set on purpose, legally classified as arson or incendiary.

In the Philippines, the laws on arson in force today are Article 320 of the Revised Penal Code, as amended by R.A. 7659 (Destructive Arson) and P.D. 1613 (Simple Arson). The nature of Destructive Arson is distinguished from Simple Arson by the degree of perversity or viciousness of the criminal offender. The acts under Destructive Arson are characterized as heinous crimes while the acts in Simple Arson are of lesser degree of perversity and viciousness that the law punishes with a lesser penalty. *Luis B. Reyes, The Revised Penal Code Criminal Law Book Two*

Facilitator's Note [1/3]

Call 1-2 participants to cite recent fire incidents in the country and let them classify the fires according their own understanding.

Facilitator's Note [2/3]

Discussion of this topic may be technical for the participants' understanding which may cause boredom and loss of interest in the subject. The lecturer is advised to use layman's language and provide visuals as much as possible. The purpose is to make the participants understand that these causes of fire are usually taken for granted making it more dangerous. Impose that if they observe similar problems in their homes or workplaces, they should immediately call/consult a professional.

To establish active participation, the lecturer may flash pictures, i.e., burning appliances, grassfire and ask the participants what they think caused the fire. Accept 1-2 answers to stimulate the mood of the participants. The objective is for the participants to analyze the possible cause of ignition by determining the combustible materials present and the prevailing factors resulting in fire.

► Destructive Arson contemplates malicious burning of structures, both public and private, hotels, buildings, edifices, trains, vessels, aircraft, factories and other military, government or commercial establishments by any person or group of persons. On the other hand, Simple Arson covers houses, dwellings, government building, farms, mills, plantations, railways, bus stations, airports, wharves and other industrial establishments. *Luis B. Reyes, The Revised Penal Code Criminal Law Book Two*

4.5 Common Causes of Fire^[4/5]

The saying “prevention is better than cure” is vital, especially in fighting fire. To be able to learn the common causes of fire and the ways to prevent them from happening can save you from impending danger.

In this lesson, we will discuss the 29 common causes of fire incidents in the country based on the reports from the Directorate for Investigation and Intelligence of the Bureau of Fire Protection. These causes are arranged according to the basic causes of fire, which will be re-discussed at the end of this lesson.

Identify which among these enumerated are common in your area and recognize the ways to prevent the occurrence of fire.

The succeeding discussion is caused by accidental fires. **Accidental fires** involve all those for which the proven cause does not involve a deliberate human act to ignite or spread a fire into an area where the fire should not be. In most cases, this classification will be clear, but some deliberately ignited fires can still be accidental (*NFPA 921*).

Electrical ignition

Electricity has brought comfort to our lives, but we take for

granted the dangers it can bring if we are too negligent in our activities. Reports revealed that faulty electrical wiring is one of the top causes of fire in the Philippines. There are a variety of considerable possibilities that electricity flowing through appliances and installations can cause a fire. It is essential to hire a professional to check the safety of your electricity use, in your home or office.

The following disregarded electrical issues at home caused ignition and resulted in unforgettable lessons for humans. Chances of occurrence in your area vary depending on the lifestyle of the people and the electrical appliances used.

• Electrical ignition caused by loose connection

Over time, the use of plugs and sockets can wear down the connection between the pins of the plug and the contacts of the socket (commonly known as power points). This can result in a loose connection that can cause electrical arcing which may result in a fire. *Worksafe, How to identify loose connections*



Fig. shows an Electrical ignition caused by loose connection

DO THIS:

Keep an eye on the plugs and sockets in your home. How long have they been there? Can I plug all kinds of appliances into any socket? Is my house designed for the number of appliances we use?

• Electrical ignition caused by overloading

Overloaded outlets and circuits carry too much electricity, which generates heat in undetectable amounts. The heat causes wear on the internal wiring system and can ignite a fire. All wiring systems have circuit breakers or fuses that disconnect power when circuits become overloaded. However, an improperly sized fuse or breaker can cancel this built-in safety feature. *Schwab, Charles, NASD, Reduce fire with electrical safety*



DO THIS:

Never plug more than two appliances into an outlet at once or "piggyback" extra appliances on extension cords or wall outlets. Use only outlets designed to handle multiple plugs. - NASD

• Electrical ignition due to pinched wire

One of the most common causes of cable wire fires is when

DO THIS:

It's crucial to know how your cables are routed and clear them from any sharp edges or excess heat. - SureLock Technology

they become damaged, whether it's from being pinched or rubbed against another object. It can cause the insulation around the wires to wear away, exposing them to potential sparks or fire. *Surelock Technology, Can bad cabling start fires in the workplace?*



DO THIS:

If you hear a buzzing sound, call an electrician immediately. – Ace Electric Ohio

Activity/Ice Breaker

SUGGESTED ACTIVITY:

Allow participants to stand and count from 50 backward.

ICE BREAKER: Freestyle

• Electrical ignition caused by arcing

Electrical arcing is when electricity jumps from one connection to another. At times you hear electric switches producing a sizzling/ cracking sound. Typically, this happens when you turn them either on or off. This is known as arcing and could be a result of two things. It could be caused by a damaged cable causing the popping sound or an arc flaw. If the cause is a damaged wire, the wiring cannot endure the current flowing, which is why the arcing takes place. Ace Electric Ohio, What is electrical arcing?

Smoking(lighted cigarette, cigar, or pipe)

Cigarette and smoking-related fires are among the top causes of fire-related fatalities. These fires often involve the ignition of mattresses, bedding, upholstered furniture, or trash by improperly discarded cigarettes, ashes, or matches. *The Hartford Insurance, Smoking fires*

Do not smoke in bed, when you're tired, or when you're taking medication that can make you drowsy, or after consuming alcohol. Use a large and heavy ashtray placed on a flat stable amenity.

Open Flame

Open flame means a fire that can sustain itself. This includes flame-producing devices capable of igniting ordinary combustibles such as candles, torches, and grills. Safety practice is necessary when using these devices avoiding intimidating, dangerous, or harmful actions.

• Open flame from an unattended lighted candle

The risks associated with unattended candles are



Fig. shows flame from an unattended lighted candle

significant and should not be overlooked. Fire is a primary concern, as the heat from a burning candle can easily ignite nearby flammable materials, leading to a rapid spread of flames and potential property damage. Additionally, the release of toxic substances, such as carbon monoxide, can pose serious health hazards, causing respiratory problems and other adverse effects. Moreover, the heat generated by a burning candle can cause the jar to become too hot, potentially leading to its breakage or explosion.

Twistavants, Candle Safety tips: The danger of unattended candles

Some households resorted to using candles to light up their homes during power outages, some mainly depend on it to light up their homes during the night. If unattended, this act can cause a series of fire incidents.

To prevent this, lit candles should be placed in a container with water and away from combustible materials. Never burn a candle unattended for your safety and the safety of your family.

- **Open flame from lamp (gasera) or torch (sulo)**

The use of lamps or torches to light up houses remains a practice in the Philippines since electricity can be expensive and not affordable. It is commonly used in rural and slum residential areas as an alternative to electricity. Like candles, unattended kerosene lamps placed near flammable or combustible material is a fire waiting to happen.

It is important to blow out the fire before leaving and make sure they are far from combustible materials and away from children or pets.

- **Open flame from rubbish fire/ bonfire to structural fire**

Burning of household garbage is a common practice of disposing the garbage, particularly in rural areas. This, however, is considered a health hazard and a contributor to air pollution. DENR holds to its directive under the Ecological Solid Waste Management Act or R.A. 9003 and the R.A. 8749 or the Clean Air Act providing that open burning is illegal and may result in fire causing loss of lives and property. If a garbage fire is near a building, it can spread to the structure which may harm, not just the property but also the passersby.

To prevent the spread of fire in this act, segregate your garbage and have the garbage collectors in your area dispose of it properly.



Fig. shows flame from rubbish fire



Fig. shows flame from kaingin

- Open flame from rural/ agricultural land clearing (kaingin)

Shifting cultivation or slash-and-burn farming in the Philippines is widely referred to as “kaingin”. This is a farming technique wherein a land, particularly mountainous and forested land, is cleared for cultivation by fire and then abandoned to regenerate after a few years

In kaingin, soil erosion and nutrient losses are apparent. In addition, uncontrolled burning causes widespread forest fires.

It is illegal under the Forestry Reform Code of the Philippines of 1975 (PD 705) because forest fires destroy flora and fauna habitats causing a great impact on climate change.

Immediately report to the proper authorities once you see this kind of activity in your area.



Fig. shows overheated home appliances

Overheated home appliances

Electric fans are usually overused especially during the summer season. This is one example of an overheated appliance that can catch on fire because of the extreme heat inside. Once it ignites the flammable components, the appliance will be destroyed and the fire can cause severe property damage.

Check your appliances now and then, and give them time to cool down. When the appliance is overused, there is a possibility that it will overheat, do not ignore these signs and give them a rest, this could prevent overheating and extend their lifespan.

Activity/Ice Breaker

SUGGESTED ACTIVITY:
Ask everyone to stand up and provide questions for the lecturer to answer (questions should be lesson-related). The participant who asked the question can have his/her group be seated. Other participants/group who has no answer shall remain standing even after the break ends.

ICE BREAKER: Freestyle

Ignition caused by fireworks/ pyrotechnics

An article posted by CPD Online College states that fireworks are dangerous because they are fast and made from combustible, explosive materials. *Vicky Miller, CPD Online UK, Firework Safety*

A rocket, for example, can reach a speed of 150 miles an hour. *NASA Science, Nature's fireworks show in August* Fireworks cannot only injure, but they also pose a risk of accidentally starting a fire. In the Philippines, an increase in the number of fires caused by firecrackers or fireworks was recorded during the Christmas and New Year seasons.

Fireworks are composed of combustible materials combined with high levels of heat and unpredictable sparks. These sparks can ignite flammable materials if used in an unsafe location.

There are ways to celebrate the holiday season without endangering the lives and properties of your families.

One is to watch fireworks displays organized by the local government units and the other is to use improvised non-hazardous noisemakers like the local torotot, maracas fashioned out of empty cans, pot covers as improvised cymbals, and honking car horns, to enumerate a few.

LPG explosion

An LPG explosion is almost always caused by the accumulated gas leak in large amounts in a closed space. When the gas reaches an ignition source, it can burn or explode since LPG possesses flammable and explosive properties. When a gas leak or LPG explosion occurs, the gas bottles are not even involved, so the leak can be from the gas appliance or another source.

If there is a problem with an appliance or fitting, within the house, leaking gas can accumulate, causing a potential gas leak explosion. Regardless of the type of gas, the results would be the same. This is one reason why you should have regular maintenance on gas appliances to avoid risks, from fire and explosion to health hazards.



•LPG explosion caused by defective tanks

According to the LPG Industry Association Inc. (LPGIA), most LPG-related fires and explosions in the Philippines involve illegally refilled LPG tanks and substandard, and dangerous LPG cylinders. Republic Act 11592 is a warning to the public that there is a hazard in purchasing and using illegally refilled LPG cylinders. *Cristina Eloisa Baclig, Inquirer.net, Consumer warned vs illegal gas tanks*

Be sure to only buy gas cylinders from reputable suppliers. Five out of ten tanks of LPG in the market are defective and substandard. *BFP and LPGIA records as quoted by Philstar* You should check the tanks you are buying if there are leaking valves, dents, rust, and improper painting.

•LPG explosion caused by defective hose line

Defective hose lines cause leakage and the accumulated gas usually results in fire incidents. To prevent this kind of fire, use only hose lines that are recommended by the service provider. *Beyond Carlton, What are the potential fire hazards from an LPG?* The hose line must be regularly cleaned from grease and dirt, this is also a way to check for leakage. Always practice shutting off the cylinder when you leave the house even for a short duration to prevent accidents.

•LPG explosion caused by defective regulator

Gas leak is one to be associated with a defective regulator. Another sign is if the burner does not produce a blue flame, but a yellow or orange flame, a defective regulator must be blamed. *Western Water and Gas Products Ltd, How to tell if propane regulator is bad: 9 major signs* Gas leakage is a serious problem that can occur if the LPG regulator is damaged or has worn out over time.

GasNtools, Medium, Common problems with an LPG regulator and how to fix them We have learned that gas leakage can lead to a fire or explosion, so it is essential to address this issue immediately. If you smell gas like a rotten egg or suspect a leak, turn off the gas supply and call a professional technician to fix the problem. The best action is to get a new regulator.

•LPG explosion caused by defective stove

Almost every home depends on stoves, gas ranges, and ovens in their cooking *Energy saver, What to consider when purchasing a range, oven, or stove* but very few regard the safe manufacturing designs and functionality of these modern kitchen ranges. Many stoves do not meet the standards for safety because of defects in manufacturing and design. *Jacoby & Meyers Law Offices, Defective Ovens/Stoves/Ranges* In addition, if a stove is not maintained properly, it increases the chances of fire and explosion. Gas build-up from leakage, either coming from the knobs or one of the connections inside the stove system, combined with igniting materials, the gas explodes. Start paying attention to your stoves, observe any unusual sounds or smells, and continue proper maintenance to prevent any danger from occurring. To avoid problems from occurring, ask a professional to check the safety of your stoves.

•LPG explosion caused by static electricity or spark

Static electricity is a phenomena *Sebastian Deffner, The Conversation, Static electricity's tiny sparks* between surfaces in contact with each other resulting in an imbalance in positive and negative charges. *Library of Congress, How does static electricity work?* Static electricity can be extremely dangerous *Stuart Flatow, LPGas Magazine, Snuffing the static electricity spark* and can cause sparks capable of igniting a flammable gas like LPG. The smallest static spark we can see or feel (about 3,000 volts) has double the energy required to ignite propane. In other words, static electricity is a potentially invisible source of ignition. Friction caused by wind blowing over plastics and other conductive materials can result in those materials carrying an electrical charge. *Stuart Flatow, LPGas Magazine, Snuffing the static electricity spark* The chances of hazard caused by static

electricity may be relatively small but the severity can be catastrophic. *Odd Dog, Wirecraft Electric, Static electricity, its dangers and how to prevent them* It is necessary to remove combustible materials near your cooking area and maintain cleanliness.

Children playing with matches or lighters

Children are naturally curious, and it is typical for them to want to explore, but fire is dangerous. *FDNY Smart, Don't play with matches* or fire Children playing with matches and lighters start fires. Fires started by children playing are alarming as they cause injury and death to these children alone. Note that most fires caused by children playing with lighters and matches begin in bedrooms or any hidden place. FDNY Fire Safety Education, Are your children playing with fire?

Never allow children to play with matches or lighters. Place the matches and lighters in high cabinets out of reach of children. Teach them about safe uses of fire like cooking or allow them to light birthday candles on a cake (under adult supervision). Teach them to report when they see matches or lighters and reward them when they do.



Fig. shows children playing with matches



Fig. shows a battery explosion

Battery short circuit or battery explosion

A short circuit produces inconsiderable damage to the battery if sustained for a long time. The worst-case scenario is that the battery may catch or start a fire or explode. Electrical Engineering Stack Exchange, What does it take to short a battery London Fire Brigade revealed that batteries, when used properly, are not dangerous. But it is a fire risk when overcharged, submerged in water, or damaged. London Fire Brigade, Chargers, batteries and fire safety

Lithium-ion batteries are a necessity in this modern world, with the batteries as the backbone of most modern technology, from everyday household electronics such as laptops, mobile phones and tablets, to large-scale energy storage systems and electric vehicles. Fire Protection Association, Why do lithium-ion batteries catch fire? Lithium-ion batteries are a fire risk when discarded improperly resulting in rubbish fires, or mixed with recyclable materials like paper, metal, and plastic. They are also sensitive to high temperatures and inherently flammable. Lancashire Fire and Rescue Services, Lithium batteries

Use and discard your batteries properly. Store spare lithium-ion batteries away from anything that can burn. Do not put lithium-ion batteries in direct sunlight or keep them in hot cars.

Activity/Ice Breaker

SUGGESTED ACTIVITY:
Free Style

ICE BREAKER: Freestyle



Fig. shows welding slags

Ignition of material caused by welding slags

Slag refers to the drops of molten metal created when a

welding torch flame heats the metal to the appropriate temperature. Often, those drops of metal fall to the

However, in other set-ups, these hot drops of metal can end up dripping onto more flammable materials or drop into cracks in the floor. This is a big problem if working in an area with wooden flooring, and these hot drops of metal pass through cracks and holes. Hot slag could settle there and maintain enough heat to ignite the wood and any other combustible dust or sawdust within. *Firefighter now, Can welding cause fires?*

Remember that it is easier to control the condition of your workshop than to control the direction of the spark. One of the best options is to take your work outside away from enclosed spaces and flammable materials. *Firefighter now, Can welding cause fires?*



Fig. showing hot works

Ignition of material caused by acetylene/ hot works

Hot work is usually defined as any open flame, spark, or heat-producing activity and is typically associated with cutting, welding, grinding, and brazing operations as part of maintenance or construction works. *Alex Minett, CHAS, A guide to hot work hazards and control measures* Hot work can generate sparks, molten material, and other ignition sources well away from the area of work. In addition, conducted heat can cause ignition of combustible materials both locally and remotely. *HSB, Fire caused by hot work*

Acetylene is a colorless flammable gas used as a fuel for repair work and general cutting and welding. *Air source industries, 8 interesting uses for acetylene* It is an extremely flammable gas and can form an explosive atmosphere in the presence of air or oxygen. *HSE, Safe use of acetylene*

A Hot Work Permit is required by the Bureau of Fire Protection to authorize individuals, hot work operators, and fire watch to recognize potential hazards.

One process to reduce hot work hazards is covered in NFPA 51B and focuses on the following:

- **Recognize** – determine if fire risks exist before hot work is started.
- **Evaluate** – determine if hazards are present, especially hazards that could fuel a fire.
- **Control** – take appropriate steps to eliminate or minimize the hazards.

Sky lantern

Sky lanterns have become increasingly popular as a way to celebrate. However, they pose a serious fire safety hazard and their use is prohibited by National Fire Protection Association code requirements.



Fig. shows burning sky lantern

The lanterns are made of oiled rice paper with a bamboo frame, materials using a candle or wax fuel that can easily catch on fire. A flaming lantern can drop onto a rooftop, field, trees, or power lines before the flame is fully extinguished. NFPA, Sky lanterns safety

Paper sky lanterns are prohibited in the Philippines because they cannot be controlled once it is out in the air. For this reason, sky lanterns should not be used under any circumstances.

Ignition of materials from ember/ flying ember or alipato

Embers, also known as firebrands, pose the greatest threat to a home. These fiery little pieces of wood shoot off from the main fire and get carried to other areas by fast-moving air currents. A high-intensity fire can produce a virtual blizzard of embers. Some can travel more than a mile before landing. They can get into the smallest places and easily start a fire that can burn down an entire home. *Texas Forest Service, Be embers aware*

Embers can cause forest fires to spread not only quickly but also unpredictably. *Robert Ferrell, WSRB, Embers, Wind and Fire: A Dangerous Mix* The intense dry weather season in the Philippines caused an unbelievable increase in grassfires and forest fire incidents in many parts of the island. The frequency of grassfires and forest fires is normally caused by land clearing, unattended bonfires, and lit cigarettes.

Burning fields should not be left unattended and farmers must make sure that the fire would not spread to other areas. If you live near a grassland or forested area, be sure to put a fire line and stock water to extinguish the fire. Immediately report to the proper authorities ongoing fires in your area.

Overheated engine (motor vehicle)

An overheated engine may not necessarily burst into flames on its own, but it has the potential to induce other combustible components, such as oil, to spread and catch fire. *Roar Engineering, Which hazards present the greatest risk for a fire in a modern vehicle?* It most commonly happens during summertime, but it is possible any time of year.

The best way to prevent overheating is to keep up with your regular maintenance schedule. *Firestone, What to do (& not do) when your car overheats* Regular oil changes help keep your engine at peak performance and prevent overheating. Neglecting these can result in subpar performance, vehicle damage, and compromised safety. *Strickland Brothers, the role of oil in engine cooling* Several minutes of rest during a long drive is very helpful both for the driver and for the motor vehicle.



Fig. shows flying ember



Fig. shows overheated engine

Activity/Ice Breaker

SUGGESTED ACTIVITY:

Freestyle

ICE BREAKER: Question:

If you are a fire ember, where will you land? Why? Answers could be serious or in the form of a joke. Regardless, let the participants explain their answers.



Fig. shows an intention to set a fire

Intentional fires

Intentional fires are those fires that are deliberately set and include fires that result from deliberate misuse of a heat source or fires of an incendiary nature (arson). *FEMA, Topical Fire Report Series, Intentionally set fires* Professional arsonists will often set multiple ignition points connected by a fire-spreading trailer such as a flammable liquid, smokeless gunpowder, rags, twisted ropes or newspaper, waxed paper, or even fabric softener strips. *Interfire, Incendiary fire basics*

There are actually two categories of arson in the Philippines: Destructive Arson under Article 320 of the R.P.C. and Simple Arson under P.D. 1613. Said classification is based on the kind, character and location of the property burned, regardless of the value of the damage caused. The nature of Destructive Arson is distinguished from Simple Arson by the degree of perversity or viciousness of the criminal offender. Destructive Arson also has harsher penalty than Simple Arson.

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- **Intentional fire by use of incendiary device**

“Incendiary device” means any material, substance, device, or combination thereof which is capable of supplying the initial ignition and/or fuel for a fire and is designed to be used as an instrument of willful destruction. *Washington State Legislature, Incendiary devices - definition*

Examples of incendiary devices are electrical devices which may include a specially prepared light bulb, an altered fuse or circuit breaker, or wires connecting an automobile’s side marker lights to the filler tube on the gas tank. For mechanical devices, arsonists may use a wind-up alarm clock as a motor or may involve placing a lit cigarette between the matches and the cover of an ordinary matchbook. Many chemical devices are also used. *EA Pelletier et.al, US Department of Justice Office of Justice Programs, Incendiary devices*

- **Intentional fire by use of flammable liquid**

Arsonists often pour accelerants over the areas they want to burn to ensure that their fires spread as much as possible to maximize damage and destruction. *Interfire, Incendiary fire basics*

Gasoline is one of the most commonly used accelerants because it's efficient and easily ignited and because it

can usually be bought and transported without arousing suspicion. The next most common fuels are paint thinners and light kerosenes. Moderate amounts can be purchased without arousing suspicion because there are legitimate uses for these fuels in private homes. *Interfire, Incendiary fire basics*

• Intentional fire by use of open flame

Arsonists use open flame because it is easy to create, apply, and eliminate as evidence. It is also a definite means of starting a fire because it's a fire already and requires only propagation. Whatever is left at the scene (like a burnt match) it is assumed will likely be destroyed. Another source of flame is an altered gas pilot light assembly or broken gas line set to throw a blowtorch-like flame. *Interfire, Incendiary fire basics*

Intentional fires are determined by fire and arson investigators. They examine, identify, and collect physical evidence from the fire scene which will be analyzed in fire arson laboratory to determine if the cause of fire was accidental or deliberate.

TRIVIA

Presidential Decree No. 1613 imposes a penalty of Prision Mayor to any person who burns or sets fire to the property of another. This applies when the person sets fire to his own property which expose to danger the life or property of another.

R.A. 7659 imposes a harsher penalty or Reclusion Temporal to Reclusion Perpetua if the property burned is a government property establishment and those enumerated under the law. If death should result as a consequence of Destructive Arson, the mandatory penalty of death shall be imposed. However, pursuant to R.A. 9346 which prohibited the imposition of death penalty, the penalty of death is now downgraded to reclusion perpetua with no eligibility for parole.

Fire caused by lightning

Lightning is the major cause of natural wildfires worldwide. These fires, ignited by lightning strikes, can quickly spread depending on weather conditions and the availability of fuel, releasing substantial amounts of carbon, nitrogen oxides, and other trace gases into the atmosphere. *Francisco J.Perez-Invernón, Earth & Environmental Sciences, Changes in patterns of wildfires caused by lightning strikes due to climate change* Lightning is one of the deadliest and most unpredictable weather phenomena. Meteorologists can forecast the general conditions that cause lightning but no one can predict exactly when or where lightning will strike. *Rebecca Barry, News4Jax, Lightning is unpredictable, deadly* Because of this, no one can guarantee an individual

or group absolute protection from lightning. However, every individual must learn lightning safety guidelines that can reduce the risk of injury or death. Remember, **YOU** are ultimately responsible for your personal safety. *National Oceanic and Atmospheric Administration, Lightning Safety*

Dust explosion

Dust explosions are the result of high concentrations of combustible dust particles rapidly combusting inside an enclosed space. When mixed with oxygen, these fine particles can be ignited when coming into contact with a spark, metal ember, cigarette butt, or other ignition source.

Nederman, What is combustible dust, and how does it lead to dust explosions?



Fig. shows a burning area caused by lightning

Accumulated

dust can pose a fire hazard. Dust is flammable and a fire can start from a spark of energy or an extremely hot surface. The more dust builds up there is, the more chances there are for a fire to happen. *Dust Doctors, Dusty vents are a fire hazard*

One of the most important steps in dust explosion prevention is cleaning. Dust explosions cannot happen if there is no dust to explode. To remove combustible dust from your homes or workplaces, identify hidden and obstructed areas *Powder Process Solution, 8 Proven safety measures to prevent dust explosions* where dust is most likely to build up. In cleaning, your cleaning method must not encourage the dispersion of dust clouds. You must not use compressed air, fans, or brooms as these cleaners only help disperse clouds of dust to other areas of your house. Powder Process Solution, 8 Proven safety measures to prevent dust explosions

Magnified/ focused sun rays

It might not be obvious the risks that come from glass, mirrors, and other reflective items, but when the rays are focused through another medium, the sun's energy can

become concentrated enough to reach the combustion threshold. There are reports of fires started from glass tables, crystal door handles, and mirrors. *Imist, Fire hazards in the home: glass & sunlight* This is a risk all year round and not just in the summer.

Glass and crystal ornaments and other items, such as mirrored tables, should never be placed in direct sunlight. Even a glass fish tank, or an object such as a water bottle, could start a fire if left in the wrong place near flammable materials. *Home & Legacy, Low winter sun – a real fire risk*

CONCLUSION

Understanding the common causes of fire and how to prevent it reduces the risk of injury and death to individuals, including the damage to properties that fires can cause. It is important that you as a person recognize that you are a part of the circle. You are responsible for your safety and the safety of the people around you. You cannot provide safety to others if you do not know how to be safe.

Some of the discussed common causes of fires may be new to you, but you are aware that there are also one or two mentioned that are familiar to you. Identify these causes and mention them to the class. Do you think your area is at fire risk with those you enumerated? Why? Explain to the class. Now, that you have identified the causes, do not forget the prevention and safety measures you have learned.



Fig. shows a focused sun ray that starts a fire

SUMMARY [5/5]

Fire has been beneficial to humans throughout the ages. Yet it has also proven its detrimental effects which caused the lives of many. In this lesson, you have learned that no one can eliminate a destructive event regardless of how we avoid it. However, preparedness can significantly reduce the extent of damage and prevent the start of another.

The idea that one will always be fire-safe could only lead to disaster. You have learned that fire could break anytime and anyone could be the next victim. Being prepared is never a stressful task for anyone. Like the quote: Learning is a never-ending journey, you have to continue obtaining new learnings on how to be safe and how to save others. Like spreading gossip to your friends, spread fire safety awareness, so that more people will be prepared. You can prevent the possible start of a fire.

The classes and causes of fire are just appetizers for your safety. There are still more interesting lessons and

Facilitator's Note [3/3]

Review the objectives by asking the following questions:

1. What are the classes of fire?
2. What are the common causes of fire?
3. What are the basic causes of fire?
4. Are you aware now of the potential fire hazards of the materials in your homes? In your schools? In your workplace?

▶ applicable skills for you. So, continue opening the pages and increase your awareness.

References

Bureau of Fire Protection (2019) Handbook for Oplan Ligtas na Paaralan Safe Schools Initiative. BFP National Headquarters

Bureau of Fire Protection (2017) Handbook Guide for Fire Safety and Prevention Seminar. BFP National Headquarters

Bureau of Fire Protection (Revised 2023) Revised Comprehensive Implementing Guidebook for Oplan Ligtas na Pamayanan. BFP National Headquarters

Reyes, LB, The Revised Penal Code Criminal Law Book Two, Nineteenth Edition, 2017

<https://batasnatin.com/law-library/civil-law/obligations-and-contracts/2340-act-of-god-fortuitous-event.html>

<https://www.facebook.com/516295138863890/posts/ccriminology-review-phfire-technology-and-arson-investigationcdi-definition-of-t/640363849790351/>

<https://www.investopedia.com/terms/a/act-god.asp>

<https://www.collinsdictionary.com/dictionary/english/accidental-fire>

<https://www.worksafe.govt.nz/about-us/campaigns/gas-and-electricity-safety-winter/how-to-identify-loose-connections>, last updated July 9, 2020

<https://nasdonline.org/1249/d001053/reduce-fires-with-electrical-safety.html> Schwab, Charles, January 1992

<https://surelocktechnology.com/can-bad-cabling-start-fires-in-the-workplace/> February 11, 2022

<https://www.acelectricohio.com/what-is-electrical-arching/> November 30, 2020

<https://www.thehartford.com/about-us/junior-fire-marshall/smoking-fires>

<https://www.twistavants.com/blogs/candle-care/candle-safety-tips> last updated Oct. 25, 2023

<https://cpdonline.co.uk/knowledge-base/health-and-safety/firework-safety/> January 27, 2022

<https://science.nasa.gov/science-research/planetary-science/natures-fireworks-show-in-august/> August 10, 2018

<https://newsinfo.inquirer.net/1714829/for-posting-edited-consumers-warned-vs-illegal-gas-tanks> Cristina Eloisa Baclig, January 10, 2023

<https://www.philstar.com/headlines/2011/03/11/664713/5-10-lpg-tanks-defective-bfp>
Cecille Suerte Felipe, March 11, 2011

<https://www.beyondcarlton.org/potential-fire-hazards-lpg-gas-leak/>

<https://wngp.com/blogs/news/signs-of-bad-propane-regulator#:~:text=Yellow%20or%20Orange%20Flame&text=If%20you%20notice%20a%20yellow,caused%20by%20a%20faulty%20regulator>. June 7, 2023

<https://medium.com/@gasntoolsdigitalm/common-problems-with-an-lpg-regulator-and-how-to-fix-them-a08faf96caf7> GasNtools, May 8, 2023

<https://jacobymeyers.com/defective-ovensstovesranges.html>

<https://www.loc.gov/everyday-mysteries/physics/item/how-does-static-electricity-work#:~:text=Static%20electricity%20is%20the%20result,them%20is%20through%20a%20circuit>. Science Reference Section, November 19, 2019

<https://www.wirece.com/dangers-static-electricity-prevent/> Odd Dog, July 1, 2018

<https://www.fdnysmart.org/safetytips/dont-play-matches-fire/>

https://www.nyc.gov/assets/fdny/downloads/pdf/fire-safety-education/13_keeping_children_fire_safe_english.pdf

<https://electronics.stackexchange.com/questions/499980/what-does-it-take-to-short-a-battery#:~:text=A%20short%20circuit%20usually%20produces,the%20load%20start%20a%20fire>. May 18, 2020

<https://www.london-fire.gov.uk/safety/the-home/electrical-items/batteries-and-chargers/>

<https://www.thefpa.co.uk/advice-and-guidance/advice-and-guidance-articles/why-do-lithium-ion-batteries-catch-fire#:~:text=Lithium%2Dion%20battery%20cells%20combine,in%20a%20fire%20or%20explosion> July 10, 2023.

<https://www.lancsfirerescue.org.uk/safety/safety-advice/lithium-batteries/#:~:text=They%20are%20a%20main%20cause,high%20temperatures%20and%20inherently%20flammable>.

<https://firefighternow.com/can-welding-cause-fires/>

<https://www.chas.co.uk/blog/guide-hot-work-hazards-control-measures/#:~:text=Hot%20work%20refers%20to%20any,that%20generate%20heat%20or%20sparks>. Alex Minett, Sept 4, 2020

<https://www.munichre.com/hsbeil/en/insights/guides-to-loss-prevention1/construction-guides-to-loss-prevention/fire-caused-by-hot-work---guide-to-loss-prevention.html#:~:text=Hot%20work%20can%20generate%20sparks,of%20work%20should%20be%20investigated>.

<https://www.hse.gov.uk/fireandexplosion/acetylene.htm#:~:text=Acetylene%20is%20an%20extremely%20flammable,presence%20of%20air%20or%20oxygen>.

[https://air-source.com/blog/tag/acetylene/#:~:text=Acetylene%20is%20a%20colorless%2C%20flammable,carbide%20\(CaC2\)%20in%20water](https://air-source.com/blog/tag/acetylene/#:~:text=Acetylene%20is%20a%20colorless%2C%20flammable,carbide%20(CaC2)%20in%20water).

<https://www.nfpa.org/-/media/Files/Code-or-topic-fact-sheets/HotWorkFactSheet.pdf>

<https://www7.mississauga.ca/documents/fire/2016/SkyLaternsSafetyTipsNFPA.pdf>

https://tfsweb.tamu.edu/uploadedFiles/TFSMain/Preparing_for_Wildfires/Prepare_Your_Home_for_Wildfires/Contact_Us/EDITED%20memberswed.pdf

<https://www1.wsrb.com/blog/embers-wind-and-fire-a-dangerous-mix>

94 MODULE 5 Basic Leadership Training through Fire Safety

<https://roarengineering.com/which-hazards-present-the-greatest-risk-for-a-fire-in-a-modern-vehicle> May 3, 2022

<https://www.firestonecompleteautocare.com/blog/maintenance/when-car-overheats/#>, August 17, 2023

<https://sboilchange.com/oil-change/can-low-oil-cause-overheating/#:~:text=Regular%20oil%20changes%20ensure%20your,~and%20potentially%20severe%20engine%20damage>.

<https://www.usfa.fema.gov/downloads/pdf/statistics/v9i5.pdf> Volume 9, Issue 5, November 2009

https://www.interfire.org/res_file/mmo2.asp

<https://www.integratedfiresystems.com/intentional-fires/> February 12, 2019

<https://www.ojp.gov/ncjrs/virtual-library/abstracts/incendiary-devices> EA Pelletier, et.al, 1984

https://en.wikipedia.org/wiki/Act_of_God

<https://earthenvironmentcommunity.nature.com/posts/changes-in-patterns-of-wildfires-caused-by-lightning-strikes-due-to-climate-change#:~:text=Lightning%20is%20the%20major%20cause,trace%20gases%20into%20the%20atmosphere>. Francisco J.Perez-Invernón

<https://www.noaa.gov/jetstream/lightning/lightning-safety>

<https://www.nederman.com/en/knowledge-center/what-is-combustible-dust-and-dust-explosions#:~:text=Dust%20explosions%20are%20the%20result,butt%2C%20or%20other%20ignition%20source>.

<https://www.dust-doctors.com/blog/entryid/16/dusty-vents-are-a-fire-hazard#:~:text=Accumulated%20soot%20and%20dust%20can,settled%20on%20becomes%20very%20hot>.

<https://www.powder-solutions.com/2017/09/29/8-proven-safety-measures-to-prevent-dust-explosions/#:~:text=Perform%20Regular%20and%20Thorough%20Cleaning,is%20through%20regular%2C%20thorough%20cleaning>.

<https://www.imist.com/fire-hazards-in-the-home-glass-sunlight#:~:text=It%20might%20not%20be%20obvious,crystal%20door%20handles%20and%20mirrors>.

<https://www.homeandlegacy.co.uk/about-us/risk-insights-and-advice/low-winter-sun-a-real-fire-risk.html>

Chapter 3

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

Fire - Classified

Goals

- For the young adults to appreciate the different classifications of combustible materials involved in the development of fire and to have an in-depth understanding of the common causes of accidental fires affecting the community.

2

1

Objectives

By the end of the session, participants should be able to:

- Appreciate their accountability as an individual in fire safety and prevention;
- Categorize fires according to their class (5) and the use of the right extinguishing agent; and
- Identify the common causes of fire and the ways to prevent it.

3

1

How accountable are you?

1. Did you look for a "fire exit" sign when you visited the mall last weekend?
2. Did you unplug the electric fan in your room when you left this morning?
3. Do you know what to do first when you see fire today?

4

2

Activity



5

3

CLASSES OF FIRE



6

4

96 MODULE 5 Basic Leadership Training through Fire Safety

CLASSES OF FIRE



ORDINARY COMBUSTIBLES

These are slow-burning solid fuels that generally leave behind ASH when they burn.

Give examples of solid combustibles.

What do you think extinguishes this type of fire?

7

CLASSES OF FIRE



FLAMMABLE LIQUIDS AND GASES

This class of fire burns very quickly and can be hard to extinguish. It may BUBBLE and BOIL as it burns.

Give examples of flammable liquids and gases.

What do you think extinguishes this type of fire?

8

CLASSES OF FIRE



ELECTRICAL EQUIPMENT

This type of fire requires the continuous flow of CURRENT as the source of ignition.

Give examples of electrical equipment.

What do you think extinguishes this type of fire?

9

CLASSES OF FIRE



COMBUSTIBLE METALS

Metals are DENSE and cause DENT once hit with a hammer. Extreme heat is required to ignite metal, but once ignited, they are very hard to extinguish.

Give examples of combustible metals.

What do you think extinguishes this type of fire?

10

CLASSES OF FIRE



COOKING FIRES INVOLVING OILS AND FATS

Cooking oils and animal fats found in the KITCHEN burst into flame since they are often exposed to a heat source.

Give examples of cooking oils and animal fats.

What do you think extinguishes this type of fire?

11

Points to Ponder

To beat the enemy one must know the enemy right. Likewise, for fire. Fire is not a single-faceted enemy. It is a multi-faceted opponent; five faces to be precise.

12

CLASSIFICATION OF FIRE INCIDENTS

1. Acts of God or Providential Fires
2. Accidental Fires
3. Intentional Fires

13

COMMON CAUSES OF FIRE

1. Electrical ignition Caused by loose connection
2. Electrical ignition Caused by overloading
3. Electrical ignition Due to pinched wire
4. Electrical ignition Caused by arcing
5. Smoking

14

COMMON CAUSES OF FIRE

6. Open Flame From an unattended lighted candle
7. Open Flame From lamp (gasera) or torch (sulo)
8. Open Flame From rubbish fire/bonfire to structural fire
9. Open Flame Rural/agricultural land clearing (kaingin)
10. Overheated home appliances
11. Ignition caused by fireworks/pyrotechnics

15

15

COMMON CAUSES OF FIRE

19. Ignition of material caused by welding slags
20. Ignition of materials caused by acetylene/hot works
21. Sky lantern
22. Ignition of material from ember/flying ember or alipato
23. Overheated engine (motor vehicle)

17

17

Question

1. Are you familiar with the discussed causes of fire? Name a few.
2. Do you think your area (home, workplace, or school) is at fire risk with those you enumerated? Why?
3. Fire safety and prevention measures are mentioned, can you tell how you can prevent or be fire-safe from the fires you mentioned in question No. 1?

19

19

End of subject

21

21

COMMON CAUSES OF FIRE

12. LPG explosion Caused by defective tanks
13. LPG explosion Caused by defective hose line
14. LPG explosion Caused by defective regulator
15. LPG explosion Caused by defective stove
16. LPG explosion Caused by static electricity or spark
17. Children playing with matches or lighters
18. Battery short circuit or battery explosion

16

16

COMMON CAUSES OF FIRE

24. By use of incendiary device
25. By use of flammable liquid
26. By use of open flame
27. Fire caused by lightning
28. Dust explosion
29. Magnified/focused sun rays

18

18

Conclusion/ Closing Evaluation

1. What are the classes of fire?
2. What are the common causes of fire? Basic causes of fire?
3. Can you identify among the causes which are intentional, accidental, or providential?
4. Are you now aware of the potential hazards of the materials in our homes/ schools/ workplaces?

20

20

Chapter 4

Basic Leadership Training through Fire Safety

SafeHome Escape Quest



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 4...

Goal

The goal of an exit drill at home for young adults is to inform and prepare young adults for safe and effective evacuation in the event of a fire or other emergencies. It aims to instill a sense of responsibility and readiness, ensuring that they can protect themselves and others during a crisis.

Objectives

By the end of the session, participants should be able to:

1. To increase young adult's awareness of the importance of having a home fire escape plan
2. To instill a sense of personal responsibility for their safety and the safety of others in their household
3. To teach young adults essential skills such as recognizing the sound of a smoke alarm and how to respond to it
4. To establish a routine of conducting exit drills at home on a regular basis, ensuring that young adults are well-prepared for emergencies

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. Powerpoint Presentation
3. Others
 - i. Smoke alarms
 - ii. Floor Plans/Maps
 - iii. Stopwatch/Timer
 - iv. Fire Safety Props

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Interactive Apps
 - ii. Virtual Reality (VR) Headsets
 - iii. Online Resources

Total Time of Delivery:

2 Hours

Cheat Sheet

Subject Overview

Purpose: The purpose of the exit drill at home in public fire education is to educate the individuals and communities about the importance of having a well-prepared home fire escape plan. It aims to empower people to respond effectively in the event of a fire emergency, promoting safety, and reducing potential risks.

General Guidance: In this subject the lecturer/facilitator must encourage active participation and engagement from attendees, fostering a sense of responsibility. He must provide for hands-on practice, allowing participants to physically enact the escape plan. He should also address common concerns and questions participants might have about home fire safety and evacuation. Create an open environment where participants feel comfortable asking questions and seeking clarifications. He should emphasize the importance of regularly practicing home fire escape plans to ensure preparedness.

Things to Consider: Tailor the content to suit diverse audiences, including different age groups and individuals with varying abilities. Be culturally sensitive, considering cultural practices and beliefs related to fire safety and evacuation. Ensure that the educational materials and activities are accessible to individuals with disabilities. Present realistic fire emergency scenarios to help participants understand the seriousness of the topic. Provide participants with additional resources, such as brochures and websites, for further learning and reference.

Subject Outline

Visual Aids	Outline	Notes
1. PREPARATORY		
 ppt cover	1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged.	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on Home Fire Escape Plans. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
	1.2 Provide an overview of the session and capture participants' interest.	Briefly introduce the topic: "Today, we are delving into the critical topic of Home Fire Escape Plans.

Cont...1

Visual Aids	Outline	Notes
		We'll learn how to create effective plans to ensure the safety of our homes and loved ones. It's not just about knowledge; it's about empowerment and preparedness. Get ready for an engaging and informative session!"
2. MOTIVATION		
	1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: "By the end of this session, you'll have a deep understanding of Home Fire Escape Plans, including their importance, components, and how to create one for your home. We aim to empower you with practical knowledge that you can apply in real-life situations."
	2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts.	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!"
	2.2 Foster a sense of camaraderie and ease participants into the session	Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion.
	2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Conclude the preparatory phase with a motivating statement:

Cheat Sheet

Visual Aids

Outline

Notes

"Now that we're all warmed up and ready, let's dive into the world of Home Fire Escape Plans. Get ready to equip yourselves with life-saving knowledge. Remember, the power to create a safer home is in your hands!" With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.

3. LESSON PROPER

LG4-1

PPT S4-5

LG4-2

PPT S6

LG4-3

PPT S7-10

LG4-4

PPT S11-13

- 3.1 Understanding the Nature of Home Fires
 - Discuss common causes of home fires
 - Explain how fires spread and escalate
 - Highlight the speed at which a small fire can become uncontrollable
- 3.2 Importance of Smoke Alarm
 - Discuss the types of smoke alarms and their placement in homes
 - Explain how smoke alarms work
 - Emphasize the significance of regularly testing and maintaining smoke alarms
- 3.3 Creating a Home Fire Escape Plan
 - Explain the essential elements of a home fire escape plan
 - Discuss how to identify primary and secondary escape routes in different rooms
 - Emphasize the importance of having alternative escape plans.
- 3.4 Practice and Drill Procedures
 - Explain the significance of regular fire drills at home
 - Provide guidelines on how to conduct effective fire drills
 - Discuss what to do during a fire drill, including evacuating quickly and safely

Engage participants in interactive activities like creating a mock escape plan.

Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.

Encourage active participation and questions throughout the session.

Cont...2

Visual Aids	Outline	Notes
<p>LG4-5 PPT S14-15</p>	<p>3.5 Special Considerations for Vulnerable Individuals</p> <ul style="list-style-type: none">• Discuss special escape considerations for elderly family members, children, and individuals with disabilities.	
<p>LG4-6</p>	<p>3.6 Post-Fire Evacuation Procedures</p> <ul style="list-style-type: none">• Explain what to do after evacuating the home• Discuss the importance of not re-entering a burning building	
<p>LG4-7 PPT S16-21</p>	<p>3.7 Interactive Demonstrations and Simulations</p> <ul style="list-style-type: none">• Conduct practical demonstrations of how to use fire safety equipment• Simulate fire drills to allow participants to practice evacuation procedures	

4. GENERALIZATION

- | | |
|---|---|
| <p>4.1 Recapitulation of Key Points</p> <ul style="list-style-type: none">• Summarize the essential components of a home fire escape plan, reinforcing key concepts.• Emphasize the importance of regular practice and awareness in ensuring the plan's effectiveness. | <p>Encourage participants to share their insights and lessons learned from the session.</p> |
| <p>4.2 Real-Life Scenarios</p> <ul style="list-style-type: none">• Discuss real-life situations where a well-executed fire escape plan made a significant difference.• Highlight success stories to underscore the importance of preparedness and quick thinking. | <p>Summarize key points, highlighting the importance of regular practice and preparedness.</p> <p>Relate the session to real-world applications, emphasizing the relevance of the learned skills.</p> |

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
	<p>5. CLOSING EVALUATION</p> <p>5.1 Q&A Session</p> <ul style="list-style-type: none">• Invite participants to share their feedback on the session, focusing on what they've learned and how they plan to implement it.• Encourage participants to commit to practicing their home fire escape plans and to share this knowledge with their families and friends.	<p>Ensure participants leave the session feeling confident about creating and implementing a home fire escape plan. Emphasize the role of proactive prevention and preparedness in ensuring the safety of themselves and their communities.</p> <p>Express gratitude for participants' active participation and encourage them to share the knowledge with their families and communities.</p> <p>Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer.</p>

Nothing Follows

Understanding the Nature of Home Fires [1/7]

Common causes of home fires



source: <https://www.vectorstock.com/royalty-free-vector/old-abandoned-house-on-fire-flame-in-hallway-vector-38157077>

In the warm and bustling homes of the Philippines, where families gather, laughter echoes, and the aroma of delicious meals wafts through the air, there exists a potential danger that often goes unnoticed - the risk of home fires. These fires, which can start innocently but escalate swiftly, pose a significant threat to both lives and properties. Understanding the common causes of home fires is crucial for every Filipino family to ensure the safety and well-being of their loved ones.



1. Electrical Faults: A Silent Menace

One of the leading causes of home fires in the Philippines is electrical faults. Outdated wiring, overloaded circuits, and the use of substandard electrical equipment can lead to short circuits and sparks, igniting fires. Many households, especially in older structures, are not equipped to handle the increasing demands of modern appliances, making them susceptible to electrical fires.



2. Carelessness in the Kitchen

The kitchen, often the heart of Filipino homes, can also be a hotspot for fires. Unattended stoves, forgotten cooking oil on high heat, and malfunctioning gas lines can quickly escalate into a fire emergency. Additionally, the use of open flames for traditional cooking methods can lead to accidental fires, especially in crowded living spaces.



3. Candle and Lamp Fires

In areas where power outages are frequent, candles and lamps become essential sources of light. However,

when placed too close to flammable materials or left unattended, these sources can spark fires. Moreover, in rural communities, where traditional oil lamps are common, the risk of fire is significantly higher.

4. Smoking-related Incidents

Carelessly discarded cigarette butts or the improper extinguishing of smoking materials can result in fires. Indoor smoking, especially when combined with upholstered furniture or curtains, creates a dangerous environment. Smokers often underestimate the potential fire hazard, leading to numerous incidents.



Preventing home fires requires a collective effort from individuals, communities, and authorities. Public awareness campaigns, regular safety inspections, and the implementation of strict building codes are essential steps toward reducing the occurrence of these incidents. By understanding the common causes and promoting fire safety practices, Filipino households can significantly decrease the risk of devastating home fires, ensuring the safety and well-being of their families.

How fires spread and escalate.



Fires can spread and escalate rapidly in homes due to various factors, turning a small flame into a life-threatening blaze within minutes. Understanding the basic principles of fire propagation is crucial for effective fire safety measures.

1. Ignition Sources:

Fires start when an ignition source (e.g., a spark, open flame, faulty wiring, or overheated appliances) comes into contact with a combustible material.

2. Fuel:

Combustible materials, such as paper, wood, fabric, and certain plastics, provide fuel for the fire. The type and amount of fuel present determine how quickly the fire spreads.

3. Oxygen:

Fires require oxygen to sustain combustion. Air supplies the necessary oxygen for the fire to grow. Once a fire starts, it draws in surrounding air, ensuring a constant supply of oxygen.

4. Heat Transfer:

Fire can transfer heat through conduction, convection, and radiation. Conduction is the transfer of heat through direct contact, convection is the transfer of heat through the movement of hot gases, and radiation is the transfer of heat in the form of electromagnetic waves. These mechanisms can cause nearby materials to heat up, potentially leading to more fires.

5. Confined Spaces:

Fires can spread rapidly in confined spaces, such as small rooms or areas with limited ventilation. Limited space restricts the movement of air, allowing the fire to build up heat and gases quickly.

6. Fire Load:

The fire load refers to the total amount of combustible material within a space. The higher the fire load, the more fuel there is for the fire to consume, leading to a more intense and faster-spreading fire.

7. Flashover:

Flashover occurs when the temperature in a room becomes so high that all combustible materials simultaneously ignite. This phenomenon leads to a rapid and widespread fire escalation, making it extremely dangerous for anyone inside the area.

It's important to note that fire safety measures, such as smoke alarms, fire extinguishers, and fire-resistant building materials, are crucial in preventing the spread of fires inside homes. Regular fire drills and having an escape plan can also save lives in the event of a fire emergency.



Facilitator's Note [1/4]

Enhance the understanding of the participants by having them watch a video demonstrating the rapid spread of a fire. This visual representation will provide valuable insights into the urgency and speed at which fires can escalate. This will make the participants pay close attention as it will help reinforce the importance of our preparedness efforts

Speed at which a small fire can become uncontrollable.

In the blink of an eye, a seemingly harmless spark can transform into a roaring blaze, consuming everything in its path. The speed at which a small fire escalates in homes is staggering. Within minutes, what started as a minor incident can become an uncontrollable inferno, endangering lives and property.

Picture a forgotten stove, an unattended candle, or an electrical malfunction. In mere moments, these small triggers can grow into a crisis. Heat intensifies, smoke thickens, and escape routes vanish swiftly. The urgency of swift action cannot be overstated. Every second is precious in combating the rapid escalation of home fires.

This highlights the critical importance of fire safety measures, early detection, and a well-practiced escape

plan. Stay alert, be prepared, and prioritize fire safety to mitigate the swift and devastating impact of home fires.

The Importance of Smoke Alarms [2/7]

Types of smoke alarms and their placement in homes.

Smoke alarms are the unsung heroes of fire safety, providing early warnings that can save lives. Understanding the types of smoke alarms and their strategic placement within homes is crucial in ensuring effective protection.



Types of Smoke Alarms:

- **Ionization Smoke Alarms:** These are responsive to flaming fires, characterized by rapid combustion and lots of flames. They contain a small amount of radioactive material, making them sensitive to smoke particles.
- **Photoelectric Smoke Alarms:** Ideal for detecting smoldering fires, these alarms respond to visible particles of combustion. They are particularly effective for detecting slow, smoky fires.
- **Dual Sensor Smoke Alarms:** Combining ionization and photoelectric sensors, these alarms offer comprehensive protection by responding to both flaming and smoldering fires.

BRK-9120 Series Ionization Alarms



a BRK First Alert Ionization Smoke Alarm 120 V with Lithium Back Up



a HD-180 Photoelectric Smoke Detector that has a computer designed smoke chamber that allows unhampered smoke entry.



a First Alert SA320FF Dual-Sensor Smoke and Fire Alarm

Placement in Homes:

- **Bedrooms:** Install smoke alarms inside each bedroom, especially if anyone sleeps with the door closed.
- **Hallways:** Place alarms in the hallway outside bedrooms, ensuring everyone can hear them when asleep.
- **Living Areas:** Install alarms in living rooms, dens, or family rooms where people spend a significant amount of time during the day.
- **Basements:** Place alarms at the bottom of stairwells leading to upper levels, as well as in the basement near the stairwell.
- **Kitchens:** Avoid placing alarms too close to stoves or cooking appliances to prevent false alarms. Opt for heat detectors in kitchens.
- **Ceilings:** Mount smoke alarms on the ceiling, as smoke rises. Ensure they are at least 10 feet away from cooking appliances to minimize false alarms.

Regular maintenance, including monthly testing and battery replacement at least once a year, ensures smoke

alarms remain operational. By understanding the types of smoke alarms and placing them strategically, homes can be well-prepared to detect fires early and protect occupants effectively.

How smoke alarms work.

Smoke alarms, those small devices often overlooked until they're needed, are integral to ensuring the safety of your home. But have you ever wondered how these life-saving gadgets work?

The Basics:

At their core, smoke alarms are remarkably simple yet incredibly effective. They operate based on two main types of sensors: ionization and photoelectric.

1. Ionization Smoke Alarms:

These alarms work by utilizing a small amount of radioactive material (americium-241) that ionizes the air within the device. When smoke enters the chamber, it disrupts the flow of ions, triggering the alarm. Ionization alarms are highly sensitive to fast-burning fires, which produce smaller smoke particles and flames. (<https://www.nfpa.org>)

2. Photoelectric Smoke Alarms:

Photoelectric alarms, on the other hand, use a beam of light to detect smoke. Inside the alarm, there is a light source and a receptor. When smoke particles enter the chamber, they scatter the light, causing it to hit the receptor and triggering the alarm. Photoelectric alarms are particularly effective in detecting slow, smoldering fires, which tend to produce larger smoke particles. (<https://www.nfpa.org>)

How They Respond to Fires:

During a fire, smoke particles enter the alarm chamber, disrupting either the ionization or the light beam, depending on the alarm type. This disturbance immediately activates the alarm, emitting a loud, distinct sound to alert occupants of the potential danger.

Why They Are Vital:

Facilitator's Note [2/4]

If smoke alarms are accessible, you should demonstrate how each one activates. This hands-on activity will help you understand the different types of alarms and their functioning mechanisms, enhancing your knowledge of smoke alarm responses.

Smoke alarms are designed to detect the earliest signs of a fire, often well before visible flames or intense heat occur. This early detection provides crucial extra minutes for safe evacuation, dramatically increasing the chances of escaping unharmed.

Understanding how smoke alarms work empowers us to appreciate their significance fully. By ensuring these devices are properly installed, regularly tested, and equipped with fresh batteries, we maximize their potential to protect our homes and loved ones from the devastating impact of fires. Remember, in the realm of fire safety, these small devices play an enormous role in safeguarding lives and property.

Significance of regularly testing and maintaining smoke alarms.

When it comes to safeguarding your home from the devastating effects of fire, your smoke alarms stand as silent sentinels, ready to spring into action at the first whiff of smoke. However, like any vigilant protector, they require regular attention and care to ensure they perform their life-saving duties flawlessly.

1. The Importance of Regular Testing:

Imagine your smoke alarm as a vigilant guard, poised to warn you in case of danger. Regular testing is akin to honing this guardian's senses, making sure it's always at the peak of its performance. Regular testing, usually done monthly, involves a simple press of the test button. When the alarm responds with a loud, sharp sound, you can rest assured that it's ready to alert you when it matters most.

2. Changing Batteries:

Think of changing batteries as providing nourishment to your vigilant guard. Twice a year, usually when daylight saving time begins and ends, swap out old batteries for fresh ones. A well-fed alarm ensures uninterrupted protection.

3. Clearing Away Dust and Debris:

Just like a watchful guardian, smoke alarms need clear vision to detect danger. Regularly remove dust and debris from the alarm vents, ensuring an unobstructed path for smoke particles to reach the sensors.

4. Regular Maintenance Checks:

Consider an annual checkup for your smoke alarms. Ensure they are within their lifespan (usually 10 years), and if not, it might be time to replace them. It's also an opportunity to assess if they are optimally placed in your home – every floor, every sleeping area, and the hallways.

5. The Peace of Mind:

Regular testing and maintenance provide more than just functioning alarms; they offer peace of mind. Knowing that your guardians are vigilant and ready to spring into action means you can sleep soundly, confident that your loved ones are protected.

In essence, regularly testing and maintaining your smoke alarms is not just a chore; it's an act of responsible guardianship. It ensures that these silent heroes remain sharp, alert, and ever-ready to raise the alarm, giving you and your family the precious time needed to escape a potential disaster. So, let's commit to nurturing our guardians, ensuring they stand strong, ever-vigilant against the threat of fire.

Facilitator's Note [3/4]

- "If any participants have a smoke alarm in their residence or if there is one nearby, we should encourage them to experience testing their smoke alarm. Please ensure to coordinate first with the building owner or the responsible individual. Make certain that it is a manual smoke alarm and not linked with the automatic fire suppression system."

Creating a Home Fire Escape Plan^[3/7]

Essential elements of a home fire escape plan.



Your home is your sanctuary, but in the face of a fire, having a well-thought-out escape plan can mean the difference between safety and peril. Here are the essential elements of a home fire escape plan that every household should consider:



1. Know Your Exits:

Identify all possible exits in your home. This includes doors and windows. Each room should have at least two possible exits. Ensure that these exits are easily accessible and can be opened without difficulty.

2. Establish Meeting Points:

Designate specific meeting points outside your home. These spots should be a safe distance away from the house but easily accessible. Having a designated meeting point ensures that everyone is accounted for and prevents unnecessary re-entry into the burning house.

3. Assign Responsibilities:

Assign specific tasks to each family member. For example, someone can be responsible for helping young children, someone else for assisting elderly family members, and another person for grabbing important documents or emergency kits. Knowing individual responsibilities ensures a coordinated and efficient evacuation.

4. Practice Regularly:

Frequent practice turns a plan from an idea into a lifesaving routine. Conduct fire drills at least twice a year, especially if there are children in the household. Practice different scenarios, including escaping from different rooms and even during the night. Regular drills make sure everyone knows exactly what to do, even in the dark and under stress.

5. Stay Low and Go:

Teach everyone in your household the importance of staying close to the ground in case of a fire. Smoke rises, and the air near the floor is clearer and cooler. Encourage crawling to avoid inhaling smoke, which can be just as dangerous as the flames.



6. Have Emergency Contacts:

Keep a list of emergency contacts near your phone and teach everyone, especially children, how to dial these numbers. In the event of a fire, every second counts, and having emergency contacts readily available can speed up the response time.



7. Practice Window Escapes:

If rooms are on higher floors, ensure that there are fire escape ladders or other safe methods for descending. Practice using these devices, especially for older children who might need to escape on their own.

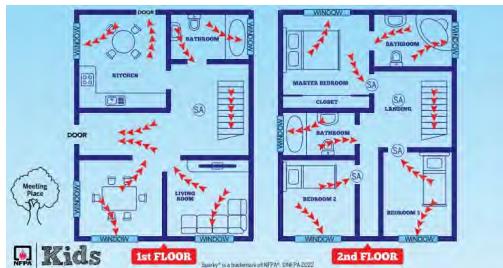


8. Stay Calm and Call for Help:

Instruct everyone not to waste time gathering belongings. Stress the importance of getting out as quickly as possible and calling emergency services from a safe location.



Identifying primary and secondary escape routes in different rooms.



source: <https://www.nfpa.org/-/media/Files/Public-Education/By-topic/Escape/EscapeGrid.pdf>

In the event of a home fire, having multiple escape routes from different rooms is crucial. Here's how you can identify primary and secondary escape routes in various parts of your house:

1. Bedrooms:

- **Primary Route:** The primary escape route from bedrooms is usually the door. Ensure that doors open easily and are not blocked by furniture. Teach family members to feel the door with the back of their hand before opening it. If it's hot, there might be fire on the other side, and they should use the secondary route.

- **Secondary Route:** Windows can be secondary escape routes. Make sure everyone knows how to open them quickly. For higher floors, consider escape ladders or safety ropes.

2. Living Room:

- **Primary Route:** The main door is the primary route in the living room. Check that it opens smoothly and swiftly. Avoid piling items near the door that could obstruct the way out.

- **Secondary Route:** Large windows or sliding doors leading to the backyard can serve as secondary routes. Make sure everyone knows how to open them and remove any barriers.

3. Kitchen:

- **Primary Route:** The kitchen door is often the primary exit. Keep the area near the door clutter-free. Ensure that everyone knows not to overcrowd this space during emergencies.

- **Secondary Route:** If the kitchen has a window, it can be a secondary escape route. Educate family members on how to safely climb out of the window if necessary.

4. Basement:

- **Primary Route:** The stairs leading from the basement to the main floor are the primary exit. Ensure the path is clear of obstructions.

- **Secondary Route:** If there are windows in the basement, they can be used as secondary escape routes. Install window wells and ensure family members can easily open these windows.

5. Hallways:

- **Primary Route:** Hallways typically lead to various rooms and the main exit. Keep hallways clear of clutter to facilitate swift evacuation.

- **Secondary Route:** In the absence of a clear secondary route, hallways can be used to access different rooms' secondary exits, such as windows.

6. Practice and Familiarity:

- Regularly conduct fire drills, including finding primary

and secondary routes, so that everyone is familiar with the escape plan.

- Ensure that family members know which rooms have windows and how to open them. Also, teach them how to use escape ladders if applicable.

By identifying and practicing both primary and secondary escape routes in different rooms, you empower your household to respond effectively in the face of a fire emergency, increasing the chances of a safe evacuation for everyone.

Importance of having alternative escape plans.

During a home fire, every second counts. Having alternative escape plans can make a significant difference in ensuring the safety of your family. Here's why having backup routes is crucial:

1. Unpredictability of Fires:

Fires are highly unpredictable. A primary escape route that was clear moments ago might become blocked by flames or smoke. Having alternatives ensures you have multiple options regardless of how the situation changes.

2. Rapid Smoke Spread:

Smoke spreads much faster than flames during a fire. It can obstruct vision and breathing, making it difficult to find the primary route. Alternative routes provide different paths to safety, even if visibility is low.

3. Blocked Exits:

In the chaos of a fire, exits can get blocked by falling debris or panicked crowds. Alternative routes offer a way around obstructions, increasing the likelihood of a swift and safe evacuation.

4. Different Scenarios:

Fires can start in various parts of the house, and not all areas may be accessible due to the location of the fire source. Alternative escape plans should cover different scenarios, including fires in bedrooms, living rooms, or kitchens.

5. Peace of Mind:

Knowing that there are multiple ways out of your home provides peace of mind. It reduces panic during emergencies, allowing for a more organized and efficient evacuation.

6. Practice and Familiarity:

Regularly practicing alternative escape routes ensures that every family member is familiar with them. Familiarity can be a lifesaver during high-stress situations.



a Sample Escape Plan from the National Fire Protection Association (NFPA) website

7. Special Considerations:

Consider family members with special needs, like elderly individuals or children. Alternative routes should be accessible to everyone, taking into account mobility limitations and other considerations.

8. Communication and Coordination:

Having alternative escape plans encourages communication among family members. It fosters coordination, ensuring that everyone knows where to go and how to help each other during an evacuation.

Incorporating alternative escape plans into your home fire safety strategy significantly enhances your preparedness. By considering different scenarios, practicing routes regularly, and ensuring that everyone in the household is aware of these alternatives, you maximize your chances of a safe and efficient evacuation, even in the most challenging circumstances. Remember, when it comes to fire safety, having a Plan B and C can be the difference between life and tragedy.

Practice and Drill Procedures:^[4/7]



Significance of regular fire drills at home.

Fire drills are not just for schools or workplaces; they are crucial at home too. Here's why:

1. Familiarity Breeds Confidence:

Regular fire drills help everyone in the family know what to do without thinking. Familiarity breeds confidence, ensuring swift and decisive actions during a real emergency.

2. Identifying Escape Routes:

Through drills, you can identify the fastest and safest escape routes from different rooms. This knowledge is invaluable in a real fire situation, where seconds count.

3. Testing Smoke Alarms:

Fire drills provide an opportunity to test smoke alarms. Ensuring they work properly is vital for early detection, giving your family more time to escape in case of a fire.

4. Teaching Young Ones:

For children, fire drills are educational. They learn the importance of fire safety and practice how to respond, making them more prepared and less scared in real emergencies.

5. Enhancing Family Communication:

Drills encourage communication within the family. Discussing the escape plan and practicing it together

fosters teamwork and ensures everyone is on the same page.

6. Calm and Orderly Evacuation:

Regular drills help in maintaining calm during emergencies. When everyone knows what to do, evacuations are more orderly, reducing the risk of injuries or accidents.

7. Building Muscle Memory:

Practicing escape routes and safety procedures builds muscle memory. In stressful situations, muscle memory kicks in, guiding individuals safely out of danger even if they are disoriented.

In essence, regular fire drills transform uncertainty into readiness. They empower your family with the knowledge and confidence needed to face a fire emergency head-on, ensuring everyone's safety. So, don't just have a plan; practice it regularly. It might just save lives.

Guidelines on how to conduct effective fire drills.

Fire drills are vital to ensure your family's safety. Here's a guide on how to conduct effective fire drills at home:

1. Inform Everyone:

Announce the drill in advance. This prevents panic and ensures everyone is present and prepared.

2. Simulate Real Conditions:

Try to make the drill as realistic as possible. Simulate smoke by using a smoke machine or a dry ice fogger to create a sense of urgency.

3. Sound the Alarm:

Trigger the smoke alarms or use a bell to signal the start of the drill. This mimics a real fire situation.

4. Practice Low Crawls:

Teach family members to crawl low under smoke. Practice this during the drill to ensure everyone knows how to do it.

5. Assign Responsibilities:

Assign roles to family members. Designate someone to assist elderly or young family members, and ensure everyone knows their primary and secondary escape routes.

6. Use Different Scenarios:

Vary the scenarios. Sometimes, simulate a blocked escape route to teach alternative ways out. This prepares your

family for unexpected obstacles.

7. Practice Stop, Drop, and Roll:

If your clothes catch fire, everyone should know how to stop, drop to the ground, cover their face, and roll to put out the flames. Practice this important technique.

8. Choose a Safe Meeting Point:

Designate a safe spot outside the house where everyone gathers after evacuating. This ensures accountability and prevents anyone from re-entering the house.

9. Review and Discuss:

After the drill, gather the family and discuss what went well and what needs improvement. Encourage open communication to enhance the escape plan.

10. Regularly Rehearse:

Conduct fire drills regularly, at least twice a year. Repetition strengthens memory and ensures everyone remembers the escape plan.

By following these guidelines, your family will be well-prepared to face a real fire emergency. Remember, practice can save lives. Stay prepared, stay safe.

What to do during a fire drill, including evacuating quickly and safely.

Participating in a fire drill is essential for your safety. Here's what you need to do during a fire drill to evacuate quickly and safely:

1. Stay Calm:

Keep your composure. Panicking slows you down and makes it harder to think clearly.

2. Listen for Alarms:

Pay attention to the sound of the fire alarm or the designated signal. React promptly when you hear it.

3. Evacuate Immediately:

Don't wait or finish what you're doing. Leave the area immediately. Your safety is the top priority.

4. Use the Nearest Exit:

Always use the nearest exit. If your primary exit is blocked, use the alternative one you've planned for.

5. Stay Low if There's Smoke:

Smoke rises, so if you encounter smoke, stay low to the ground. Crawl if necessary. Cleaner air will be near the floor.

6. Feel Doors Before Opening:

Use the back of your hand to feel the doorknob, hinges, and the space between the door and frame. If it's hot, there might be fire on the other side. Use an alternative escape route.

7. Don't Use Elevators:

Elevators might get stuck during a fire. Always use the stairs for evacuation.

8. Cover Your Nose and Mouth:

If you encounter smoke, use a cloth to cover your nose and mouth. This helps filter the air and reduces smoke inhalation.

9. Stay Together:

If you're evacuating with others, stay together. This ensures that everyone is accounted for when you reach the safe meeting point.

10. Do Not Return Inside:

Once you've evacuated, never re-enter the building until it's declared safe by authorities. Going back inside can put your life at risk.



Special Considerations for Vulnerable Individuals: [5/7]

Special escape considerations for elderly family members, children, and individuals with disabilities.

In the event of a fire, it's crucial to consider the safety of everyone in your household, including elderly family members, children, and individuals with disabilities. Here are some special escape considerations:

1. Elderly Family Members:

- Plan for a family member or caregiver to assist elderly relatives.

- Ensure pathways are clear of obstacles to facilitate easy movement.
- If possible, place a phone and emergency numbers by their bedside.

2. Children:

- Teach children about the sound of smoke alarms and what it means.
- Practice crawling low under smoke during fire drills, as smoke rises.
- Assign a responsible adult to guide and accompany young children during evacuation.

3. Individuals with Disabilities:

- Plan escape routes that accommodate wheelchairs or mobility aids. Ensure ramps or lifts are available where needed.
- If hearing impaired, consider specialized smoke alarms with visual signals or bed shakers.
- Create a buddy system, where able-bodied individuals assist those with disabilities during drills and real emergencies.

4. Communication Plan:

- Establish clear communication methods tailored to each person's needs. This might include text messages, hand signals, or a predetermined meeting point.
- Ensure everyone knows how to call for help, whether it's through a phone, a medical alert device, or a trusted neighbor.

5. Safe Meeting Points:

- Designate safe meeting points near exits but away from the building. Ensure everyone, including those with disabilities, is aware of these locations.
- Practice reaching the meeting points during fire drills, emphasizing the importance of going directly there.

6. Regular Practice:

- Conduct regular fire drills that include everyone in the household. Practice different scenarios to enhance preparedness.
- Review and adapt the escape plan as necessary, considering any changes in mobility or health conditions.
- Remember, customized plans and clear communication are key. By addressing the specific needs of each family member, you ensure that everyone can evacuate safely in the event of a fire.

Post-Fire Evacuation Procedures:^[67]

What to do after evacuating the home.

After successfully evacuating your home during a fire, it's important to remain cautious and follow specific steps to ensure your safety and the safety of others. Here's what to do after evacuating: After successfully evacuating your home during a fire, it's important to remain cautious and follow specific steps to ensure your safety and the safety of others. Here's what to do after evacuating: After successfully evacuating your home during a fire, it's important to remain cautious and follow specific steps to ensure your safety and the safety of others. Here's what to do after evacuating:

1. Stay Calm:

Remain calm and composed. Focus on following the planned escape routes and reaching the designated safe meeting point.

2. Do Not Re-enter:

Under no circumstances should you re-enter the building until authorities declare it safe to do so. Fires can reignite, and buildings may be structurally compromised.

3. Account for Everyone:

Ensure that all family members and pets are present and safe. Use the buddy system to confirm everyone's whereabouts.

4. Call Emergency Services:

Dial emergency services (such as 911) once you are safely outside the building. Provide your address and inform them of the situation.

5. Notify Neighbors:

Inform your neighbors about the fire, especially if it could potentially spread to nearby homes. This can help others evacuate in time.

6. Seek Medical Attention if Necessary:

If anyone is injured during the evacuation, even if it seems minor, seek medical attention promptly. Certain injuries might not be immediately apparent.

7. Stay Informed:

Listen to emergency broadcasts or follow updates from local authorities to know when it's safe to return home.

8. Contact Loved Ones:

Inform relatives and close friends that you are safe. Reassure them about your well-being to avoid unnecessary worry.

9. Document Damages:

If it's safe to do so, take photos or videos of any damages to your property. This documentation can be crucial for insurance claims.

10. Follow Authorities' Instructions:

Adhere to any instructions given by firefighters, police, or other emergency personnel. They are trained to assess the situation and provide necessary guidance.

11. Be Cautious Upon Return:

When you are allowed to return home, be cautious. Watch out for hot spots, smoldering debris, or other hazards. Do not use utilities until they have been inspected and declared safe.

Remember, safety is the top priority. By following these steps and staying vigilant, you contribute to your well-being and that of your community during and after a fire emergency.

Importance of not re-entering a burning building.

During a fire emergency, the instinct to retrieve belongings or check on loved ones left behind is powerful. However, it is crucial to understand the immense danger associated with re-entering a burning building. Here's why you should never re-enter a burning structure:

1. Rapidly Changing Conditions:

Fires escalate quickly, leading to changing conditions within seconds. Re-entering a building means risking exposure to intense heat, thick smoke, and zero visibility, making navigation nearly impossible.

2. Toxic Smoke and Gases:

Fires produce toxic smoke and gases, including carbon monoxide, which can incapacitate a person within minutes. Inhalation of these substances can lead to disorientation, unconsciousness, or even death.

3. Structural Instability:

Fires compromise a building's structural integrity. High temperatures can weaken materials, leading to the potential collapse of walls, ceilings, or entire sections of the building. Re-entering risks being trapped under debris.

4. Flashover:

Flashover is the rapid spread of fire, causing all exposed combustible materials to ignite simultaneously. Re-entering during this stage can lead to immediate and uncontrollable engulfment in flames.



5. Limited Time to Escape:

In a fire, time is of the essence. Re-entering wastes precious seconds that could be used to escape safely. The longer you stay inside, the more dangerous the situation becomes.



6. Interfering with Rescuers:

Firefighters and other emergency personnel are trained to handle rescue operations. Re-entering a building can complicate their efforts, diverting resources from other crucial tasks.



7. Psychological Impact:

The emotional toll of re-entering a burning building can be severe. Witnessing the destruction, feeling the heat, and encountering the chaos can cause panic and impair judgment, leading to further dangerous decisions.



8. Legal Consequences:

Re-entering a burning building against the advice of authorities may not only endanger your life but can also result in legal consequences. Many jurisdictions have laws against obstructing emergency operations.

In summary, no possession is worth risking your life for. Once you have safely evacuated a burning building, it is imperative to stay out and let trained professionals handle the situation. By resisting the urge to re-enter, you significantly increase your chances of survival and enable emergency responders to do their job effectively.

Interactive Demonstrations and Simulations [7/7]

Simulate fire drills to allow participants to practice evacuation procedures.

1. Fire Drill Walkthrough:

Objective: Familiarize participants with the physical layout of the building and evacuation routes.

Activity: Conduct a physical walkthrough of the building, emphasizing primary and secondary evacuation routes, locations of fire exits, and assembly points. Participants should physically walk the routes, ensuring they understand the layout and the fastest ways to exit the building.

2. Fire Extinguisher Training:

Objective: Teach participants how to properly use a fire extinguisher.

Activity: Provide fire extinguisher training using a controlled fire simulator or a digital fire simulation. Participants can

practice using fire extinguishers to put out simulated fires. This hands-on experience enhances their confidence and skills in handling fire emergencies.

3. Escape Room Fire Drill:

Objective: Enhance problem-solving skills and teamwork in the context of a fire emergency.

Activity: Create an escape room scenario based on a fire emergency. Participants work in small teams to solve puzzles and find clues related to fire safety. To “escape,” they must correctly identify evacuation routes, use fire safety equipment, and answer questions about fire prevention. This interactive activity promotes teamwork and reinforces fire safety knowledge.

4. Fire Evacuation Simulation:

Objective: Simulate a fire emergency and test participants' evacuation skills.

Activity: Use smoke machines and alarms to simulate a fire emergency in a controlled environment. Participants must follow evacuation procedures, including crawling under smoke, checking doorknobs for heat, and using alternative routes if necessary. This realistic simulation allows participants to practice evacuating safely amid challenging conditions.

5. Virtual Reality (VR) Fire Drill:

Objective: Provide a realistic and immersive experience of a fire emergency.

Activity: Utilize virtual reality (VR) technology to create a simulated fire emergency scenario. Participants wear VR headsets and navigate through a virtual building while facing various fire-related challenges. This hands-on experience allows them to practice evacuating and making critical decisions in a controlled, realistic environment.

Facilitator's Note [4/4]

At the end of this lesson, Ensure that these activities are conducted in a safe and supervised environment, with proper guidance and support from fire safety professionals or instructors. After each simulation, conduct a debriefing session to discuss participants' experiences and address any questions or concerns they may have.

6. Fire Drill Role-Play:

Objective: Improve communication and coordination skills during a fire emergency.

Activity: Assign roles to participants, such as fire wardens, communication coordinators, and evacuees. Conduct a simulated fire drill where participants act out their roles. Fire wardens guide evacuees to safety, communication coordinators relay information, and evacuees follow evacuation procedures. After the simulation, debrief the participants, discussing what went well and areas for improvement.

Core Values

Discussing fire exit drills in the home can be relevant for honing leadership skills in young adults in several ways.

- Firstly, it instills a sense of **responsibility and preparedness**. Understanding the importance of having an evacuation plan demonstrates leadership qualities such as foresight, accountability, and the ability to make decisions under pressure.
- Secondly, practicing fire drills encourages **effective communication and teamwork**. Young adults can take charge, delegate tasks, and coordinate the evacuation process, enhancing their communication and organizational skills. These are fundamental aspects of leadership.
- Additionally, the **ability to remain calm and think critically** during emergencies is a crucial leadership trait. Engaging in fire exit drills helps young adults develop this skill, allowing them to assess situations, make quick decisions, and guide others to safety – qualities indispensable in leadership roles.
- Moreover, demonstrating leadership during fire drills involves **empathy and awareness**. Young adults can learn to consider the needs of others, ensuring that everyone, including children and elderly family members, can safely evacuate. This empathy and understanding of diverse needs are essential for effective leadership in any setting.
- Lastly, practicing fire exit drills at home can **boost young adults' confidence**. As they become proficient in handling emergency situations, their self-assurance grows. Confidence is key to leadership, as individuals are more likely to lead effectively when they believe in their abilities and decisions.

In summary, discussing and practicing fire exit drills in the home not only enhances practical safety skills but also nurtures essential leadership qualities such as responsibility, effective communication, critical thinking, empathy, and confidence in young adults. These skills are invaluable for their personal development and future leadership roles in various contexts.

Chapter 4

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

SafeHome Escape Quest

SUBJECT TITLE

GOAL

- The goal of an exit drill at home for young adults is to educate and prepare them for safe and effective evacuation in the event of a fire or other emergencies. It aims to instill a sense of responsibility and readiness, ensuring that they can protect themselves and others during a crisis.

2

SUBJECT OBJECTIVES

- To increase young adult's awareness of the importance of having a home fire escape plan
- To instill a sense of personal responsibility for their safety and the safety of others in their household
- To teach young adults essential skills such as recognizing the sound of a smoke alarm and how to respond to it
- To establish a routine of conducting exit drills at home on a regular basis, ensuring that young adults are well-prepared for emergencies

3

LESSON PROPER

- UNDERSTANDING THE NATURE OF HOME FIRES
- Discuss common causes of home fires
- Explain how fires spread and escalate
- Highlight the speed at which a small fire can become uncontrollable



4



5

LESSON PROPER

- IMPORTANCE OF SMOKE ALARM
- Discuss the types of smoke alarms and their placement in homes
- Explain how smoke alarms work
- Emphasize the significance of regularly testing and maintaining smoke alarms



6

LESSON PROPER**CREATING A HOME FIRE ESCAPE PLAN**

- Explain the essential elements of a home fire escape plan
- Discuss how to identify primary and secondary escape routes in different rooms
- Emphasize the importance of having alternative escape plans.

7



8

**LESSON PROPER****PRACTICE AND DRILL PROCEDURES**

- Explain the significance of regular fire drills at home
- Provide guidelines on how to conduct effective fire drills
- Discuss what to do during a fire drill, including evacuating quickly and safely



11

Guidelines on how to conduct effective fire drills.

- 1. Inform Everyone:
- 2. Simulate Real Conditions:
- 3. Sound the Alarm:
- 4. Practice Low Crawls:
- 5. Assign Responsibilities:
- 6. Use Different Scenarios:
- 7. Practice Stop, Drop, and Roll
- 8. Choose a Safe Meeting Point:
- 9. Review and Discuss:
- 10. Regularly Rehearse:

12

What to do DURING a fire drill, including evacuating quickly and safely

- 1. Stay Calm:
- 2. Listen for Alarms:
- 3. Evacuate Immediately:
- 4. Use the Nearest Exit:
- 5. Stay Low if There's Smoke:
- 6. Feel Doors Before Opening:
- 7. Don't Use Elevators:
- 8. Cover Your Nose and Mouth:
- 9. Stay Together:
- 10. Do Not Return Inside:

13

LESSON PROPER**SPECIAL CONSIDERATIONS FOR VULNERABLE INDIVIDUALS**

- Discuss special escape considerations for elderly family members, children, and individuals with disabilities.

14

128 MODULE 5 Basic Leadership Training through Fire Safety

Special escape considerations for elderly family members, children, and individuals with disabilities

- 1. Elderly Family Members:
- 2. Children:
- 3. Individuals with Disabilities:
- 4. Communication Plan:
- 5. Safe Meeting Points:
- 6. Regular Practice:

15

LESSON PROPER

- INTERACTIVE DEMONSTRATIONS AND SIMULATIONS
 - Conduct practical demonstrations of how to use fire safety equipment
 - Simulate fire drills to allow participants to practice evacuation procedures

16

Fire Drill Walkthrough:

- Objective: Familiarize participants with the physical layout of the building and evacuation routes.
- Activity: Conduct a physical walkthrough of the building, emphasizing primary and secondary evacuation routes, locations of fire exits, and assembly points. Participants should physically walk the routes, ensuring they understand the layout and the fastest ways to exit the building.

17

Escape Room Fire Drill:

- Objective: Enhance problem-solving skills and teamwork in the context of a fire emergency.
- Activity: Create an escape room scenario based on a fire emergency. Participants work in small teams to solve puzzles and find clues related to fire safety. To "escape," they must correctly identify evacuation routes, use fire safety equipment, and answer questions about fire prevention. This interactive activity promotes teamwork and reinforces fire safety knowledge.

18

Fire Evacuation Simulation:

- Objective: Simulate a fire emergency and test participants' evacuation skills.
- Activity: Use smoke machines and alarms to simulate a fire emergency in a controlled environment. Participants must follow evacuation procedures, including crawling under smoke, checking door knobs for heat, and using alternative routes if necessary. This realistic simulation allows participants to practice evacuating safely amid challenging conditions.

19

Virtual Reality (VR) Fire Drill:

- Objective: Provide a realistic and immersive experience of a fire emergency.
- Activity: Utilize virtual reality (VR) technology to create a simulated fire emergency scenario. Participants wear VR headsets and navigate through a virtual building while facing various fire-related challenges. This hands-on experience allows them to practice evacuating and making critical decisions in a controlled, realistic environment.

20

Fire Drill Role-Play:

- Objective: Improve communication and coordination skills during a fire emergency.
- Activity: Assign roles to participants, such as fire wardens, communication coordinators, and evacuees. Conduct a simulated fire drill where participants act out their roles. Fire wardens guide evacuees to safety, communication coordinators relay information, and evacuees follow evacuation procedures. After the simulation, debrief the participants, discussing what went well and areas for improvement.

21

CORE VALUES

- responsibility and preparedness
- effective communication and teamwork
- ability to remain calm and think critically
- empathy and awareness
- boost young adults' confidence

22

Chapter 5

Basic Leadership Training through Fire Safety

Basics of Bleeding Control



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 5...

Goal

To teach participants essential concepts enabling them to recognize life-threatening bleeding and the necessary skills to allow them to act promptly and control it effectively. Moreover, it encourages individual participants to become better trained, equipped, and empowered to help in bleeding and other emergencies before the arrival of professional help.

Objectives

By the end of the session, participants should be able to:

1. Appreciate the importance of individual preparedness and training when faced with bleeding and other emergencies.
2. Recognize the signs of life-threatening bleeding
3. Identify the ABC of bleeding control
4. Execute proper procedure using the ABC of bleeding control method
5. Demonstrate how to properly stop bleeding using pressure, packing, and tourniquet application techniques

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. Powerpoint Presentation
3. Others
 - i. Bandages (amount will vary depending on the number of participants)
 - ii. Training CAT Tourniquets
 - iii. Hemorrhage Control Trainer (instructions for construction included)

Total Time of Delivery:

1.5 – 1 hours 45 minutes

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Handouts
 - ii. Visual Examples
 - iii. Training Materials for return demonstration, Bandages (amount will vary depending on the number of participants)
 - Training CAT Tourniquets
 - Hemorrhage Control Trainer (instructions for construction included)

Cheat Sheet

Subject Overview

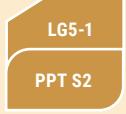
Purpose: This subject provides participants with an introduction to first aid by teaching them the very basics of responses to one of the most life-threatening conditions, severe bleeding. The subject is a grassroots subject to empower individuals to act quickly and save lives when needed. The idea is to provide a simple and accessible training course that is easy to understand and practical in its application, which will, in turn, motivate participants to continue with higher-level emergency training.

General Guidance: The lecturer should explain the concepts in the simplest possible terms using colloquial terms when applicable/ necessary to facilitate understanding. He should deliver this subject to catch the interest of the audience and encourage them to ask questions.

This subject is divided into two segments: the lecture and the return demonstration. The number of participants should be taken into account when allotting lecturers/ facilitators for this subject to ensure that participants are adequately guided. An ideal ratio of facilitator to participant is, at most, 1:20

Things to Consider: This subject deals with topics that may be disturbing to certain members of the audience. The facilitator should provide ample warnings to participants before delivering the presentation. The lecturer should be mindful of cultural biases when providing the subject and citing examples.

Subject Outline

Audio/ Visual Aids	Outline	Notes
1. PRAPARATORY		
 ppt cover	1.1 Greet the participants and start by introducing your name and your teammates.	Greet participants warmly and ask them if they are ready to learn how to possibly save a life.
 LG5-1 PPT S2	1.2 Engage the participants by talking about the subject itself: What is Basic Bleeding Control Warn your participants about the potential for disturbing images on this subject.	You can relate this to current events that have happened in your locality where bleeding control could have saved a life.

Cont...1

Audio/ Visual Aids	Outline	Notes
	1. PRAPARATORY	
LG5-1 PPT S3-4	1.3 Present subject objectives.	Refer to the Goals and Objectives, but this will further be simplified into Assess and Act.
	2. MOTIVATION	
LG5-2 PPT S3-4	2.1 Start the subject by talking about the necessity, applicability, and timeliness of this knowledge through the following points:	Relate local occurrences to this question, and allow participants to voice their insights (1-2 participants)
LG5-3 PPT S5-9	Why do I need this training? <ul style="list-style-type: none">• Leading Cause of Preventable death• Talk about numbers• Average response time for an ambulance• What are immediate responders, and why are they important (the heart of a volunteer)	The material will include average response times; alternatively, you may use local response times or capabilities to hammer the point that merely waiting is sometimes not an option.
LG5-4 PPT S10	Where can you use this training? <ul style="list-style-type: none">• Not just major emergencies• Minor/major accidents •Statistically probability of encountering a severely injured individual	You can talk to participants and ask them if they have encountered road accidents or accidents at home, where this could have helped.
	3. LESSON PROPER	
	Begin the lesson by talking about the Primary principles of immediate response.	
LG 5-5 PPT S11-13	3.1 Safety Your Safety is your First Priority Scene Safety: <ul style="list-style-type: none">• You cannot help if you become injured• Help others only when it is SAFE• If the Situation becomes unsafe (Stop, Move, Take victim if possible)	Reiterate that safety is your priority; you have to use critical thinking when deciding whether to act or not.

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
LG5-6 PPT S14-15	Personal Protection:	<ul style="list-style-type: none">• Usage of PPE• Blood Borne Diseases• Skin as a barrier
LG5-7 PPT S16-18	3.2 ABC of Bleeding Control	Talk briefly about the ABC of Bleeding Control vs. ABC in BLS-CPR
LG5-8 PPT S19-27	Step 1: A - Alert 911	<ul style="list-style-type: none">• Prioritize reporting• How to report an emergency call• Reporting an emergency
LG5-9 PPT S28 PPT S29-34	Step 2: B - Bleeding	<ul style="list-style-type: none">• Locating life-threatening bleeding:<ol style="list-style-type: none">a. Continues bleedingb. Large-volume Bleedingc. Pooling of Blood• Factors to Consider when assessing for Bleeding• Main sites of bleeding<ol style="list-style-type: none">a. Arms and Legsb. Junctional Pointsc. Body/ Chest
LG5-10 PPT S34 PPT S35-37	Recap/ Icebreaker I – Pop Out Quiz	Step 3: C Compress
LG5-11 PPT S35-38	Direct pressure – what is it?	<ul style="list-style-type: none">• Main sites of bleeding• Discuss the steps in applying direct pressure on wounds• When is this applicable?• Other considerations
Demo I – Direct Pressure	Activity I – Direct Pressure Practice	
Wound Packing - what is it?	<ul style="list-style-type: none">• When is wound packing applicable?• Discuss the steps for packing wounds• Materials for wound packing• Other considerations	
Demo II – Wound Packing	Activity II – Wound Packing Practice	

Cont...2

Audio/ Visual Aids	Outline	Notes
<p>PPT S39-44</p>	<p>Tourniquets application – what is it?</p> <ul style="list-style-type: none">• Common misconceptions• How do you place a tourniquet?• Other considerations• Things to remember about tourniquets	
<p>LG5-12 PPT S45-48</p>	<p>Demo III – Tourniquet Application Activity III – Tourniquet Practice</p>	
<p>LG5-13-15 PPT S45-53</p>	<p>3.3 Frequently Asked Questions on Bleeding Control 3.4 From Safety to Handover 3.5 Building Your Trauma Kit</p>	
	<p>Activity IV - Build Your First Aid Kits</p>	
<p>LG5-16 PPT S54</p>	<p>4. RECAPITULATION</p> <p>4.1 Summarize the lesson and provide a generalization of the things the participants have to remember.</p> <p>Scene Safety Personal Safety A – Ask for help (alert 911) B – Find Bleeding C – Compress bleeding with pressure or packing, tourniquet Wait for help to arrive</p>	<p>The summary will be presented in the PPT. Please reference the notes therein.</p>
<p>PPT S53-54</p>	<p>4.2 Take away</p> <p>Explain the importance of every individual having some form of first aid knowledge because it saves lives.</p> <p>Give insights about what else can be learned from immediate responders.</p>	
<p>LG5-17 PPT S55</p>	<p>5. CLOSING EVALUATION</p> <p>5.1 Review the objectives by asking the questions;</p> <ol style="list-style-type: none">1. Why is individual preparedness and first aid training important?2. what are the signs of life-threatening bleeding?3. What are the ABCs of Bleeding Control <p>5.2 Ask if there are questions or clarification</p> <p>5.3 End the subject.</p>	

Basics of Bleeding Control

1.3 Basics of Bleeding Control – What is it? [5-1]



Figure 01 shows an EMT stopping arterial bleeding during a training exercise. Source: Google

Basics of Bleeding Control is an introduction to first aid subject designed for mass adoption at all levels of the public. And is aimed at individual preparedness for massive bleeding (hemorrhage) and guides participants through the three main methods of bleeding control using minimal supplies and limited training. Parts of this subject are attributed to the US Defense Health Agency's (DHA) – *Combat Medic/ Corpsman Tactical Combat Casualty Care CMC/TCCC Course*, which deals with traumatic injuries in field conditions where there is limited access to higher-level medical care and the **American College of Surgeons' STOP THE BLEED** and adapted to work for the Philippine civilian setting.

With Philippine communities having varying access to medical help and the often-limited resources available to our emergency responders, having individuals readily available – with the proper knowledge, skills, and mindset during traumatic accidents can mean the difference between saving a life or losing a loved one.

Trivia:

In 2012, 20 children and eight adults were casualties of a mass shooting at Sandy Hook Elementary School in Newtown, CT. This resulted in a panel of national experts to evaluate the response to such emergencies. Because two of these early meetings were held in Hartford, their recommendations became known as the **Hartford Consensus**. (stopthebleed.org)

2.1 Necessity, Applicability and Timeliness [5-2]

Why do I need this training? [5-3]

Individual Preparedness

From the beginning, one of the main questions participants may have regarding this subject is, “Why do I need this training?” And for that matter, “why do I need any training?” Many people think that the ability to provide immediate aid for bleeding emergencies should be reserved for medical professionals (nurses, doctors) or for those who are professionally trained (I.e., firefighters, police, ambulance crew). This is not the case.

Having more individuals who know how to control bleeding during an accident or mass casualty incident, the greater the chances of people surviving. Even regular bystanders can help save lives by learning the basics of bleeding control in the event someone is severely injured.

THE NUMBER ONE cause of preventable death from trauma is hemorrhage (**massive bleeding**), which accounts for more than 20% of cases. (NCBI – NLM) A 3- year study of trauma care admissions at the Philippine General Hospital showed the top 3 leading causes to be stab wounds, vehicular accidents, and gunshot injuries, all involving extensive bleeding of some type. (NLM 2011)



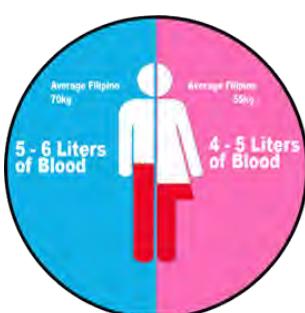
Trivia:

Bleeding Kills. Without any help, a typical adult can die from severe bleeding in as little as five minutes while losing less than 1.5 liters of blood.

How much do I have?

Bleeding to death can happen very quickly because we do not have a lot of blood to begin with. For severe injuries with massive bleeding, a person can bleed to death in **five minutes or less**.

The amount of blood a person can lose before it becomes a life-threatening condition largely depends on age and size. An average adult Filipino male will have between 5 – 6 liters of blood and 4– 5 liters for women, according to the National Institute for Health. (Sharma 2023)



Hemorrhagic shock begins when you lose about 20 percent, or a fifth, of your body's blood or fluid supply. Losing this much blood affects your heart's ability to provide oxygen to all your major organ systems effectively. At 40 percent blood loss, you reach a condition known as **exsanguination** (Asensio et al., 2003), which is deadly if left untreated.

Average Response Times for Emergency Responders

Now, let's take those potential 5 minutes of life for victims of massive bleeding and compare it to how long it takes for help to arrive. While the international standard for emergency vehicle response time of 8 minutes already falls short of the 5 minutes needed for help to come, it is even worse in the Philippines, where the average response time is between **15 – 30 minutes!** (*Esterember et al. 2019*) And even longer for rural areas.

In practical terms, what that means is that a person with massive bleeding (bleeding from a femoral artery wound) has about 5 minutes before they bleed out entirely and will likely not have professional medical assistance at the scene yet. The ability to respond quickly is why immediate responders are so important.

The Importance of Immediate Responders and the Heart of a Volunteer

In the time between the actual event and when emergency services arrive, the only available rescuers are people at the scene who are traumatized by the experience themselves but choose to take immediate action to help another person. Here, we can see the value of having the knowledge and proper skills, with the correct mindset, as not all heroes don capes or wear masks. Immediate responders are ordinary people (like you and me) who are trained in CPR and bleeding control and have the willingness to potentially save a life.

Still, you must recognize the heart of a volunteer. Where others may save lives or help the community because it is their job, volunteers help because they can and because it is right to do so.

ARE YOU READY and WILLING?

Where can I use this training? [5-4]

Basic bleeding control skills can be used ANYWHERE.

Although some of the examples used might be characterized as worst-case scenarios, such as shooting incidents or the aftermath of violent encounters, it is more than likely that the situations individuals are bound to encounter are everyday occurrences we hear about in our day-to-day lives. Things like road accidents are so common on our streets, incidents involving heavy machinery, Broken glass windows, or accidents at home.

There is a high likelihood that most people will encounter someone who is severely injured in one way or another. Having the necessary skills and mindset can allow you to help.

Facilitator's Note [1/18]

The lecturer may relate previous response times for their locality, taking into account the current location of the activity vs. the nearest fire station, police station, hospital, and m/cdrmo office.

Example: We are currently located at [place], which is [distance]km away from the fire station; it will take approx. [time] to travel in case of an emergency.



Facilitator's Note [2/18]

The lecturer may engage participants by asking them about situations that they have encountered where the presence of an immediate responder could have made a difference. Ask them what was the outcome. (Allow 1-2 answers)



Trivia:

According to the Philippine Statistics Authority (PSA), road accidents make up the highest non-disease cause of death in the Philippines. This accounts for more than 11,000 individual deaths in 2022. That is a 1:8000 chance of more than 31 deaths a day, excluding injuries. (*Santos 2023*)

3.1 Primary Principles: Safety [5-5]

Your Own Safety is your TOP PRIORITY

The willingness to help out, combined with that rush of adrenaline when encountering an emergency, can sometimes overwhelm individuals. However, you need to remember that in any situation, one of the priorities before attempting to help someone else is your safety. In the same vein, ***initiate care only when it does not put your safety at risk.***

An example would be road accidents in the middle of high-speed traffic. Carelessly crossing traffic to “save” someone may be heroic, but in the end may result in causing two accidents instead of one. Additionally, if you become injured, not only will you become unable to help others, but you will also become a burden that medical responders who will need assign resources to. Primarily, the objective is to mitigate the damage, not add to it.

Basic Safety Procedures for Emergency Situations

I. Think Safety at the Scene



Stop, Breath, Think. Taking a moment to gather your thoughts will save you plenty of time later on and may prevent you from forgetting something important or doing something reckless. Remember, think before you act.

Assess. At this point, look at your surroundings and look for potential dangers still present. Ask yourself these questions:

- Is it safe where I am right now?
- Is it safe where my victim is right now?
- Will I be safe if/when I go there?
- If you answer yes, move to the next step.

Continue Assessing. At any point if the scene becomes unsafe:

Stop. Move to Safety. **Take the victim with you If possible.**

NOTE:

In a shooting/stabbing incident, make sure you are not providing care if there are still active hostilities. In a motor accident, make sure you do not rush into oncoming traffic.

II. Protect Yourself – Glove Up

Another aspect of personal safety is ensuring that you are protected from diseases that the victim may or may not possess since there will be situations where you may or may not know the victim personally. For bleeding emergencies, the primary consideration when it comes to personal protection is blood-borne pathogens (diseases).



Glove Up. It is always encouraged to wear personal protective equipment (PPE) if it is available to you to act as a barrier against blood and other bodily substances. (DHA CMC/ TCCC Module 6)

However, during emergencies, the skin on your hands, if it is intact and free from wounds or cuts, is a good barrier against blood-borne pathogens. This, however, increases the risk of disease transmission when compared to wearing gloves.

NOTE:

if you get blood or other body substances on your skin, wash it with soap and water as soon as possible and make sure to inform a health care provider or first responders.

3.2 Primary Principles: ABCs of Bleeding Control^[5-6]
Facilitator's Note [3/18]

Before continuing the discussion, have a show of hands of all participants who have had previous training in first aid or BLS. Ask them if they recall what the ABCs in Cardio Pulmonary Assessment Stand for (allow 1-3 attempted answers) (Answer: Airway Breathing Circulation)

ABCs - Bleeding Control vs Basic Assessment

Individuals who may have prior knowledge about Cardio Pulmonary Resuscitation (CPR) and conducting a basic assessment are familiar with the ABCs as Airway, Breathing, and Circulation. Talking strictly about hemorrhage (Bleeding) control, however, the procedures can be broken down into three (3) main parts—Alert 911. Bleed. Compress. Or collectively known as the **ABCs of Bleeding control**.

NOTE:

Not all cases of life-threatening bleeding can be seen from the outside. Depending on the injury, internal bleeding is just as bad, if not worse, than open wounds. So, upon witnessing traumatic injury. Call, Call, Call for Help!

Step 1: A – Alert 911 (Call for Help) [5-7]



In any emergency, calling for help should be high on your priorities because getting professional medical assistance as soon as possible gives our victims the best chance of survival. Understand that EMS, firefighters, and other emergency services will only start to respond **after** being notified. (**May take up to 15 minutes**)

This is a simple yet *most often overlooked* part of the process because most individuals will assume that other bystanders will automatically inform authorities simply because the scene of an accident is in plain view.

"Just because they see you does not mean they will call for help for you."

Important: If you are unable to call emergency services, make sure to delegate this task to a bystander and follow up to verify they have actually made it.

Making the Call

When calling for help, it is essential to relay complete information. This will help emergency services identify needed resources and get to you in the quickest way possible.

When calling 911, remember to:

- **Know your Location.** Include landmarks or street names to assist responders in finding your exact location
- **Specify your Emergency.** Different emergencies may require different resources from responders. Telling them the nature of the incident will help them determine what is needed. (ex: traffic accident, shooting incident, lightning strike)
- **Keep Calm and Follow Instructions.**

By keeping calm, you are better able to disclose information and listen to instructions from the helpline.

NOTE:

Most emergency call centers will be able to give you further instructions on what to do next

Step 2: B – Bleeding [5-8]

The second step in the process is identifying bleeding. The primary task here is first to find the site or where someone may be bleeding from and second to classify whether this is a life-threatening bleeding or not.

For life-threatening bleeding, you need to look for the following signs (3): **Pulsating or Steady Bleeding, Traumatic Amputation, and Blood-Soaked Clothing/Bandages.** (DHA CMC/TCCC Module 5,6)

Facilitator's Note [4/18]

The facilitator may ask participants if they know the emergency numbers for the local BFP, PNP, and CDRRMO and may promptly share these numbers.

**NOTE:**

Bleeding assessment here has intentionally been simplified to facilitate easy understanding from a "layman" perspective.

I. Pulsating or Steady Bleeding

Although a wound that continues to bleed may point to a life-threatening hemorrhage, some wounds tend to bleed profusely but are not immediately life-threatening (i.e., scalp wounds), so it is important not solely to base your assessment on a single metric. Try to look for:

- **Blood that is oozing out of the wound**

(Steady Bleeding)

- **Blood that is spurting out from the wound**

(Pulsating Bleeding)

**II. Traumatic Amputation and****III. Blood-Soaked Clothing/ Bandages**

As the name implies, this is not bleeding that a person would expect from a scratch or cut. Large-volume bleeding suggests massive hemorrhage where the wound may have soaked through multiple bandages or the victim's clothing and pooled on the floor. Cases where a victim has lost a limb automatically indicate a life-threatening wound.



- **Clothing soaked in blood**

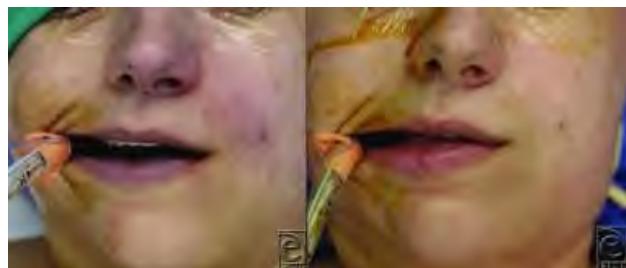
- **Bandages soaked with blood**

- **Blood pooling on the ground**

- **Loss of a limb or other part of the body**

(ex. Hands or leg)





Additionally, look for the signs of **hypovolemia (low blood volume)**

- Cold, clammy, and/or pale skin
- Bluish tone on the skin and lips
- Confusion, Dizziness, or loss of Consciousness (Fainting)
- Difficulty Breathing and excessive sweating

Two Things to Consider When Assessing Bleeding

I. The possibility of Multiple Injuries

Always be aware that victims may have multiple injuries and may you to stop multiple bleeds. In this case, prioritize the most extensive bleed first.

II. Not all Bleeding may be Visible

Life-threatening bleeding is not limited to external (*comprehensible*). In many cases, victims may die from internal bleeding (*non-comprehensible*) faster. Just because you don't see blood does not mean there are no injuries. Secondly, clothing can hide signs of blood loss. A jacket, pillows, or the foam of a bed may conceal the amount of blood lost and make finding the location of the bleeding harder.

Trivia:

Did you know that even a moderately thick jacket can soak up to a liter of blood without leaking?

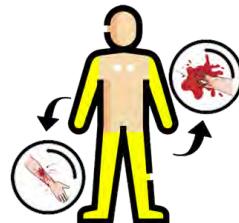
Bleeding Locations and the Different Approaches

In basic bleeding control, we can classify wounds according to their general location on the body because the general location of an injury will dictate what type of techniques can be used to control bleeding.

I. Extremities

Extremities are divided into either upper (Hands and arms) or lower (thighs and legs) and are the most frequent cause of preventable death from bleeding.

Bleeding involving these sites is usually managed using either a **direct pressure application** or a **tourniquet application**.



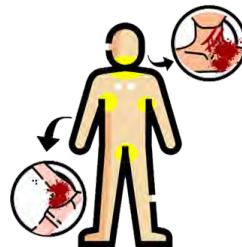
II. Junctional Points

This pertains to your Neck armpits and groin areas.

Bleeding at these sites is commonly caused by injuries to the large blood vessels that run through the junctional area. These are generally larger than those found in the limbs but can still be compressed using direct pressure.

Life-threatening bleeding in these sites usually indicates deep wounds, which are more challenging to manage without medical supplies.

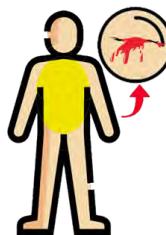
These are managed using **direct pressure application** and/or **wound packing**.



III. Trunk/Body

This involves your central core, meaning everything below your neck, above your groin area, and in between your shoulders.

Generally speaking, injuries to these sites likely cause internal bleeding and can only be managed pre-hospital using **direct pressure**.



**This Bleeding CANNOT
be stopped outside a hospital.
Expedite transport!**

Facilitator's Note [5/18]

Recap/Ice Breaker I – Pop Out Quiz: Recap discussed topics (will be found in the PPT presentation) participants by asking them to first sit with arms stretched up above their heads while answering questions. (Additional instructions are located in the activities section.) (5 minutes) PS: This allows participants to stretch and move.

Step 3: C – Compression [5-9]

The third step in the process is the application of pressure to the injury. For basic bleeding control, we teach three (3) methods that can be used to stop bleeding:

When we talk about compression in bleeding control, remember:



P – Pressure (Direct Pressure)

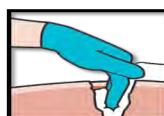
P – Packing (Wound Packing)

T – Tourniquet (Tourniquet Application)

Although each has its pros and cons, all these methods have one thing in common — compressing a bleeding blood vessel to stop the bleeding.

Note:

Methodologies used here are intentionally simplified to allow participants to quickly absorb the essentials of how to stop life-threatening bleeding. (this is a layman's approach)

**Facilitator's Note [6/18]**

The facilitator may ask participants whether or not they have previously encountered the terms wound packing and tourniquet application. What are their thoughts on it? Specifically, tourniquets.

(Allow participants to state the common misconceptions about tourniquets, which we will answer moving forward.)

**Considerations when planning your approach**

During step 1 (Safety), we talked about assessing the area for safety; now, here in step 3, before doing actual compression, participants should also evaluate the (1)

Availability of Supplies/ Resources and (2) **Ability to apply enough pressure.**

Availability of Supplies / Resources

What do you have on you? A tourniquet, a bandage, or just a clean piece of cloth. Does your location have a first aid kit available? If so, what supplies do they have in them? These are all considerations you need to plan for when approaching any bleeding emergency.

Carrying medical supplies with you is an intelligent choice, best case, you help save a life, maybe even your own.

Applying Enough Pressure

Some victims may be larger (or smaller) than others. Likewise, responders come in all sizes.

So, how much pressure is enough?

This will depend on your victim and the location of the bleeding. To effectively stop major bleeding requires Firm, continuous pressure for a minimum of **3 – 15 minutes**.



I. Compression Techniques – Direct Pressure (Pressure) [5-10]

This technique can be used on bleeding in any part of the body and involves putting direct pressure on the actual wound site. This is effective for most external bleeding, even arterial bleeding.

Ideally, a sterile gauze is used. However, a clean cloth may be used. (During an emergency, if supplies are not available, direct pressure with a gloved hand will work as well.)

Note: Identifying the wound beforehand is vital to make sure that you can hold direct pressure on the correct location

Using Direct Pressure Technique:

After Ensuring your safety, calling 911 and identifying the life-threatening bleeding:

1. Make sure that the wound is supported on a firm, flat surface
2. Using a clean gauze or cloth (if available), press down as hard as you can using your hands or fingers. Use two hands if possible.

Facilitator's Note [7/18]

Demo I – Direct Pressure:

Demonstrate applying direct pressure on a wound using the HCT while narrating the steps found in this manual. (Please refer to the activities section.)



Pressure should be forceful and continuous

3. If the bleeding stops, maintain pressure on the wound until help arrives



Things to Remember

- Make sure you can put firm pressure on the wound by having your elbows straight and using your body weight to push directly down.
- Focus on the location of the bleeding
- Use just enough gauze to cover the injury. Using too much will disperse the pressure and will prevent you from adequately seeing if the wound is bleeding around your bandage.
- Do not attempt to release pressure to check the injury. If it stops, maintain pressure
- This may hurt; you need to communicate this with your patient

Facilitator's Note [8/18]

Activity I – Direct Pressure

Practice: Have one facilitator for each group assist in practicing direct pressure application (10 minutes)



II. Compression Techniques – Wound Packing (Packing) [5-11]

This technique involves taking a gauze, cloth bandage, or even a clean t-shirt and pushing them down into a wound

to allow you to apply pressure directly on the bleeding site (artery or vein). This is done for **large, deep wounds** found at (1) junctional points or even (2) extremities where simple direct pressure would not work effectively.

Note: Identifying the wound beforehand is vital to make sure that you can hold direct pressure on the correct location

Why pack wounds

The idea of simply using direct pressure over large and deep wounds may not be effective at stopping bleeding because of the lack of pressure on the actual artery/ source of bleeding.

IMPORTANT: Wound packing is not advised for injuries to the body because inserting gauze or other materials into the chest (thoracic cavity) will result in compressing the lungs. Also, packing abdominal bleeding can result in exposing the patient to a lot of infections.

Facilitator's Note [9/18]

Demo II – Wound Packing:

Demonstrate how to pack a wound using the HCT while narrating the steps found in this manual. (Please refer to the activities section.)



Wound Packing Technique (SMC-EMS 2023):

After ensuring your safety, calling 911 and identifying the life-threatening bleeding:

1. Expose the wound site by opening clothing. You may need to wipe excess blood to locate the source of the most active bleeding
2. Using a clean gauze (if available) or cloth, pack the wound by feeding the gauze directly into the bleeding site

Dressing should be packed tightly until all space is filled up

3. Apply firm pressure on the packed wound and hold until help arrives

Things to Remember



- Generally used for areas where a tourniquet cannot easily be applied.
- **This WILL HURT;** inform your patient, and try to reassure him/her.
- If bleeding continues and bandages become soaked, pack on more gauze or clothing and reapply harder pressure.
- Having bandages or packing gauze readily available reduces the chances of infection down the line. Carrying medical supplies on a daily basis pays dividends.

Facilitator's Note [10/18]

Activity II – Wound Packing

Practice: Have one facilitator for each group assist in the correct technique (10 minutes)

III. Compression Techniques – Tourniquet Application [5-12]

What is a Tourniquet?

This is essentially a constricting band that is placed above

(proximal) an injury to stop blood flow to that extremity completely. They work by compressing the large blood vessels (arteries) found deep in our extremities.

In the past, pieces of clothing, belts, or pieces of cloth were used as improvised tourniquets with varying effectiveness. Nowadays, there are commercially available tourniquets (which are more effective) at a relatively affordable price.

(for this subject, we recommend using a Combat Application Tourniquet (CAT))

Storing and Staging Tourniquets

“Staging” a tourniquet means preparing it in such a way that it can be deployed with minimal delay. This can be a lifesaver in two ways as it helps you to quickly apply it to someone else or be able to apply a tourniquet on yourself using only one hand.

How many do I need?

Well, it depends. More is always better, but realistically, each individual should carry at least one.

Common Misconception Surrounding Tourniquets

Using Tourniquets has always been surrounded by many myths and misconceptions. While it is true that in the past, some tourniquets may have aggravated some injuries, it had more to do with incorrect application rather than the tourniquet itself. Standardized tourniquets and training such as these have now made their employment much safer. Tourniquets are currently the most effective method for stopping life-threatening bleeding, according to the American Red Cross (2021)

Myth 1: Tourniquets are a last resort

WRONG! This is a dangerous myth because a responder may try to delay using a tourniquet for a patient who has already bled out for some time. You have to remember that massive bleeding can kill in a matter of minutes and well before first responders can arrive. Tourniquets should be your first option for these injuries. (*SM 2022*)

Myth 2: If you use a tourniquet, they will lose that limb

OLD SCIENCE! Most recent studies have shown that a tourniquet can be applied for up to 2 hours before any lasting damage occurs. (*Mayo Clinic 2022*) Data collected by the Joint Theater Trauma Registry of Emergency Bleeding Management over the last twenty years showed that tourniquets are safe and effective and do not result in limb loss.

Facilitator's Note [11/18]

Before Continuing, the facilitator may entertain questions regarding direct pressure and wound packing. (3 minutes)



Sample CA-T Tourniquet illustrating parts.

Source: meditackits.com

Facilitator's Note [12/18]**Demo III – Tourniquets:**

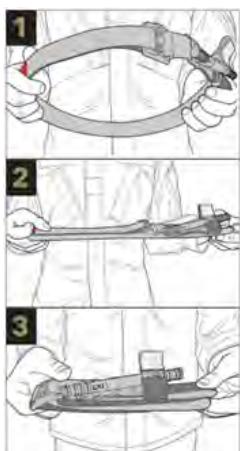
Demonstrate applying a tourniquet on a limb using the HCT while narrating the steps found in this manual. In addition, apply a tourniquet on yourself using the method prescribed (please refer to the activities section)

► **Myth 3: A tourniquet is tight enough when it becomes painful**

WRONG! Although a properly applied and tightened tourniquet will hurt, this should not be used as a basis when deciding if it is tight enough. Remember, a tourniquet should be tightened until the bleeding stops, NOT until it becomes uncomfortable. (SM 2023)

How to stage a CA-Tourniquet ([narescue.com 2023](http://narescue.com/2023)):

1. Pass the red tip through the slit in the buckle. Pull 8" of the band through, fold it back, and adhere the band to itself.
2. Flatten the loop formed by the band. Place the buckle in the middle of the flattened band. Open the Velcro timestamp and place it on the side
3. Fold the **Tourniquet** in half, placing the buckle at one end. The **tourniquet** is now ready to be placed in your medical kit.

**Applying a Tourniquet**

1. Insert the wounded extremity (arm or leg) through the tourniquet and position it **2 – 3 inches** above the injury
2. Pull the self-adhering band through the buckle tightly and fasten it back on itself
3. Twist the windlass rod until the bleeding stops
4. Lock the windlass rod in place on the windlass clip
5. Fasten the remaining portion of the band through the windlass clip as far as you can go
6. Secure the windlass rod on the clip by pulling the timestamp to the opposite hook Velcro
7. Write the time of application on the timestamp using a pen or marker.

Things to Remember

- If a victim has life-threatening bleeding and you have a tourniquet on hand, you can use it as your first response.
- Do not Apply a Tourniquet over the knee or elbow joints
- This **WILL HURT A LOT**. Inform your patient and try to reassure him/her.
- If bleeding continues, try to tighten it more or use another tourniquet above the one you just used
- Once a tourniquet is on, DO NOT LOOSEN under any condition. This is a job for the physician, not you.

Other Considerations for Tourniquets

I. Improvised Tourniquets

Although using improvised tourniquets is mainly ineffective and not generally recommended ([NIH.gov](#)), **the best tourniquet is the one you have with you.** In situations where no other resources are available, an improvised tourniquet is better than nothing at all. Just remember the risks: Bleeding **MAY WORSEN** or **NOT** be controlled entirely.

1. Position a half knot **2 – 3 inches** above the injury using a piece of cloth at least 2 inches in width
2. Complete the knot over your **STURDY** windlass rod (at least **5 inches** long)
3. Rotate the windlass to tighten until bleedings stops.
4. Use another piece of cloth or other material to secure the windlass rod and prevent it from loosening.

Facilitator's Note [13/18]

Please Demonstrate Using an Improvised Tourniquet

II. Amputated Limbs

Applying a tourniquet on a limb that has been cut off should be the number one thing you do when faced with the situation. Even if the stump may not be bleeding much, preemptively placing a tourniquet will save the victim from a lot of blood loss.

Note:

The mechanism of how blood vessels temporarily spasm during shock in the event of an accidental amputation is omitted to simplify the discussion. Take away: Even if initially the severed extremity is not bleeding, eventually it will start to bleed profusely.

Facilitator's Note [14/18]

Activity III – Tourniquet Practice:
Have one facilitator for each group assist in the correct technique (10 minutes)

III. Tourniquet Application for Children

Commercially available tourniquets come in a standard size. As a general rule, if a child is too small to fit a tourniquet on snuggly, it means that they do not typically require the use of one.

Children have a much lower average systolic blood pressure at 100mmhg than an average adult at 120mmhg. This means that it is easier to control bleeding by either using direct pressure or wound packing.

3.3 Frequently Asked Questions on Bleeding Control [5-13]

I. Impaled Objects

Keep an impaled object in place if at all possible. Attempting



to remove an impaled object may result in massive bleeding. Instead, apply pressure around the object.

II. Washing Wounds

Don't wash a wound that is bleeding heavily. You may make it bleed more because the clots that typically form around any injury can be removed by washing with water.

For minor cuts and scrapes, you can wash the wound to remove any dirt. You should also wash animal bites with soapy water if they are not bleeding heavily.

Facilitator's Note [15/18]

Before Continuing, the facilitator may entertain questions regarding tourniquets and reinforce if there is any confusion.
(3 minutes)

► 3.4 From Safety to Hand Over [5-14]

Now, we will present the model flow used during bleeding emergencies. This will guide you through the decision-



making process step by step.

3.5 Building Individual First Aid Kits [5-15]

In carrying medical supplies, considerations for weight, bulk, and affordability should be taken. As the saying goes, **the best trauma kit is the one you can afford and are willing to carry**. At the very least, everyone should be having a tourniquet.



Individual First Aid Kit (IFAK) (trauma) contents:

By order of importance

- 1x Packing Gauze/ Compressed Gauze
- 1 Pair Gloves
- 1x CAT Tourniquet (or analog)
- 1x Compression Bandage/Pressure Bandage
- 1x Trauma Shears

Important: If you are going to bring medical supplies, make it a priority to learn how to use them. However, just having medical supplies available already makes a big difference in an emergency.

Ordinary Items as Improvised Tourniquets

While carrying medical supplies on a daily basis is an excellent part of preparedness, situations arise where you will either not have supplies with you, or there are too many victims, and you run out. As we have already talked about, improvised tourniquets are often ineffective at stopping major bleeding. However, in a worst-case scenario, any tourniquet is better than none at all. Still, when selecting your improvised tourniquet, make sure that the material is strong and at least 2 inches in width. Windlass rods should be sturdy and secured correctly. Lastly, always check improvised tourniquets after being applied.

Preparedness – The Importance of Knowing How to Use Your Kit

As with any skill, particularly those that happen in a high-stress environment, training is vital, while many of the items included in an Individual First Aid Kit (IFAK) are intuitive and can be used by the general public in the event of an emergency, constant training is a crucial component to a successful outcome. Being familiar with your kit contents and their instructions for use will help not only with the correct application but also when stress levels are heightened and time is critical; muscle memory can empower the responder to deliver quick and effective action.

Facilitator's Note [16/18]

Activity IV – after the discussion, Allow participants to create first aid kits by using items provided during the subject – instruct participants to temporarily carry these items (this will be used during the next activity)

4.1 Recapitalization [5-16]

Safety

Own Safety is First Priority

ABCs of Bleeding

A – Alert 911

How to Call for Help:

B – Identify Life-threatening Bleeding

Three wound Locations: Extremities, Junctional Points, Body

C – Compress

Direct Pressure

Wound Packing

Tourniquet

Individual First Aid Kit

Importance of Immediate Responders and the Heart of a Volunteer

Facilitator's Note [17/18]

Do a brief run-through of the following topics, only focusing on important notes. Try to say something about each item on the list.

4.2 Takeaway^[5-17]

Events resulting in life-threatening injuries can happen anytime, anywhere, and to anyone. In this sense, the man or woman next to you, behind you, your neighbor, best friend, classmate, teacher, colleague, or even a stranger has the potential to make a difference in these life-or-death emergencies. In reality, it is straightforward to save someone's life from a massive hemorrhage, even with something as simple as a t-shirt, if you know. This is why everyone must have at least some capacity to render first aid and the willingness to do so. With the correct mindset, these individuals, me and you, have the power to potentially save a life.

So, what is next? We encourage you to pursue additional training and experience because it will only make you better, not just as an immediate responder but also as a person. Stay prepared, stay vigilant, and continue learning because, remember, **movimiento es vida**

(Relay the training roadmap possibilities through the MARCH acronym.)

Facilitator's Note [18/18]

Allow participants to share what they have learned during the subject.

5.1 Closing Evaluation^[5-18]

1. Why is individual preparedness and first aid training important?
2. what are the signs of life-threatening bleeding?
3. What are the ABCs of Bleeding Control?
4. What are the three methods of controlling bleeding?

How to build your Hemorrhage Control Trainer:

Source: <https://www.youtube.com/watch?v=EihYzGZ8Kss>

Items needed:

- 1x 60cm length wooden dowel or 1inch diameter PVC pipe
- 1x 60cm length Foam pool noodle (with inside diameter enough to fit wooden dowel)
- 2x plastic tubing with tube clamps (may use aquarium tubing)
- 2x liquid storage vessel (an IV bladder will work)
- A piece of tarp was cut to form the outer layer
- Adhesive (rugby or analog)

Instructions:

1. Run the plastic tubing on top of the PVC/wooden dowel and secure it with tape. Run one tube along the entire length (will serve as tourniquet demo line) and one tube until the middle (will serve as wound packing demo line)
2. Take half sections of PVC pipe and sandwich it over the plastic tunings to assist with compression, secure with tape
3. insert the wooden dowel/PVC pipe assembly in the center hole of the noodle with the foam tubing facing away from the lengthwise cut.
4. Create a cut (3-4 inches in length) facing the wound packing demo line to serve as a deep wound channel. (These should fit snugly but not too tight that it compresses the tubing.)
5. secure this entire assembly with tape
6. apply adhesive on the tarp and cover the entire assembly. This will act as a skin
7. Position slits at the cut for the wound packing demo line to serve as wounds.
8. when in use, you may attach IV tubing with bottles.
9. fill this with a colored liquid to simulate blood during demonstrations and activities.

This device will be able to simulate the correct amount of pressure needed to completely compress a blood vessel during direct pressure, wound packing, and tourniquet application. You may paint this prop to make it more realistic.

This is a multi-use prop, which can also be utilized when teaching first aid and bandaging techniques as a refresher for personnel. This is a worthy investment for the EMS sections of each station.

Activities

I. Recap - Pop Out Quiz (10mins)

This activity will serve both as an ice breaker (by doing stretching exercises) as well as a way of engaging participants in a fun and competitive manner. This is a group quiz using the preassigned groupings. The goal is for all team members to reoccupy their seats. The first team, with all members sitting down, wins. You will need three bells (or anything which can make noise) for this game.

Instructions:

1. have all teams form into lines near the center of the classroom.
2. instruct all participants that this is a team quiz; the goal is for the entire team to be able to sit down.
3. the facilitator will ask a series of questions on the current topic.
4. 3 bells will be placed on the floor, 3-5 ft in front of the teams. Players at the front of each line will need to “pop out” and run to ring the bell above their head before answering. Only one team may answer at a time.
5. Answer correctly, and the player will be able to sit back down and answer incorrectly, and a member from that team will need to stand back up and join the line.
6. Other teams may “steal” if the first team answers incorrectly.
7. First team to have all members seated wins.

Questions: (You may add more questions as long as it is based on the topics discussed.)

1. From which US agency was BBC attributed and then adapted for the Philippine setting?

(US Defense Health Agency)

2. What event prompted the creation of BBC?

(2012, mass shooting at Sandy Hook Elementary School in Newtown, CT)

3. What is the number one cause of preventable death according related to trauma?

(Hemorrhage)

4. What percentage does the answer to the previous question (hemorrhage) account for?

(twenty percent)

5. How much blood does the average Filipino male have?

(5-6 liters of blood)

6. At what percentage of blood loss does shock start to undergo hemorrhagic shock?

(twenty percent)

7. What fatal condition occurs at 40% blood loss?

(exsanguination)

8. Left untreated, bleeding in a significant artery can be fatal in how many minutes?

(5 minutes)

9. What are the ABCs of Bleeding Control?

(A – Alert 911, B – Bleeding, C – Compress)

10. What is the top priority for individual responders?

(Own safety)

11. what is the global standard response time for EMS?

(8 minutes)

12. How are immediate responders critical?

(allow participants to elaborate)

13. Where can you use Bleeding Control Skills?

(Anywhere)

14. What do you call the act of looking at your surroundings to check for safety?

(Assessment)

15. What is the average response time for EMS in the Philippines?

(15-30 minutes)

16. Three things to remember when making a call for help?

(Know your location, specify emergency, keep calm, and follow instructions.)

17. Aside from 911, what number can you call for emergencies

(Local BFP hotline number)

18. what three things do you look for when assessing for life-threatening bleeding?

(Pulsating or Steady Bleeding, Traumatic Amputation, and Blood-Soaked Clothing/ Bandages.)

19. what is the primary task in step 2 “bleeding”?

(Finding Life-threatening Bleeding)

20. Give at least three symptoms of hypovolemia.

(see discussion area)

21. What are the three basic bleeding locations we can treat in the human body?

(extremities, body, junctional points)

22. Which techniques can you use for junctional points?

(Direct Pressure and wound packing)

23. Extremities are divided into two, namely?

(Arms and Legs)

Demonstrations

I. Compression – Direct Pressure

This demonstration will show the correct technique when applying direct pressure.

1. taking the HCT, attach an IV tubing line filled with colored liquid to simulate blood and have another facilitator control the flow by pinching or clamping the tubing as needed.
2. Have a participant or other volunteer sit on the floor with his leg outstretched to simulate an injury and place the HCT next to the leg.
3. Explain the need to assess for safety and call 911 before taking any other action. Drill participants on what they should do (for example, when the scene becomes unsafe, do you have gloves, what items do you have with you, or what number to call or what to say)
4. Explain the need to introduce yourself and ask for consent (if the victim is unconscious and no one is around, this is implied consent)
5. B – Bleeding (locate the site of bleeding). Say: “*What supplies do you have on you? A cloth or a bandage? If you come upon major bleeding. Make sure you are holding direct pressure on the correct spot. Once you have identified the bleeding, you can apply direct pressure by using one or two hands and placing them firmly on the wound; if available, you can use a bandage or a clean piece of cloth. Make sure not to use too much of both because this can obstruct your view. If the bleeding stops, maintain pressure until first responders arrive.*”
6. Demonstrate the technique by kneeling in front of your victim and positioning yourself so that you can apply even pressure.
7. The other facilitator then unclamps the tubing to allow bleeding to occur; use this to demonstrate how a life-threatening wound behaves (the other facilitator may squeeze the bag to increase pressure)
8. Apply firm, direct pressure on the wound until the bleeding stops. Elbows should be locked to allow you to use your body weight.

II. Compression – Wound Packing

This demonstration will show the correct technique when performing wound packing.

1. taking the HCT, attach an IV tubing line filled with colored liquid to simulate blood and have another facilitator control the flow by pinching or clamping the tubing as needed.
2. Have a participant or other volunteer sit on the floor with his leg outstretched to simulate an injury and place the HCT next to the leg.
3. Explain the need to assess for safety and call 911 before taking any other action. Drill participants on what they should do (for example, when the scene becomes unsafe, do you have gloves, what items do you have with you, or what number to call or what to say)
4. Explain the need to introduce yourself and ask for consent (if the victim is unconscious and no one is around, this is implied consent)
5. B – Bleeding (locate the site of bleeding). Say: “*What supplies do you have on you? A cloth or a bandage? When packing a wound, it is first important to identify the depth of the wound and exactly where it is bleeding. For this, you may need to remove clothing to expose the wound. For deep or gaping wounds, you may need to use your finger to clean out the wound bed to identify where it is bleeding. Take a bandage or a clean piece of cloth and begin stuffing the wound; make sure you are packing the dressing tightly until it's filled up while applying pressure the entire time. Once full, take the rest of the bandage, place it over the wound, then apply firm direct pressure; if the bleeding stops, maintain this until help arrives.*”
6. Demonstrate the technique by kneeling in front of your victim and positioning yourself so that you have access to the site.
7. The other facilitator then unclamps the tubing to allow bleeding to occur. Use this to demonstrate how a life-threatening wound behaves (the other facilitator may squeeze the bag to increase pressure)
8. use 1-2 fingers to swipe blood away from the wound bed (bleeding will continue) using your dressing, pack the wound tightly, and apply direct pressure using the previous technique.

Note: these activities will allow participants to see how messy an actual wound can be and will stress the importance of proper PPE, such as gloves and goggles. (This is connected to one of the previous activities on preparedness and volunteerism.)

III. Compression – Tourniquet

This demonstration will show the correct technique when applying direct pressure.

1. taking the HCT, attach an IV tubing line filled with colored liquid to simulate blood and have another facilitator control the flow by pinching or clamping the tubing as needed.
2. Have a participant or other volunteer sit on the floor with his arm outstretched to simulate an injury and place the HCT next to the arm.
3. Explain the need to assess for safety and call 911 before taking any other action. Drill participants on what they should do (for example, when the scene becomes unsafe, do you have gloves, what items do you have with you, or what number to call or what to say)
4. Explain the need to introduce yourself and ask for consent (if the victim is unconscious and no one is around, this is implied consent)
5. B – Bleeding (locate the site of bleeding) says: “Once you have found the site of bleeding, your first question should be, am I carrying medical supplies, or does the facility have medical supplies? If so, do they have a tourniquet? When placing a tourniquet, you should first look for the windlass rod, the windlass clip, and the Velcro strap. When putting on a tourniquet, remember to place it 2–3 inches above the injury. Pull the Velcro strap tight and fasten it. Then, turn the windlass rod until the bleeding has stopped. This will hurt; you have to make your patient understand that. Once the bleeding has stopped, secure the windlass rod on the windlass clip. Bring the rest of the Velcro strap through. Secure the windlass clip with the timestamp strap. Then, use a pen or marker to write the time of application.”
6. Demonstrate the technique by taking your tourniquet. If the tourniquet has yet to be staged before use, prepare it.
7. The other facilitator then unclamps the tubing to allow bleeding to occur. Use this to demonstrate how a life-threatening wound behaves (the other facilitator may squeeze the bag to increase pressure)
8. Apply the tourniquet following the instructions listed in the discussion section.

MARCH Acronym Training Roadmap

M – Massive Hemorrhage (Basics of Bleeding Control/Basic First Aid)

A – Airway (FBAOM)

R – Respiration (BLS- CPR)

C – Circulation (BLS- CPR)

H – Hypothermia/ Head Injuries (Shock Management)

Footnotes and References:

NLM 2011, A profile of deaths among trauma patients in a university hospital: The Philippine experience
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3134925>

Estamber et al. 2019, Optimization-based Approach Model for the Improvement of the Performance of Emergency Medical Service Ambulances <https://www.ieomsociety.org/ieom2019/papers/293.pdf>

Santos 2023, Guide, What Should You Do When You Witness a Road Accident
<https://www.topgear.com.ph/features/feature-articles/road-accident-sop-2023-a4682-20230814-lfrm>

narescue.com 2023, Storing the CAT Tourniquet in Quick Launch Configuration
<https://www.narescue.com/cat-quick-launch-storage-instructions>

American Red Cross 2021, How to Stop Severe Bleeding
<https://redcrosschat.org/2021/05/20/how-to-stop-severe-bleeding>

Stopthebleed.org, Our Story
<https://www.stopthebleed.org/our-story/>

DHA TMC/CCC Module 5
<https://learning-media.allogy.com/api/v1/pdf/2c58a0ao-913a-4675-86c3-94c9573e5c22/contents>

SMC-EMS 2023, Wound Packing Hemostatic Gauze
https://www.smchealth.org/sites/main/files/file-attachments/fp27_-_wound_packing_-_hemostatic_gauze.pdf?1651354882

DHA TMC/CCC Module 6
<https://learning-media.allogy.com/api/v1/pdf/aecd1c8-105f-4320-8c31-334ecf01ebfc/contents>

Sharma 2023, Physiology Blood Volume
<https://pubmed.ncbi.nlm.nih.gov/30252333/>

Asensio et al. 2003, Managing Exsanguination
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200784/>

SM 2023, Safeguard Medical, Myths of Tourniquet Use Debunked
<https://safeguardmedical.com/6-common-myths-of-tourniquets-debunked/>

Mayo Clinic 2022, The Crucial Role of Tourniquets in Trauma Care
<https://www.mayoclinic.org/medical-professionals/trauma/news/the-crucial-role-of-tourniquets-in-trauma-care/mac-20531726>

Chapter 5

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

<p>[Cover Page]</p> <p>Basics of Bleeding Control Help Save a Life</p> <p>[Fire Station] [Address] [Hotline]</p>	<p>of Bleeding Control Save a Life</p> <p>What is the Basics of Bleeding Control?</p>  <p>2</p>
<p>of Bleeding Control Save a Life</p> <p>Subject Goal</p> <p> To teach essential concepts enabling individuals to recognize life-threatening bleeding and the necessary skills to allow them to act promptly and control it effectively.</p> <p>3</p>	<p>of Bleeding Control Save a Life</p> <p>Subject Objectives</p> <ul style="list-style-type: none">✓ Appreciate the importance of individual preparedness and training when faced with bleeding and other emergencies.✓ Recognize the signs of life-threatening bleeding✓ Identify the ABC of bleeding control✓ Execute proper procedure using the ABC of bleeding control method✓ Demonstrate how to properly stop bleeding using pressure, packing, and tourniquet application techniques <p>4</p> 
<p>of Bleeding Control Save a Life, Applicability and Timeliness</p> <p>Why do I need this training?</p> <p>Why do I need "any" training?</p> <p>Learning life saving skills are not exclusively for emergency responders.</p> <p>THE NUMBER ONE cause of preventable death from trauma is hemorrhage (massive bleeding) and accounts for more than 20% of cases.</p> <p>5</p>	<p>of Bleeding Control</p> <p>Bleeding Kills.</p> <p>Without any help, a typical adult can die from severe bleeding in as little as five minutes while losing less than 1.5 liters of blood.</p>  <p>6</p>

Basics of Bleeding Control
Necessity, Applicability and Timeliness**How much blood do I have?**

Bleeding to death can happen very quickly because we do not have a lot of blood to begin with.



Hemorrhagic shock can start when you lose about **20 percent**, or a fifth, of your body's blood or fluid supply.

At 40 percent blood loss, you reach a condition known as **exsanguination**, which can be **fatal** if left untreated.

7

Basics of Bleeding Control
Necessity, Applicability and Timeliness**Waiting for Help to Arrive : How Long Does it Take**

An accident happens, there is massive bleeding, and you have **5 minutes**



The international standard for emergency vehicle response time: **8 minutes**

Average response time in the Philippines: **15 – 30 minutes**

And may even take longer in **Rural Areas**

8

Basics of Bleeding Control
Necessity, Applicability and Timeliness**The Importance of Immediate Responders**

When an accident happens and before emergency services arrive, the only available rescuers are people at the scene.

Immediate responders are ordinary people who are **trained** and have the **willingness** to potentially save a life.

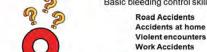
Where others help because it is their job, **Volunteers** help because they can and it **right to do so**.

**Are you READY and WILLING?**

9

Basics of Bleeding Control
Help Save a Life**Where can I Use this Training?**

Basic bleeding control skills can be used **ANYWHERE**.



Trivia: Road accidents make up the highest non-disease cause of death in the Philippines. This accounts for more than 11,000 individual deaths in 2022 or more than 31 deaths a day, excluding injuries. (Santac 2023)

If something bad happens, wouldn't you want someone willing you to help you as well?

10

Basics of Bleeding Control
Primary Principles - Safety**Safety****Your Own Safety Should be your****TOP PRIORITY**

Initiate care only when it does not put your safety at risk.

Primarily, the objective is to **mitigate the damage**, not add to it.

11

Basics of Bleeding Control
Primary Principles - Safety**I. Think Safety at the Scene****Stop, Breath, Think**

Is it safe where I am right now?
Is it safe where my victim is right now?
Will I be safe if/when I go there?

If you answer yes, **move to the next step**.



If at any point if the scene becomes unsafe:

Stop, Move to Safety. Take the victim with you if possible.

12

Basics of Bleeding Control
Primary Principles - Safety**II. Protect Yourself – Glove Up**

It is always encouraged to wear personal protective equipment (PPE) if it is available to you to act as a barrier against blood and other bodily substances.



However, during emergencies, intact skin is a good barrier against blood-borne pathogens.

13

Basics of Bleeding Control
Primary Principles – ABCs of Bleeding Control**ABCs - Bleeding Control vs Basic Assessment**

Talking strictly about hemorrhage (Bleeding) control; however, the procedures can be broken down into three (3) main parts—**Alert 911, Bleed, Compress**. Or collectively known as the **ABCs of Bleeding control**



14

162 MODULE 5 Basic Leadership Training through Fire Safety

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Trivia:

Not all cases of life-threatening bleeding can be seen from the outside. Depending on the injury, internal bleeding is just as bad, if not worse, than open wounds. So, upon witnessing traumatic injury, **Call, Call, Call for Help!**



15

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 1: A – Alert 911 (Call for Help)

This is a simple yet most often overlooked part of the process because most individuals will assume that other bystanders will automatically inform authorities.

"Just because they see you does not mean they will call for help now."



16

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 1: A – Alert 911 (Call for Help)

When calling 911, remember to:

Know your Location. Include landmarks or street names to assist responders in finding your exact location

Specify your Emergency. Different emergencies may require different types of responses. Telling them the nature of the incident will help them determine what is needed.

(ex. traffic accident, shooting incident, lightning strike)

Keep Calm and Follow Instructions. By keeping calm, you are better able to discuss information and listen to instructions from the helpline.



17

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 1: A – Alert 911 (Call for Help)

[insert local numbers]

BFP

PNP

C/MDRMMO

911

18

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 2: Bleeding

Identify Life Threatening Bleeding

Look for the following signs (3):

Pulsating or Steady Bleeding

Traumatic Amputation, and

Blood-Soaked Clothing/Bandages.



19

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 2: Bleeding

Pulsating or Steady Bleeding

Blood that is oozing out of the wound

(Steady Bleeding)



Blood that is spurting out from the wound

(Pulsating Bleeding)

Some wounds tend to bleed profusely but are not immediately life threatening (i.e., Scalp Wounds)

20

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 2: Bleeding

Traumatic Amputation and Blood-Soaked Clothing

Clothing soaked in blood

Bandages soaked with blood

Blood pooling on the ground

Loss of a limb or other part of the body

(ex. Hands or leg)



21

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 2: Bleeding

Additionally, look for the signs of hypovolemia (low blood volume):

- Color clammy, and/or pale skin
- Bluish tone on the skin and lips
- Confusion, Dizziness, or loss of Consciousness (Fainting)
- Difficulty Breathing and excessive sweating



22

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Two Things to Consider When Assessing Bleeding

I. The possibility of Multiple Injuries

Always be aware that victims may have multiple injuries. In this case, prioritize the most extensive bleed first.

II. Not all Bleeding may be Visible

Just because you don't see blood does not mean there are no injuries. Clothing can hide signs of blood loss.

23

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Common Bleeding Locations



I. Extremities

Extremities are divided into either upper (Hands and arms) or lower (Thighs and legs) and are the **most frequent** cause of preventable death from bleeding.

[direct pressure application](#)
[tourniquet application](#)

25

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Trivia:

Did you know that even a moderately thick jacket can soak up to a liter of blood without leaking?



24

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Common Bleeding Locations



II. Junctional Points

This pertains to your Neck armpits and groin areas. Life-threatening bleeding in these sites usually indicates deep wounds, which are more challenging to manage without medical supplies.

[direct pressure application](#)
[wound packing](#)

26

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Common Bleeding Locations



III. Trunk(Body)

This involves your central core, meaning everything below your neck, above your groin area, and in between your shoulders. can only be managed pre-hospital using [direct pressure](#).

This Bleeding **CANNOT** be stopped outside a hospital.

[Expedite transport!](#)

27

Form your Teams!

Ice Breaker/ Pop Out Quiz!

28

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression

When we talk about compression in bleeding control, remember:

- P – Pressure (Direct Pressure)
- P – Packing (Wound Packing)
- T – Tourniquet (Tourniquet Application)

Although each has its pros and cons, all these methods have one thing in common—compressing a bleeding blood vessel to stop the bleeding.



29

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression

Considerations:

Availability of Supplies

Carrying medical supplies with you is an intelligent choice, best case, you help [save a life](#), maybe even your own.



Applying Enough Pressure

To effectively stop major bleeding requires firm, continuous pressure for a minimum of 3 – 15 minutes.



30

164 MODULE 5 Basic Leadership Training through Fire Safety

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Direct Pressure

This technique can be used on bleeding in any part of the body and involves putting direct pressure on the actual wound site. This is effective for most external bleeding, even arterial bleeding.



31

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Direct Pressure

After Ensuring your safety, calling 911 and identifying the life-threatening bleeding:

1. Make sure that the wound is supported on a firm, flat surface
2. Using a clean gauze or cloth (if available), press down as hard as you can using your hands or fingers. Use two hands if possible.

Pressure should be forceful and continuous

3. If the bleeding stops, maintain pressure on the wound until help arrives



32

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Direct Pressure

Things to Remember

- Make sure you can put firm pressure on the wound
- Focus on the location of the bleeding
- Use just enough gauze to cover the injury.
- Do not attempt to release pressure to check the injury. If it stops, maintain pressure
- This may hurt; you need to communicate this with your patient



33

Activity I - Direct Pressure Practice

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Wound Packing

This is done for large, deep wounds found at:

- (1) Junctional points
- (2) Extremities where simple direct pressure would not work effectively.



Why pack wounds?

The idea of simply using direct pressure over large and deep wounds may not be effective at stopping bleeding because of the lack of pressure on the actual artery source of bleeding.

35

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Wound Packing

After Ensuring your safety, calling 911 and identifying the life-threatening bleeding:

1. Expose the wound site by opening clothing. You may need to wipe excess blood to locate the source of the most active bleeding
2. Using a clean gauze (if available) or cloth, pack the wound by feeding the gauze directly into the bleeding site

Dressing should be packed tightly until air space is filled up

3. Apply firm pressure on the packed wound and hold until help arrives



36

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Wound Packing

Things to Remember

- Generally used for areas where a tourniquet cannot easily be applied.
- If the patient is HURT, inform your patient, and try to reassess him/her.
- If bleeding continues and bandages become soaked, pack on more gauze or clothing and reapply harder pressure.
- Having bandages or packing gauze readily available reduces the chances of infection down the line.



37

Activity II – Wound Packing Practice

38

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application

What is a Tourniquet?

A constricting band that is placed above (proximal) an injury to stop blood flow to that extremity completely.

Nowadays, there are commercially available tourniquets (which are more effective) at a relatively affordable price.



39

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application

Storing and Staging Tourniquets

“Staging” a tourniquet means preparing it in such a way that it can be deployed with minimal delay. This can be a lifesaver in many ways as it helps you to quickly apply it to someone else or be able to apply a tourniquet on **yourself** using only one hand.

How many do I need?

Well, it depends. More is always better, but realistically, each individual should carry at least one.



40

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Common Myths and Misconception Surrounding Tourniquets

Myth 1: Tourniquets are a last resort



Myth 2: If you use a tourniquet, they will lose that limb

Myth 3: A tourniquet is tight enough when it becomes painful

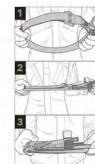
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Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

How to stage a C-A-Tourniquet(marscuse.com 2023):

1. Pass the red tag through the slot in the buckle. Pull 8" of the band through, fold it back, and adhere the band to itself.
2. Flatten the loop formed by the band. Place the buckle in the middle of the flattened band. Open the Velcro timestamp and place it on the side.
3. Fold the tourniquet in half, placing the buckle at one end. The tourniquet is now ready to be placed in your medical kit.



42

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application

1. Insert the wounded extremity (arm or leg) through the tourniquet and position it 2 – 3 inches above the injury.
2. Pull the self-adhering band through the buckle tightly and fasten it back on itself.
3. Twist the windlass rod until the bleeding stops.
4. Lock the windlass rod in place on the windlass clip.
5. Fasten the remaining portion of the band through the windlass clip as far as you can go.
6. Secure the windlass rod on the clip by pulling the timestamp to the opposite hook Velcro.
7. Write the time of application on the timestamp using a pen or marker.



43

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application

Things to Remember

- If a victim has life-threatening bleeding and you have a tourniquet on hand, you can use it as your first response.
- Do NOT Apply a Tourniquet over the knee or elbow joints
- This WILL HURT A LOT.
- If bleeding continues, try to tighten it more or use another tourniquet above the one you just used
- Once a tourniquet is on, DO NOT LOOSEN under any condition.



44

Activity III – Tourniquet Application Practice

45

Basics of Bleeding Control

Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application



- I. Improvised Tourniquets

The best tourniquet is the one you have with you. An improvised tourniquet is better than nothing at all.

Just remember the risks:

Bleeding MAY WORSENE or NOT be controlled entirely.

- Strong material and at least 2 inches in width
- Windlass rods should be sturdy and secured correctly
- Always check improvised tourniquets after being applied

46

166 MODULE 5 Basic Leadership Training through Fire Safety

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application



II. Amputated Limbs

Even if the stump may not be bleeding much, preemptively placing a tourniquet will save the victim from a lot of blood loss.

47

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application



III. Tourniquet Application for Children

If a child is too small to fit a tourniquet snugly, it means that they **do not require** the use of one. control bleeding by either using direct pressure or wound packing.

48

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control

Step 3: Compression – Tourniquet Application

FAQs



I. Impaled Objects

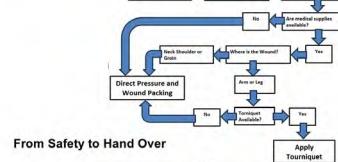
Keep an impaled object in place if at all possible. Instead, apply pressure around the object.

II. Washing Wounds

Don't wash a wound that is bleeding heavily. For minor cuts and scrapes, you can wash the wound to remove any dirt. You should also wash animal bites with soapy water if they are not bleeding heavily.

49

Basics of Bleeding Control Primary Principles – ABCs of Bleeding Control



From Safety to Hand Over

Basics of Bleeding Control Primary Principles – Preparedness

Building Individual First Aid Kits



the best trauma kit is the one you can afford and are willing to use. At the very least, everyone should be having a tourniquet.

Individual First Aid Kit (IFAK) (trauma) contents:
By order of importance:
1x Packing Gauze/ Compressed Gauze
1x Pair Gloves
1x CAT Tourniquet (or analog)
1x Compression Bandage/ Pressure Bandage
1x Trauma Shears

51

Basics of Bleeding Control Primary Principles – Preparedness

Come Prepared to Act



Preparedness – The Importance of Knowing How to Use Your Kit

As with any skill, particularly those that happen in a high-stress environment, training is vital. In the event of an emergency, constant training is a crucial component to a successful outcome.

Muscle memory can empower the responder to deliver quick and effective action.

52

Activity IV – Build Your First Aid Kit

53

Recapitalization

Safety

Own Safety is First Priority

ABCs of Bleeding

A – Alert 911

How to Call for Help:

B – Identify Life-threatening Bleeding

Three wound Locations: Extremities, Junctional Points, Body

C – Compress

Direct Pressure

Wound Packing

Tourniquet

Individual First Aid Kit

Importance of Immediate Responders and the Heart of a Volunteer

54



Take Away

55

Evaluation:

1. Why is individual preparedness and first aid training important?
2. what are the signs of life-threatening bleeding?
3. What are the ABCs of Bleeding Control?
4. What are the three methods of controlling bleeding?

56

Additional Questions?

57

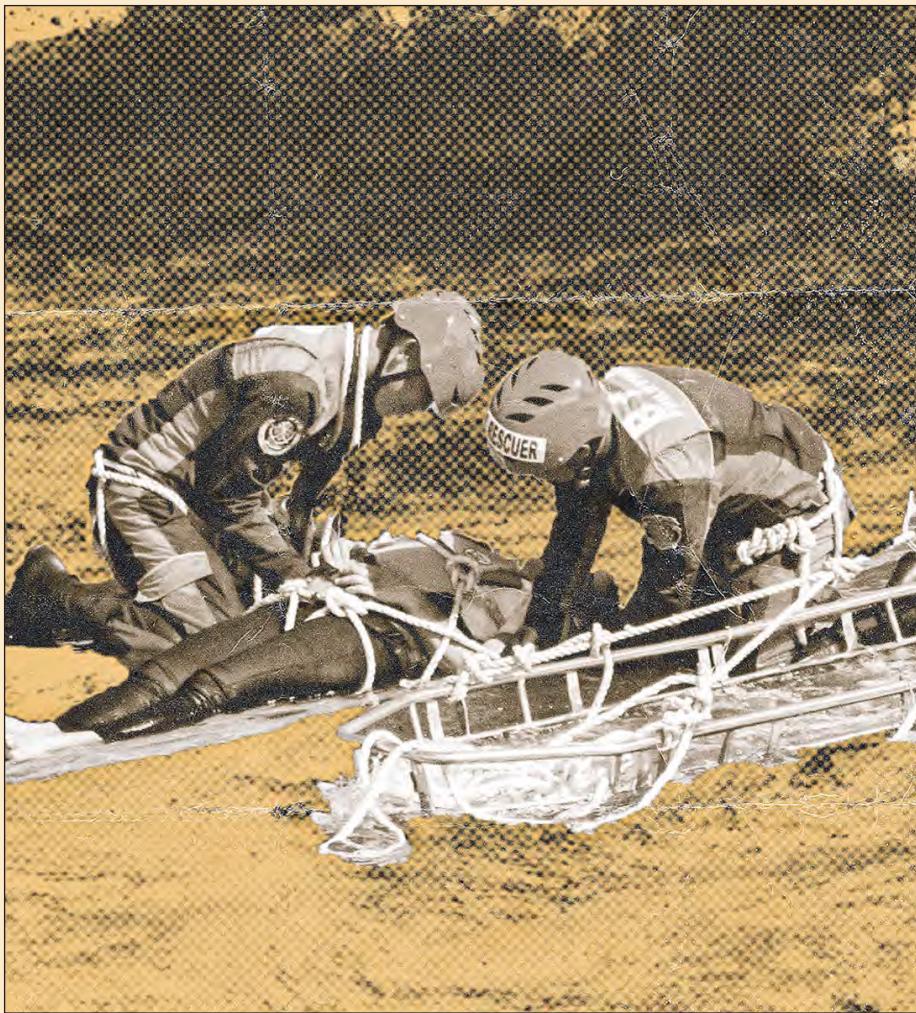
Thank you

58

Chapter 6

Basic Leadership Training through Fire Safety

Fire Response Basics



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 6...

Goal

To utilize previously learned concepts in providing the target audience with a practical understanding of the basic principles and procedures of fire suppression using both dedicated fire safety equipment and common everyday items and to be able to apply the latter correctly when faced with actual fire emergencies.

Objectives

By the end of the session, participants should be able to:

1. Appreciate the importance of prior planning in the timely application of correct technique when responding to emerging fire emergencies
2. Identify and explain the four (4) primary methods of extinguishment
3. Identify everyday household materials/items suited for fire suppression
4. Identify and differentiate the five (5) types of fire extinguishers in everyday use
5. Demonstrate how to use a fire extinguisher using the T.P.A.S.S. method properly
6. Demonstrate the ability to individually react when faced with emerging fire emergencies using correct procedures and techniques.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. Powerpoint Presentation
3. Demonstration Materials
 - i. Fire Pit
 - ii. Fire Extinguisher
 - iii. Fire Blanket
4. Visual Examples

B. Alternative Tools

1. Flip Cards

Total Time of Delivery:

3 – 3.5 Hours

Cheat Sheet

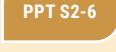
Subject Overview

Purpose: This subject is focused on the actual extinguishment methods for different scenarios involving fire and provides participants with the knowledge needed to make critical decisions when confronted with fire emergencies.

General Guidance: This subject includes demonstrations of the different elements that contribute to fire and how they interact. The lecturer needs to ensure safety when conducting the experiments. The lecturer should explain the interactions in the simplest possible terms using colloquial terms when applicable/ necessary to facilitate understanding. He should deliver this subject to catch the interest of the audience and encourage them to ask questions.

Things to Consider: Since these subject deals with fire and other potentially dangerous substances, no actual activities may be done near occupied buildings or areas which may constitute a fire hazard.

Subject Outline

Audio/ Visual Aids	Outline	Notes
	1. PREPARATORY	
 ppt cover	1.1 Greet the participants and start by introducing your name and your teammates.	
 LG6-1  PPT S2-6	1.2 Engage the participants by relating a scenario and asking them what they would do at each step of the scenario. Prompt: Something starts to smolder, then ignites. A minute later you see the flames The ___ is on fire. What do you do? You call the fire station, but they are minutes away. Meanwhile, your house/car is burning. Do you just run away? Do you try and do something?	Create a scenario which is relatable to the audience. This step is important to set the mood for the entire discussion
 PPT S7-8	1.3 Present subject objectives.	The following questions are not suggestions to choose one, but rather should all be asked in sequence to give participants answers. Refer to Goals and Subject Objectives

Cont...1

Audio/ Visual Aids	Outline	Notes
	2. MOTIVATION	
LG6-1 PPT S9	Ask the question: So here you are. You decided to fight the fire, but how do you go about doing it?	
LG6-1 PPT S10	Show a video clip of an incorrect fire suppression technique being used and the potential dangers.	2-3 videos will be shown. Ask participants if they think this is done correctly.
	Video Clip I – Wrong Response	
	2.1 Not all fires are the same – the same is true when talking about extinguishment	Recap and ask participants about the five classes of fire. (Entertain 1-2 answers)
LG6-1 PPT S10-14	Reiterate the importance of self-preservation first – Lives before Properties.	Emphasis on “correct employment.”
	3. LESSON PROPER	
LG6-2 PPT S15-19	3.1 Main Methods of Extinguishment <ul style="list-style-type: none">• Briefly recap the Fire Tetrahedron• Discuss the (4) primary methods of Extinguishment:<ul style="list-style-type: none">CoolingSmotheringStarvingInhibition of Chemical Reaction	Allow the participants to give examples of each method of extinguishment. Allow 1-2 answers to encourage participation.
	3.2 Fire Safety Equipment, Maintenance, and Use	
	Discuss the different standard Fire Safety Equipment found in public areas, their maintenance, and how to use/trigger them.	
	Smoke Detectors	
	Fire Alarms	
	Fire Hose Cabinets	
	Fire Blanket	
	Fire Extinguishing Ball	
	Fire Extinguishers	

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
PPT S40	3. LESSON PROPER	
LG6-4	Activity I – Fire Protection Equipment	
PPT S51-56	3.3 Extinguishment Using Common Items	Discuss the different everyday items/techniques that can be used to put out fires.
	Water Bucket	
	Baking Soda and Salt	
	Wet Towel as Fire Blanket	
	Wet Sand or Soil	
LG6-5	3.4 Fire Emergencies	
PPT S41-50	Extinguishment by Type	
	Importance of knowing what is burning	
PPT S57-64	Common Materials	
	Electric Equipment	
	Flammable Liquids	
	How to Safely Put out a Grease Fire	
	Engine Fires	
	Clothes Fires	
LG6-6	3.5 Reacting to Fire Emergencies	
PPT S65-71	Discuss what to do before a fire:	
	Know your exits	
	Check your fire evacuation plan	
	Teach the mnemonic R.A.C.E. when discovering a fire:	
	R – Remove, Rescue	
	A – Alarm, Alert 911	
	C – Confine	
	E – Extinguish, Evacuate	
	Discuss what to do after evacuating from a fire:	
	Check yourself	
	Check others	
	Activity II – Extinguishment	

Cont...2

Audio/ Visual Aids	Outline	Notes
LG6-7	4. TAKE AWAY	Talk I – the Life You Save Explain the importance of presence of mind and critical thinking when faced when fire emergencies.
LG6-8 PPT S72-73	5. CLOSING EVALUATION	The summary will be presented in the PPT. Please reference the notes therein. 5.1 Review the objectives by asking participants the following questions: <ul style="list-style-type: none">• What are the four main methods of extinguishment?• What are the different types of fire extinguishers?• What are the steps in using a fire extinguisher?• When confronted with a kitchen fire, what is the best method of extinguishing the flame?• When confronted with a fire from an overheated water dispenser, how would you extinguish the flames?• What do you do when discovering a fire? 5.2 Ask if there are questions or clarification 5.3 End the subject.

Fire Suppression Basics

2.1 Different Fires, Different Approaches



Fig 1. Visualization of different common fires Source: google search

Fires can be a devastating event. In a matter of minutes, you can lose your entire home, livelihood, or worse, your life or the lives of your loved ones. To make it more complicated, not all fires are the same. Different fuels create different fires and likewise require different types of fire extinguishing agents.

Trying to extinguish a fire can be a serious challenge, especially for those who need to gain prior training or experience encountering such. Frequently, it is panic sets in, leading to a series of wrong decisions and ineffective actions.

Knowing What to Do and Having the Will to Do It.

While it is true that “knowing is half the battle,” the other half is doing something about it. While guidebooks and training are full of correct advice, knowing all the ways of extinguishing fires does not automatically extinguish fires themselves. It is you that have to act on it, using the right equipment and **proper employment**.

The effectiveness of putting out a particular fire depends on two main factors:

1. The right kind of extinguishing agent
2. The correct method of applying that agent

Trivia:

Did you know that 60% of small businesses don't fully recover after a fire? That is huge considering that for 2023, the number of recorded fires from January to April reached 3,991, with a death toll of 124 individuals. (Guzman 2023)

Fight or Flight - Remembering to Balance the Risk

When faced with a quickly developing fire emergency, you first need to assess your abilities and evaluate the availability of firefighting equipment before deciding whether to fight the fire or take flight and evacuate. Ask questions like: "Is the fire small enough to be extinguished using available resources?" "Am I safe from toxic smoke and gasses?" "Are escape routes accessible to me?" "What does my gut tell me?"

Even when you have finally decided to fight the fire, you have to understand that not all fires can be extinguished. Remember, the most essential thing in a burning building are the people in it. Following the motto of the B.F.P. – "**Saving Lives and Properties**," Saving lives, including your own, should always be the priority when confronted with a fire.

3.1 Methods of Extinguishment [S-2]

Before we can talk about the methods of extinguishment, it is essential to recall the elements of fire and the fire tetrahedron. Fire is composed of 4 elements: fuel, oxygen, heat, and the chemical chain reaction. Likewise, there are **four (4)** primary methods of extinguishment, which focus on removing one or more of these elements to break the chain and extinguish the flame.



I. Cooling or Temperature Reduction

One of the most common methods of extinguishment is cooling with water. This method depends on reducing the temperature of a fuel to a point where it does not produce sufficient vapor to burn. To achieve this, it is necessary to remove the heat at a greater rate than the total heat that is being produced by the fire.

Water has a high thermal capacity; it can absorb a large amount of heat without much change in its temperature.

Example:

- * After cooking barbecue, we usually put off the charcoal using water applied directly to the flame.



II. Starving or Fuel Removal

In some cases, fire is effectively extinguished by removing the fuel source or by stopping the flow of solid, liquid, or gaseous fuel in the path of a fire. Another method of fuel removal is to allow a fire to burn until all fuel is consumed.

Note that taking away fuel from a fire is the most difficult and often most dangerous of the methods of extinguishment.

Example:

*A flame at the nozzle of an L.P.G. is best extinguished by turning off the tank at the valve. Without a constant supply of fuel, the fire will be extinguished.

*In the case of a campfire, you can reduce the intensity by removing its fuel source (i.e., Wood)

III. Smothering or Oxygen Removal

Reducing the oxygen content in an area also puts out the fire. This can be done by flooding an area with inert gas such as carbon dioxide, which displaces the oxygen,

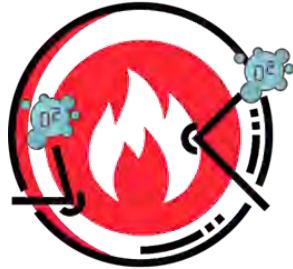
Example:

*Using a fire ex

Or **separate** it from the fire by covering the burning area with a noncombustible material.

Example:

*Covering a burning area with foam, a wet blanket, or sand



IV. Interrupting the Chain Reaction (Inhibition)

Extinguishing agents, such as dry chemicals and halogenated hydrocarbons (halons), interrupt the flame-producing chemical reaction and stop flaming. This method of extinguishment is effective on gas and liquid fuels because they must vaporize to burn.

Example:

*Using chemical fire extinguishers



3.2 Fire Protection Equipment, Maintenance and Use [5:3]

Fire Protection Equipment

Fire protection equipment are specialized tools that can be a lifesaver in the event a fire ever breaks out inside your home or in a building you happen to be in. Depending on the type of building you are in, there can be more or less of these pieces of equipment present. Being able to identify these and knowing how and when to use them can give you peace of mind even if you are never forced to deal with a fire.

Active Vs. Passive Fire Protection Equipment

Active fire protection refers to equipment that needs to be activated in the event of a fire, usually through built-in sensors or manual switches. Handheld fire extinguishers, fire blankets, or an automatic fire detection and suppression system are common examples. Although lesser known, fire alarm systems are equally (if not more) critical and are also considered part of active fire protection.

Passive fire protection, on the other hand, is built into the layout and construction of a building or community. These are composed of physical barriers such as walls and doors or choices in building materials that can better resist the initial ignition and work to prevent the fire from quickly spreading.



Fig 2. A Common Smoke Detector
Source: google search

A. Smoke Detectors

A smoke detector is an electronic fire-protection device that automatically senses the presence of smoke either by visually detecting the existence of smoke (photoelectric) or by measuring the products of combustion created during the burning process (ionization) and then triggers an alarm to warn the building occupants.

The typical range of detection is **3 meters or 10 feet**.

Trivia:

Smoke alarms save lives. Properly installed and maintained smoke alarms play a vital role in early fire detection, reducing injuries and property damage. Typically, a smoke alarm will trigger within 30 – 90 seconds of a fast flame fire.
(NFPA Today 2022)

F.A.Q.s about smoke detectors:



Do I have enough? Different barriers, such as a closed door or the layout of a room, can prevent smoke from quickly reaching a smoke detector. A confined fire may also slow the spread of smoke and delay detection. According to the N.F.P.A., having at least one smoke alarm on every level, in every bedroom, and outside of each sleeping area is recommended. *(NFPA 2009)*

Beep 2x: If a smoke alarm suddenly starts beeping at fixed intervals, it could be the battery is starting to run low and needs to be replaced. Or, the battery could have come loose or was improperly installed.

Is my smoke detector even working? It is normal if you are unsure if smoke detectors are functioning or not; maybe the battery went out, or it has just been years since you bought it. A quick and easy way is to press the “test” button on the face of the smoke detector. If it beeps, then it’s good to go.

Trivia:

The risk of dying in reported home fires was found to be 55% lower in homes with working smoke alarms compared to homes with no alarms or none that worked *(NFPA2021)*.

Maintaining your Smoke Detectors

- Make sure smoke detectors are clean and free from any obstruction
- they should be located not more than 12 inches from the ceiling if attached to a wall
- Test your fire extinguishers once a month and replace the battery every 12 mos.
- If a smoke detector is more than ten years old, replace it



B. Fire Alarms

A fire alarm is a fire protection device installed in a building or enclosed area that gives an audible or visible warning of a fire upon activation. Simple fire alarms commonly found along building hallways consist of a standalone pull switch connected to a bell and need to be manually activated. In contrast, more sophisticated alarm systems can be networked with multiple other sensors and activated automatically.

Alarms should be found along the corridors, at least on every floor.



Fig 3. Sample Manual Fire Alarm
Source: google search

Maintaining your Fire alarms

- Fire Alarms should be tested for function once a month
- All signaling devices should be inspected for visible damage
- Manual fire alarm boxes should be tested to confirm that they can initiate the alarm. Mechanical switches can stick when left untouched for extended periods.
- Verify audible and visual trouble signals.



C. Fire Hose Cabinets

These are mounted steel boxes containing a fire hose (50ft – 100ft) with an attached nozzle, fire extinguisher, and axe for immediate usage, and provide occupants with the ability to manually apply water on fires that may be beyond the capability of smaller handheld fire extinguisher.

Important: They do not take the place of automatic extinguishing systems.

It allows for **quick suppression, one-person operation, minimal water damage**, and provides opportunities for evacuation and **protection of exit routes (means of egress)**. These are often found near stairways (in multi-story buildings), exits, and along corridors.



Fig 3. Standard Fire Hose Cabinet
commonly found in public areas.
Source: google search

Before using a fire hose cabinet:

Assess your fire: make sure that you know what type of fire is burning; using water in an electric fire may result in electrocution. Likewise, water on a grease fire will only serve to make it worse and could result in burns.

Stay Safe, and plan your Escape: Make sure you have a clear line of retreat, and you have alerted people nearby before attempting to use a fire hose cabinet. **If the fire is too hot to bear, retreat.**

How to use in the event of a fire:

1. Break the glass
2. Deploy the Hose by pulling it off the rack and bringing the nozzle to a safe distance from the fire
3. Turn the water on by opening the main valve and turning counterclockwise
4. Direct the stream at the seat of the fire (note: some nozzles may have a non-adjustable hose set to fog stream) and extinguish the fire using a sweeping motion.



Fig 5. Demonstrates the proper method of using fire blankets. Source: google search



Fig 6. Example of commercially available fire blankets showing different sizes. Source: google search

Maintaining your fire Hose Cabinets

- Make sure to stretch out hoses at least once every three months, and change the position of the hoses folded in storage to prevent damage.
- Inspect your fire hose for fraying, tearing, or vandalism.
- Cabinets should be tested at least once every three years

D. Fire Blankets

A fire blanket is a safety device designed to extinguish small fires by acting as a barrier to oxygen smothering the flames. They consist of a sheet of fire-retardant such as fiberglass.

Small fire blankets, such as for use in kitchens and around the home, are usually folded in easily accessible storage containers. Larger fire blankets, designed for industrial or laboratory use, are typically wall-mounted in quick-release containers with high visibility tabs to allow a person to easily pull out for use.

How to Identify a Fire Blanket:

Fire Blankets are usually located near areas with flammable liquids or kitchens where grease fires are more likely to occur. It is generally mounted walls in a bright red or orange box will pull tabs on the bottom.

How to use a fire blanket



Fig 8. Simplified illustration showing the different methods for using fire blankets. Source: google search

In case of a kitchen fire, you should:

1. Pull the tabs hanging from the bottom of the packet to release the blanket
2. Hold the blanket in front of you. Ensure the fabric is rolled back at the edges to keep your hands protected
3. Carefully place (do not throw) the fire blanket over the fire, ensuring your hands, arms, face, and body are safely behind it
4. Lay the blanket above the fire, careful to avoid the sides of the blanket, as flames can run over the sides and onto your hands
5. Once the fire is contained, to stop it from reigniting, you should turn off the heat source and leave the blanket over the area for at least 15-20 minutes until there is no longer heat present
6. Leave the room and call for help

In case of a clothing fire, you should:

1. Wrap the blanket around the person and the flames, making sure to approach him carefully
2. Have them drop to the floor and roll around until the fire is out
3. Seek medical assistance for the person immediately.

Note: Fire blankets are single-use items. When in doubt, discard



Fig 9. Example of commercially available extinguishing fire balls
Source: Indimart.com



Maintaining your Fire Blankets

- Remove the fire blanket from its container
- Inspect the fire blanket and container for visible damage
- Replace the fire blanket in its container and record the date on the service label
- Check to make sure that your fire blanket is not positioned too close to a fire risk

E. Extinguishing Fire Ball

Extinguishing fire balls (E.F.B.) are self-activating fire suppression devices that burst open when touched by flames agitating and dispersing an A.B.C. dry chemical fire retardant with an effective coverage area of 4-8 square meters, depending on placement height. Because of its compact size and low maintenance needs, E.F.B.s are ideally used in confined spaces such as electrical rooms and car engine bays.

Most commercially available fireballs also have audible alarms, which are activated once a ball is triggered.
 [\(Nationwide.com\)](http://Nationwide.com)

Before using an Extinguishing Fire Ball

- **Choose your Battles, and assess your fire:** before attempting to tackle any fire, make sure that you have the necessary equipment needed.
- **Stay Safe, and plan your Escape:** Make sure you have a clear line of retreat, and you have alerted people nearby before attempting to use any firefighting apparatus. **If the fire is too hot to bear, retreat.**

How to use an Extinguishing Fire Ball

The main advantage of an extinguishing fireball is its ease of use. All you need to do is to either throw or roll fireballs on the seat of the fire, and the heat will automatically activate it within 3-10 seconds. As for mounted fireballs, these are automatically triggered by heat.

Maintaining your Fire Ball Extinguisher

A fire extinguisher ball has an average life span of 5 years. During this period, it does not require any maintenance or repair. However, periodic inspections are needed to ensure that it is in good condition without any visible damage and



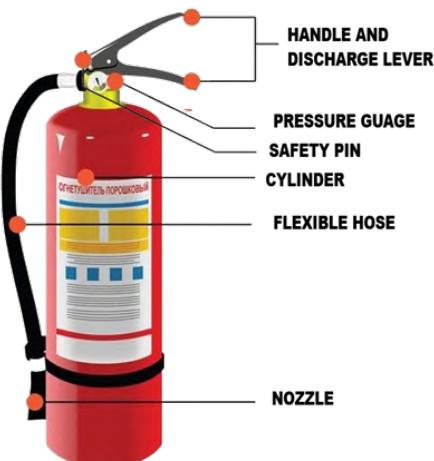
is properly mounted.

F. Fire Extinguishers

When we talk about fire protection equipment, the first thing that most people automatically think of is fire extinguishers, likely because of their portability, flexibility, and ease of use. Fire extinguishers are handheld active fire protection devices usually filled with a dry or wet chemical, CO₂, or other extinguishing agents used to suppress or control small fires during the **incipient stage**. ([Futurafire.com](https://www.futurafire.com))

Trivia:

Fire extinguishers come in different sizes to suit different needs. Small 1-pound are commonly found being carried in cars or other small vehicles, and the largest fire extinguisher is a 350-pound wheeled fire extinguisher that is designed to fight fires on board ships and other marine vessels and can reach temperatures of up to 1200 degrees Celsius. (Perkes 2019)



Basic parts of a fire extinguisher

Cylinder

it is the main body of the fire extinguisher consisting of a cylindrical pressure vessel and contains the pressurized extinguishing agent.

Handle

Used to transport the device from one place to another and allows for a solid grip during use.

Discharge lever

Located above the handle and is used to break the pressure seal and allow the discharge of the extinguishing agent.

Safety Pin

A safety device to prevent unintentional discharge. It is inserted into the valve body and needs to be removed before use.

Pressure Gauge

Indicates whether or not the extinguisher is at the proper operating pressure to expel the fire suppressant. The indicator pointing to "Recharge," could mean that it has been used or that the pressure seal has been broken.

Flexible Hose

The hose allows to direct the flow of the extinguishing agent. It is a flexible pipe; it can only be found on fire extinguishers that are heavier than 3 Kg.

Nozzle

the nozzle is the hose's conical end, out of which the extinguishing agent disperses in a predetermined pattern.

Facilitator's Note [1/8]

Activity I. – Fire Protection

Equipment: This activity will allow participants to evaluate available fire protection equipment (please refer to the activates section) (15 minutes)

Fire Extinguishers by Type

Fire extinguishers are designed to tackle specific types of fire. Extinguishers contain different active ingredients that make them suitable for fighting certain types of fires. For them to be effective, they should be used appropriately, or they may prove ineffective or aggravate the fire if not used properly ([O'Connor 2021](#)) ([Futurafire.com 2023](#))

I. HCFC (HYDROCHLOROFLUOROCARBON) 123

Fire Extinguisher.

HCFC 123 is a clean extinguishing agent that removes heat and displaces oxygen from the combustion zone. It effectively extinguishes Class A, B, and C fires by cooling and smothering. Typically, Painted Green

Advantage: Low Maintenance

Disadvantage: Relatively Expensive



II. Dry Chemical Powder Fire Extinguisher.

This is the most widely used type of fire extinguisher today and is effective on Class A, B, and C fires. ([sc.edu](#))

Dry Chemical fire extinguishers primarily extinguish fires by interrupting the chemical reaction of the fire triangle. The particles in a dry chemical fire extinguisher also blanket the area of a fire to form a barrier between the oxygen and the fuel source. Typically, Painted Red

Advantage: Relatively inexpensive

Disadvantage: Requires more maintenance, prone to **caking**



III. Carbon Dioxide (CO₂) Fire Extinguisher

This type of extinguisher is primarily intended for use on Class B and C fires. Carbon dioxide extinguishers are well suited for areas with plenty of electrical equipment, such as offices or electrical rooms, because they do not damage electrical apparatus. CO₂ extinguishers do not leave any residue, unlike foam extinguishers. Carbon dioxide extinguishers work by smothering the fire and removing its supply of oxygen. It can be identified by its large elongated nozzle.



IV. Aqueous Film Forming Foam (A.F.F.F.) Fire Extinguisher.

It is suitable for class A and B fires only. AFFF fire extinguishers can be used on Class A and B fires. They are optimized for extinguishing flammable liquid fires such as gasoline or diesel but can also be used on ordinary fires such as wood and paper. The foam extinguishes liquid fires by creating a barrier on the surface of the liquid, preventing flammable vapors from reaching the air and starving the fire of fuel. Important note: Do not use on class C fires (mfs.co.uk/2022)



In the Philippines, it is typically painted BLUE or R.E.D.

V. Wet Chemical Fire Extinguisher

It is a fire extinguisher suitable for class A and K fires. Wet chemical extinguishers can effectively be used on Class K fires involving cooking oils and fats. They are extremely effective when used correctly. The wet chemical rapidly knocks the flames out, cools the burning oil, and chemically reacts to form a soap like solution similar to AFFF extinguishers and sealing the surface and preventing re-ignition. Despite being primarily designed for use on kitchen fires, they can also be used on Class A fires (ordinary materials) and Class B fires (*flammable liquids*).

(Perkes 2019)



Using The Correct Fire Extinguisher

Water	Dry Powder	Foam	CO₂	Wet Chemical
For use on A Wood, Paper, Textiles etc Do not use on B Flammable liquid C Live electrical equipment	For use on A Wood, Paper, Textiles etc B Flammable liquids C Gaseous fires Do not use on D Live electrical equipment	For use on A Wood, Paper, Textiles etc B Flammable liquids Do not use on C Live electrical equipment	For use on B Flammable liquids Do not use on C Live electrical equipment D Flammable metal fires E Do not use in a confined space	For use on A Wood, Paper, Textiles etc B Cooking oil fires Do not use on C Flammable metal fires D Discharge entire contents on to fire from at least 1 metre distance

The information contained in the poster is for guidance only and should not be used as a substitute for recognised training. AS1120/2007/01/12

Facilitator's Note [2/8]

Do a quick recap of the differences between the different types of extinguishers.

RECAP: Fire Extinguishers at a Glance

Essentially, a fire extinguisher works by removing one or more of the four elements needed for a fire. It could remove heat, reduce oxygen levels, or even put a barrier over fuel to disrupt the chain reaction. (*Blazeguard*)

Before Using a Fire Extinguisher ([sc.edu](#)):

Assess your fire, asses your extinguisher: Make sure that you know what type of fire is burning; certain fire extinguishers may not work or may make the fire even worse.

Keep your Distance: Stand 6-8 feet away with your back to the exit when using fire extinguishers in enclosed spaces so you can make a quick escape.

When using a Fire Extinguisher remember T.P.A.S.S.

T – Twist the pin to break the safety seal

P – Pull the safety pin and test the extinguisher

A – Aim low at the base of the fire

S – Squeeze the lever and discharge the extinguisher

S – Sweep from side to side and advance or retreat as necessary

Note:

During fire response, place expended fire extinguishers on **their sides** to indicate that they are empty; this prevents other people from accidentally picking up expended extinguishers.

**Facilitator's Note [3/8]**

Demonstration I. – Fire Extinguishers: the facilitator should demonstrate the proper handling and storage of fire extinguishers emphasizing quick access and easy deployment. Demonstrate how to use fire extinguishers using the T.P.A.S.S. method for both indoors and outdoors. Lastly, demonstrate how to inspect, and maintain fire extinguishers.

Maintaining your Fire Extinguishers

Carry out a visual inspection monthly by:

1. Checking the condition of the cylinder, pliability of the hose
2. Check the extinguisher has not been used or tampered with.
3. Check the pressure reading
4. Inspect to make sure the fire extinguisher is not exposed to the harsh environment

For Dry chemical powder extinguishers, prevent caking

by flipping the extinguisher end over end once every two weeks.

3.3 Extinguishment Using Common Items^[5-4]

While many trainings focus on fire extinguishers and other fire suppression tools commonly found in public places to be used in case of emergencies, there is no guarantee that any of these will always be available when you need them the most. Because the majority of fires still of fires at home, it is important to know how to use common household items to extinguish small fires. However, keep in mind that every fire is different.

I. Water

For ordinary fires, such as Wood or furniture, that do not involve any oil, chemicals, or electrical components, you can use water to douse the flames. Whenever possible, try to use a garden hose instead of buckets of water. This allows you to guide the flow of water to the exact areas where it's needed.

Application: Ordinary combustible materials (class A)

Note: make sure there are no electrical outlets or other electrical connections near the fire. Accidentally dousing outlets will cause electrocution.

II. Salt and Baking soda

Salt is a common household item that can be used to manage various types of fires, including oil-based and Wood fires. To effectively use salt as a fire suppressant, you must apply a sufficient amount of salt to form a thick layer over the source of the fire. The salt will create a barrier that deprives the fuel of oxygen and helps to reduce and eventually extinguish the fire. Additionally, salt has a high melting point, so it won't be affected by the heat of the fire.

Baking soda is even more helpful because it can be used for most types of fires. Baking soda extinguishes fires by releasing carbon dioxide as it is heated. Carbon dioxide displaces the oxygen, which in turn extinguishes the fire.

Application: Class A, B, C, D, K fires

Note: to put out even a small fire, large quantities of baking soda and salt are necessary.

III. Wet towel (Improvised Fire Blanket)

A wet cloth or towel can be helpful in putting out some

small fires, such as oil-based or gas-based fires. The critical thing to note is that a wet cloth will cut the oxygen supply, thereby extinguishing the fire. Essentially, this is an improvised fire blanket; care should be taken when using this to ensure safety.

Application: Class A, B, and K fires

IV. Wet Sand or Soil

Wet sand or soil works in much the same way as a damp towel or a fire blanket. The moisture in the sand or dirt will prevent air from reaching the burning material, putting out the flames. You have to remember that this only works if you can cover the entire surface area of a fire.

Application: Class B, K fires

3.4 Common Fire Emergencies [5:5]

Facilitator's Note [4/8]

Activity II - Demonstrate S.D.R. and the use of a fire blanket on a pan or burning individual – may use members of the audience as needed.

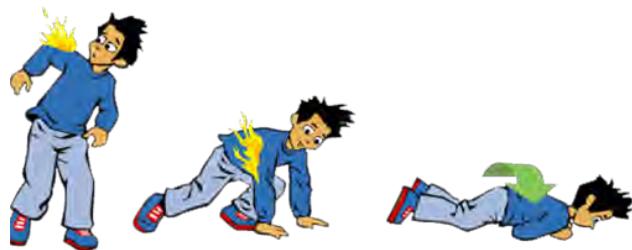
What to do if my clothes catch on fire?

In case your clothes catch on fire:

DO NOT PANIC – DO NOT RUN because running will only fan the flames

perform **S.D.R. or STOP, DROP, and ROLL**

SDR works by using the surface of the ground to form a barrier between your clothing and the surrounding oxygen



What to do when another individual catches on fire?

In case another individual catches on fire:

- Take a fire blanket, large piece of cloth, or jacket
- With outstretched arms, open the blanket in front of you, making sure to protect your hands and upper body
- Approach from the side, wrap the victim in the blanket
- Tell the victim to get on the floor; if the victim is incoherent, attempt to place the victim on the floor and then roll from side to side until flames are suppressed.
- Immediately call for medical assistance and transport.

Putting out Kitchen fires or Oil Fires

- If the fire is small enough, cover it with a cooking lid or damp cloth. Keep it covered for about 30 minutes or until it has cooled down.
- Cover the fire with a fire blanket a large piece of fire-resistant material such as fiberglass. If there are no fire blankets available, use a thick wet cloth. Carefully place it over the flames at leave it there for at least 30 minutes.
- If the fire only covers a small area, you can use salt or baking soda to put it out, but you will need to use a lot for it to work. Make sure you are using baking soda and not flour. Adding flour will feed the flames and may even cause an explosion.
- Turn off any heat source.
- Leave the room and call 911

Do not:

- Don't swat at the flames. Doing that could fan the flames and make the fire worse or ignite your clothes.
- Attempt to douse it with water; this will only spread the fire and cause the flames to get bigger.

Putting out Chemical Fires

Chemical fires behave similarly to cooking grease fires. Using water to put out chemical fires could cause it to spread or, worse, explode.

Cover the fire with a fire blanket a large piece of fire-resistant material such as fiberglass. In case there are no fire blankets available, use a thick wet cloth. Drape it over the flames at leave it there for at least 30 minutes.

You can also pour large quantities of salt and baking soda, but make sure you are using baking soda and not flour because the flour will feed the flames and may even cause an explosion.

Leave the room and call 911

Putting out Electrical Fires

DO NOT USE WATER to put out an electrical fire. Because water conducts electricity, using water directly on or in the vicinity of an electrical fire can result in electrocution.

- Unplug the device or turn off the electricity by flipping off the house's circuit breakers
- Once breakers are turned off, and you are sure power has been cut, you may extinguish the flames like any ordinary fire

- Additionally, you may smother the flames by pouring baking soda onto them.
- Call 911

Note: A class C fire without electricity is a class A fire.

Putting out Ordinary Fires

Ordinary fires involving paper, Wood, clothing, trash, or plastic respond well to water.

- Grab a bucket, fill it with water, and use it to douse the flames.
- Garden Hoses are better at putting out fires if they are available
- Beware of smoke when dousing flames; to be safe, position yourself upwind

Putting out Engine Fires

Engine fires are problematic because, typically, the fuel source is from a leaking fuel line or within the engine compartment and is inherently extremely hot. These types of fire also escalate quickly, so the best course of action would be to use fire extinguishers.

- Using wet sand or soil to contain the spread of flammable fuel may slow down the flames.
- Large quantities of baking soda may also be used; however, this is not recommended because of the inherent dangers

Facilitator's Note [5/8]

Special Activity I – Encountering Emergencies: this activity will gauge the participant's level of awareness and ability to apply previously learned topics on managing traumatic injuries. (20 Minutes)

3.5 Reacting to Fire Emergencies [5-6]

Before a Fire

In the event of a fire or other emergency, staying calm and being able to make correct decisions is what will save people's lives. The importance of planning and being prepared cannot be emphasized more.

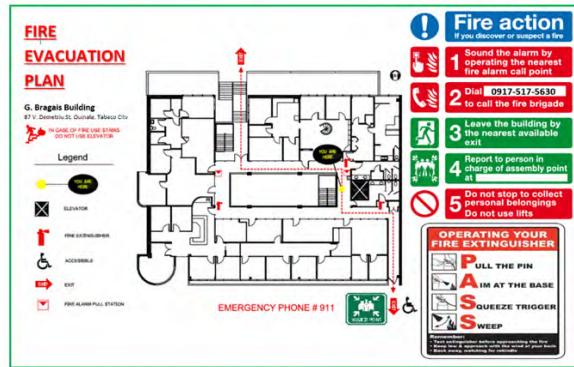
Plan Ahead - Know Your Exits

In an emergency, you only have a little time to take in your surroundings. This is why familiarizing yourself with the general layout and identifying the emergency exits should be one of your priorities when entering a building.

The heat, smoke, and chaos associated with most emergencies can quickly leave you disoriented, so you should know where to go ahead of time. In addition, it's common for most people to try to exit the same way they came in during emergencies. This creates a potentially lethal bottleneck situation.



Check your Fire Evacuation Plan



Most public buildings will have an emergency evacuation plan posted on the walls. It is the most accessible source of safety information for a specific location. The plan provides people with a layout of the floor they are on, as well as the important exits and any evacuation procedures. It commonly also indicates the location of fire extinguishers and first aid kits as well as the phone numbers to call in the event of an emergency.

It is commonly posted along corridors and near stairway landings.

What do I need to look for?

E-Exits. Find the nearest emergency exit from your approximate location.

E-Extinguishers. Pinpoint fire extinguishers or other available fire safety equipment.

A-Assembly Points. Know where you are going when exiting.

During a Fire

Similar to how fires spread quickly, when discovering a fire, you need to remember **R.A.C.E.** (sc.edu) (fireblockplans.com)

R-Remove those in Danger

Pause. Breath. Think -The first thing you should do when discovering a fire is to take a deep breath and not panic. Next is to let other people know that there is a fire and get them out. Do not risk extinguishing the fire before removing people from the area.

A - Alarm, Alert 911

Pull the fire alarm and alert authorities by calling 911. Remember that an early call will mean an early

Facilitator's Note [6/8]

Activity III A. – Response This activity will allow participants to apply proper procedures for responding to fire emergencies (10 minutes)

► response. This is why knowing the numbers for your local fire department is essential.

When reporting a fire, remember to:

Say **what** is burning

Tell them **where**. Location of the fire, including landmarks

How many are injured or tapped (if any)

And your name and phone number to contact **you**.

Important: Do not assume that someone else has made the call for you. If unsure, make the call yourself.

C – Confine

Move away from the fire and smoke. Limit the spread of the fire by closing doors and windows behind you if time permits. Doing this can give others more time to evacuate.

Facilitator's Note [7/8]**Activity III B. – Extinguishment**

This activity will allow participants to apply methods of Extinguishment in a controlled setting (please refer to the activates section) (20-25 minutes)

E – Extinguish or Evacuate

Never ignore a fire alarm. If you hear one, you should alert other people around you and go to the nearest emergency exit and get to safety. If there is smoke, stay low to the ground and crawl, or use a damp cloth over your mouth to help you breathe in a smoke-filled room. Never open doors that are warm to the touch because there may be fire on the other side.

If you have been trained and have the means to do so. Attempt to extinguish the fire if it is still small enough.

Remember: Assess your fire. If it's too hot to bear, evacuate.

After Evacuating**Do not attempt to go Back.**

No amount of money is worth a life. Fires can change quickly within a matter of minutes. If you were able to get out, stay out

Check Yourself and Others

After evacuating, do a quick check to see if you have any injuries you might not have noticed. In an emergency, adrenaline can dull the pain from cuts and bruises.

4.2 Take away [5-7]

We all love heroes. After all, many generations have been inspired by the idea of the lone wolf hero who risks their life to save others; however, during fires, we don't necessarily need to put our lives at risk all the time because, remember, we may risk our lives in a calculated manner to save savable lives, we may risk our lives a little to save savable properties, but we will not risk our lives at all for those lives and properties that are already lost.

A better option is to exercise self-restraint and collective heroism. Seemingly ordinary tasks such as improving awareness and exercising fire safety best practices in our communities are just as valuable. By themselves, these acts are thought of as insignificant. And when done only by a few, they may be. To succeed, everyone must have the confidence that everyone else will join the effort; that is where you, young adults, come in. because, ultimately, the life you need to save may be your own.

Facilitator's Note [8/8]

Talk I – The Life You Save: relate to the participants the value of life and needless heroism (refer to activities section)

5.1 Review the objectives by asking participants the following questions: [5-8]

- What are the four main methods of Extinguishment?
- What are the different types of fire extinguishers?
- What are the steps in using a fire extinguisher?
- When confronted with a kitchen fire, what is the best method of extinguishing the flame?
- When confronted with a fire from an overheated water dispenser, how would you extinguish the flames?
- What do you do when discovering a fire?

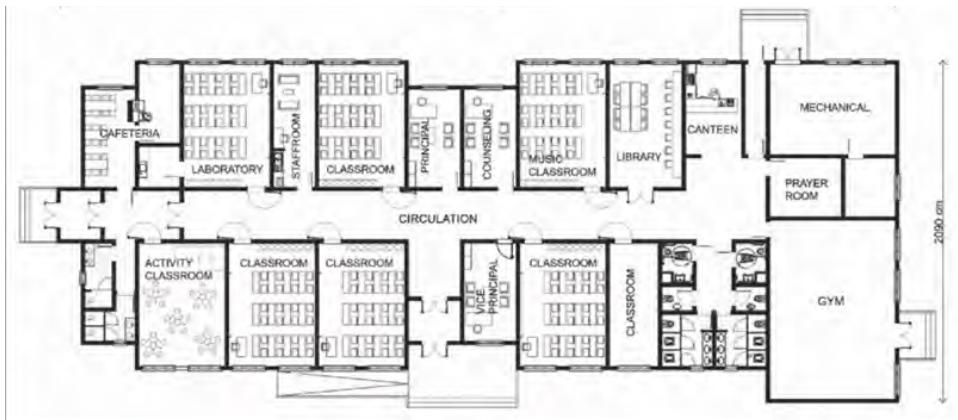
Activities:

Activity I. Fire Protection Equipment (20 Minutes)

This activity will allow participants to locate fire protection equipment present in their location and compare it to what should be ideally found installed. This activity is performed by the participants according to the groupings stated before. You will need two pieces spot map of the immediate location per group and writing materials.

1. Using the original groups, assign each group letters A and B (example: Group1A, Group1B) Provide each with a spot map of the current location of the class
2. Divide the spot map into five sections and assign each section to a group
3. Instruct all members belonging to A to visually assess the assigned area, taking note of all available fire safety equipment and designating them with the following symbols:

- Square: fire alarm
- Circle: smoke detector
- Triangle: fire blanket
- Star: fire hose cabinet
- Rectangle: Fire Extinguisher



4. Next, instruct all members belonging to B to indicate the location of available fire safety equipment in their assigned areas based on memory. Use the same symbols previously indicated
5. Lastly, instruct each group to compare their work and share with the entire class.

Ask participants the following questions:

1. Did you correctly identify all available fire safety equipment in your assigned areas?
(yes/no)

2. Does your area have enough available fire safety equipment
(yes/no)
3. Have you found any areas which are vulnerable to fire? Where?
4. Given what you now know, where would you place additional fire safety equipment?
(allow each group to share answers)

Allow participants to ask additional questions.

Special Activity: Encountering Emergencies (20 minutes)

This simulation will test the participant's awareness and ability to apply bleeding control skills. This activity will be done without prior knowledge of the participants to evaluate their crisis management when placed in situations with incomplete information.

To conduct the simulation, you will need: 5/10 volunteers (not part of the class) your HCT to act as a wound analog, a wooden rod to act as impaled object, optionally you can use water with food coloring to act as blood analog.

Scenario:

Participants will be given a short break from the current session before the beginning of this activity. A simulated vehicular accident outside the venue of the event involving 2/3 vehicles colliding with each other and injuring 5/10 individuals. A simulated active roadway will be used to allow victims to assess for safety.

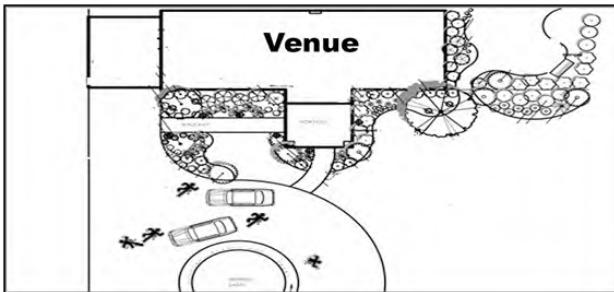
The victims will be assigned the following injuries:

- Amputated left leg (below the knee)
- Bleeding from a deep wound on the right thigh
- Impaled object on the left shoulder
- Bleeding from the junctional site near the neck
- Disoriented but is unhurt.

Note: More may be added for larger groups (10 victims may be used for a class of 30)

I. Instructions:

1. During the short break, instruct a bystander to enter the classroom visibly distressed and asking for assistance. When asked, the bystander should be panicked and will not be able to offer additional information except to point the direction of the incident.
2. Victims should be visibly in pain and/or shouting when participants arrive. Injuries should also be realistic too allow participants to visually assess injuries. Use the HCT to provide realistic bleeding characteristics to the wounds.



3. Facilitators should observe for the following:
 - a. Participants should assess for safety, and should have medical supplies with them
 - b. Participants should be able to call for emergency services (actual call) and provide relevant information
 - c. Participants should be able to assess the severity of injuries and perform immediate live saving actions using methods listed in the previous subject, BBC
 - d. Participants should be able to maintain the safety of the area noted
 - e. Participants should be able to cooperate to direct emergency services to the scene
4. Guide participants and take note of any errors.
5. Emergency responders will arrive at the scene 5 minutes after the first all
6. Allow participants to hand over victims.

II. After the activity ask the following questions:

1. How did you feel when you encountered the simulations?
2. Did you immediately have all the needed items with you?
3. Were you able to make the call?
4. What do you think would have happened if you did nothing?

III. The facilitator then shares observations they previously noted. Reiterate the importance of staying calm and being prepared.

IV. Allow participants to share what they have learned.

Activity III A – Response (10 Minutes)

This is a return demonstration to test the participant's to properly respond to emerging fire emergencies. Facilitators can optionally use a smoke machine/fumigator to simulate conditions during an emerging fire emergency.

Instructions:

1. With the class seated, discretely take one of the participants and bring them to a separate area from the main venue.
2. Instruct this participant that a simulated fire is ongoing in one of the rooms.

Note: If smoke machines/ fumigators are available facilitators may fill one of the corridors with smoke to provide a situation where participants would need to practice low crawls.

Allow participants to respond to the emerging situation. Observe for:

Proper application of R.A.C.E:

- a. Alerting people in immediate danger and activating fire alarms
- b. Calling 911/BFP hotline (note: an actual call and should be answered by the BFP)
- c. Checking of rooms before exiting
- d. Confining the fire by closing doors
- e. Using correct evacuation methods such as low crawls
- f. Proceeding to mustering points and doing a head count.

Activity III B – Extinguishment (20-25 Minutes)

This is a return demonstration of how to use fire extinguishers and fire blankets are used in an actual fire.

A. Fire extinguishers demonstration

You will need fire extinguishers, a fire pit half filled with water, gasoline with diesel to act as fuel, and an ignition source in the form of a lighted pole.

1. Position 2 or more fire pits at least 15 meters away from participants and hidden from plain view (around the corner of a building)
2. Task a bystander to run towards the participants to report the location of the fire

3. Allow participants to evaluate the fire, locate available fire extinguishers, assess function, and approach the fire pit from the correct direction.
4. Allow them to demonstrate how to use a fire extinguisher using the T.P.A.S.S. method
5. Participants will take turns until all fire haves been suppressed. (you may rekindle fires to allow all participants to perform)

B. Fire Blanket Demonstration

Fire Blanket demo: (no fire will be used; this is only a demonstration of proper technique)

You will need a thick blanket or jacket.

1. Position participants 10 meters away from the unlit fire pit. With a visual barrier in between, participants will not be able to see.
2. on your signal, participants will run towards the fire pit, locate the fire blanket (or analog) demonstrate the proper way of deploying the blanket to cover the fire. (interchangeably use a big/small blanket to assess if participants will still use it despite not being big enough)
3. First responders should take into account actual response times after the initial call. (The amount of time it takes to respond to that location during a real fire.)
4. When first responders arrive, ask for a report of the situation.

[End of Simulation]

5. Allow participants to share their experience and relay their observations during the activity.
6. Facilitators then share their observations and areas of improvement.

Foot Notes and References:

[] Jimmyley Guzman 2023, PH Fire Incidents Down, Casualties UP
<https://pia.gov.ph/news/2023/04/19/ph-fire-incidents-down-casualties-up-bfp>

NFPA Today 2022, What Kind of Smoke Alarm Should I Buy
<https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2022/01/28/What-kind-of-smoke-alarm-smoke-detector-should-I-buy>

Kelly Hayes 2022, How Many Smoke Alarms Do I Need? A Guide to the Live Saving Device
<https://www.fox10phoenix.com/news/how-many-smoke-alarms-do-i-need-a-guide-to-the-life-saving-device-and-when-to-check-them>

Brian O'Connor 2021, Fire Extinguishers Types
<https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2021/07/16/>

NFPA 2009, Installing and Maintaining Smoke Alarms
<https://www.nfpa.org/Public-Education/Staying-safe/Safety-equipment/Smoke-alarms/Installing-and-maintaining-smoke-alarms>

Nationwide.com, E Fire Extinguishing Ball Adds a New Layer of Fire Safety
<https://www.nationwide.com/lc/resources/farm-and-agribusiness/articles/what-is-a-fireball-extinguisher-ball>

Futurafire.com 2023, Fire Extinguisher Types
<https://futurafire.com/types-of-fire-extinguisher/>

Trevor Perkes 2019, 11 Interesting Facts About Fire Extinguishers
<https://onlinesafetydepot.com/11-interesting-facts-about-fire-extinguishers/>

[marsdenfiresafety.co.uk](https://www.marsden-fire-safety.co.uk/resources/fire-extinguishers/), Fire Extinguisher Types
<https://www.marsden-fire-safety.co.uk/resources/fire-extinguishers/>

[sc.edu](https://www.sc.edu/ehs/training/Fire/06_drychem.htm), Fire Fighting How To
https://www.sc.edu/ehs/training/Fire/06_drychem.htm

Blazeguard, Types of Fire Extinguishers Explained
<https://www.yourblazeguard.com/types-of-fire-extinguishers/>

Fireblockplans.com, What is a RACE Fire Plan
<https://fireblockplans.com/what-is-a-race-fire-plan/>

Chapter 6

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

<p>[Cover Page]</p> <p>Fire Response Basic</p> <p>[Fire Station] [Address] [Hotline]</p>	<p>Response Basic</p> <p>Something begins to Smolder, then Ignites.</p>  <p>2</p>
<p>Response Basic</p> <p>A Minute Later, you see the flames.</p>  <p>FIRE! What do you do?</p> <p>3</p>	<p>Response Basic</p> <p>You Call for help.</p> <p>But they are MINUTES away</p>  <p>4</p>
<p>Response Basic</p> <p>Meanwhile, your house is burning.</p>  <p>5</p>	<p>Response Basic</p> <p>Do you just run away?</p> <p>Do you try and do something?</p> <p>6</p>

Fire Response Basic**Subject Goal**

LEARN basic of fire suppression techniques using dedicated fire safety equipment and common everyday items.

Be able to **APPLY** the latter correctly when faced with actual fire emergencies.

7

Fire Response Basic**Subject Objectives** 

- ✓ Appreciate the importance of prior planning in the timely application of correct technique when responding to emerging fire emergencies
- ✓ Identify and explain the four (4) primary methods of extinguishment
- ✓ Identify everyday household items suited for fire suppression
- ✓ Identify and differentiate the five (5) types of fire extinguishers in everyday use
- ✓ Demonstrate how to use a fire extinguisher using the T.P.A.S.S. method properly
- ✓ Demonstrate the ability to react when faced with emerging fire emergencies

8

Fire Response Basic

You decided to **FIGHT THE FIRE**.

But How?

9

Fire Response Basic**Wrong Response**

10

Fire Response Basic**Not All Fires Are the Same**

Different fuels create different fires

Likewise require different types of fire **extinguishing agents**.

Frequently, panic sets in, leading to a series of wrong decisions and ineffective actions.

11

[\[Insert BFP Hotline / 911\]](#)

Fire Response Basic**Knowing What to Do and Having the Will to Do It.**

Effective suppression depends on two main factors

1. Extinguishing agent
2. method of applying that agent



12

[\[Insert BFP Hotline / 911\]](#)

Fire Response Basic**Trivia:**

Did you know that 60% of small businesses don't fully recover after a fire?

13

Fire Response Basic

Fight or Flight

Fight of Flight – Remembering to Balance the Risk

Lives are more valuable than any material object

Assess your abilities and evaluate the availability of firefighting equipment

Ask yourself

"Is the fire small enough?"

"Am I safe from toxic smoke and gasses?"

"Are escape routes accessible to me?"

"What does my gut tell me?"



14

[\[Insert BFP Hotline / 911\]](#)

202 MODULE 5 Basic Leadership Training through Fire Safety

Fire Response Basic
Methods of Extinguishment

Methods of Extinguishment

Four (4) primary methods of extinguishment, focuses on removing one or more elements of fire to break the chain and extinguish the flame.

1. Cooling
2. Starving
3. Smothering
4. Inhibition of Chemical Reaction



15 [Insert BFP Hotline / 911]

Fire Response Basic
Methods of Extinguishment

Cooling or Temperature Reduction



The most common method of extinguishment and depends on reducing the temperature of a fuel to a point where it does not produce sufficient vapor to burn.

Water is most commonly used

16 [Insert BFP Hotline / 911]

Fire Response Basic
Methods of Extinguishment

Starving or Fuel Removal



Fire is effectively extinguished by removing the fuel source or by stopping the flow fuel in the path of a fire.

Can also be done by allowing a fire to burn until all fuel is consumed.

This is the **most difficult** and often most dangerous methods of extinguishment.

17 [Insert BFP Hotline / 911]

Fire Response Basic
Methods of Extinguishment

Smothering or Oxygen Removal



Reducing the oxygen content in an area also puts out the fire

This is done through two methods:

- By flooding an area with inert gas such as carbon dioxide, which displaces the oxygen
- Separating it from the fire by covering the burning area with a noncombustible material

18 [Insert BFP Hotline / 911]

Fire Response Basic
Methods of Extinguishment

Interrupting the Chain Reaction (Inhibition)



Extinguishing agents, such as dry chemicals and halogenated hydrocarbons (halons), interrupt the flame-producing chemical reaction and stop flaming.

This is done by removing radicals needed for ignition

19 [Insert BFP Hotline / 911]

Fire Response Basic
Fire Protection Equipment

Fire protection equipment are specialized tools that can be a lifesaver in the event a fire ever breaks out

These can be broken down into two types:

- Active** Fire Protection
- Passive** Fire Protection



20 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Smoke Detectors



A smoke detector is an electronic fire-protection device that automatically senses the presence of smoke

2 Types:

- Photoelectric
- Ionization

Typical detection range is 3m^m or 10 feet

21 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Trivia:



Did you know the risk of dying in reported home fires was found to be 55% lower in homes with working smoke alarms compared to homes with no alarms or none that worked? (NFPA2021)

22

Fire Response Basic
Active Fire Protection Equipment**Smoke Detectors**

Frequently Asked Questions

How Many is Enough?

Why Does it Keep Making Noise?

How Do I Know It Is Working?



23

Fire Response Basic
Active Fire Protection Equipment**Maintaining your smoke detectors**

- ✓ Smoke detectors should be clean and free from any obstruction
- ✓ Place them not more than 12 inches from the ceiling if attached to a wall
- ✓ Test your fire extinguishers once a month and replace the battery every year
- ✓ If a smoke detector is more than ten years old, replace it.



24

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Fire Alarms**

A fire alarm is a fire protection device installed in a building or enclosed area that gives an audible or visible warning of a fire upon activation.

Alarms should be found along the corridors, at least on **every floor**.



25

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Maintaining Fire Alarms**

- ✓ Should be tested for function once a month
- ✓ Inspected for visible damage
- ✓ Manual fire alarm boxes should be tested to confirm that they can initiate the alarm.
- ✓ Verify audible and visual trouble signals.



26

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Fire Hose Cabinets**

These are mounted steel boxes containing a fire hose (50ft – 100ft) with an attached nozzle, fire extinguisher, and axe for immediate usage

They allow for:

- Quick suppression,
- One-person operation,
- Minimal water damage,
- Protection of exit routes

Found along corridors or near stairways.



27

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Fire Hose Cabinets**

Before using a fire hose cabinet:

Assess your fire: make sure that you know what type of fire is burning because not all fires can be put out with water.

Stay Safe, and plan your Escape: Make sure you have a clear line of retreat, and you have alerted people nearby before attempting to use a fire hose cabinet.



If the fire is too hot to bear, retreat.

28

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Fire Hose Cabinets**

Four Steps in Using Hose Cabinets:

1. Break the glass
2. Deploy the Hose by pulling it off the rack and bringing the nozzle to a safe distance from the fire
3. Turn the water on by opening the main valve and turning counterclockwise
4. Direct the stream at the seat of the fire (note: some nozzles may have a non-adjustable hose set to fog stream) and extinguish the fire using a sweeping motion.



29

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment**Maintaining Fire Hose Cabinets**

- ✓ Stretch out hoses at least once **every three months**, and change the position of the hoses folded in storage to prevent damage.
- ✓ Inspect your fire hose for fraying, tearing, or vandalism.
- ✓ Cabinets should be **tested** at least once every three years



30

[Insert BFP Hotline / 911]

204 MODULE 5 Basic Leadership Training through Fire Safety

Fire Response Basic Active Fire Protection Equipment

Fire Blankets

A fire blanket is designed to extinguish small fires by acting as a barrier to oxygen smothering the flames.

They consist of a sheet of fire-retardant such as fiberglass.

How to Identify a Fire Blanket:

Located near areas with flammable liquids or kitchens where grease fires are more likely to occur.

Mounted walls in a bright red or orange box will put tabs on the bottom.



31

[Insert BFP Hotline / 911]

Fire Response Basic Active Fire Protection Equipment

Fire Blankets

Before using a Fire Blanket, consider the following:

Am I big enough? Assess the size of the fire you are tackling before deciding to use a fire blanket.

Safe, Slow, and Steady: Remember to protect.



Remember: Fire blankets are single-use items. When in doubt, discard.

32

[Insert BFP Hotline / 911]

Fire Response Basic Active Fire Protection Equipment

Fire Blankets – How to Use

In case of a kitchen fire, you should:

1. Pull the tabs hanging from the bottom of the packet to release the blanket
2. Hold the blanket in front of you. Ensure the fabric is rolled back at the edges to keep your hands protected
3. Carefully place (do not throw) the fire blanket over the fire, ensuring it covers the entire area safely without touching you
4. Lay the blanket above the fire, careful to avoid the sides of the blanket, as flames can run over the sides and onto your hands
5. Once the fire is contained, to stop it from reigniting, you should turn off the heat source and leave the blanket over the area for at least 15-20 minutes until there is no longer heat present
6. Leave the room and call for help



33

[Insert BFP Hotline / 911]

Fire Response Basic Active Fire Protection Equipment

Fire Blankets – How to Use

Maintaining your Fire Blankets

- ✓ Remove the fire blanket from its container
- ✓ Inspect the fire blanket and container for visible damage
- ✓ Replace the fire blanket in its container and record the date on the service label!
- ✓ check to make sure that your fire blanket is not positioned too close to a fire risk



34

[Insert BFP Hotline / 911]

Fire Response Basic Active Fire Protection Equipment

Fire Blanket Deployment Inspection Demo and Practice

35

Fire Response Basic Active Fire Protection Equipment

Extinguishing Fire Ball

Before using an Extinguishing Fire Ball

Choose your Battles, and assess your fire: before attempting to tackle any fire, make sure that you have the necessary equipment needed.

Stay Safe, and plan your Escape: Make sure you have a clear line of retreat, and you have alerted people nearby before attempting to use any firefighting apparatus. **If the fire is too hot to bear, retreat.**



37

[Insert BFP Hotline / 911]

Fire Response Basic Active Fire Protection Equipment

Fire Extinguishers

Fire extinguishers are handheld active fire protection devices usually filled with a dry or wet chemical, CO₂, or other extinguishing agents used to suppress or control small fires.

It is used as a
FIRST AID to fight fires
in the **INCIPIENT STAGE**



38

[Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers

How Many Do I Need?

It Depends on your Structure and Hazard Classification but the minimum for low hazard areas are:

There should be one fire extinguisher for each enclosed room or a running distance of not more than 15 meters.

10 meters for Kitchens and areas with flammable liquids

39 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Activity I – Fire Protection Equipment

40

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers by Type

I. HFC (HYDROCHLOROFLUOROCARBON) 123
Fire Extinguisher:
HFC 123 is a clean extinguishing agent that removes heat and displaces oxygen from the combustion zone.
Used for Class A, B, and C fires
Typically, Painted Green
Advantage: Low Maintenance
Disadvantage: Relatively Expensive

41 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers by Type

II. Dry Chemical Powder Fire Extinguisher:
This is the most widely used type of fire extinguisher today and it is effective on Class A, B, and C fires
Dry Chemical fire extinguishers primarily extinguish fires by interrupting the chemical reaction and smothering.
Typically, Painted Red
Advantage: Relatively inexpensive
Disadvantage: Requires more maintenance, prone to caking

42 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers by Type

III. Carbon Dioxide (CO2) Fire Extinguisher:
Carbon dioxide extinguishers work by smothering the fire and removing its supply of oxygen.
Suited for Electrical Fires
This type of extinguisher is primarily intended for use on Class B and C fires.
It can be identified by its large elongated nozzle.

43 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers by Type

IV. Aqueous Film Forming Foam (A.F.F.F.) Fire Extinguisher:
The foam extinguishes liquid fires by creating a barrier on the surface of the liquid, preventing flammable vapors from reaching the air and starving the fire of fuel.
AFFF fire extinguishers can only be used on Class A and B fires.
Do not use on class C fires
In the Philippines, it is typically painted BLUE or RED

44 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

Fire Extinguishers by Type

V. Wet Chemical Fire Extinguisher:
The wet chemical rapidly knocks the flames out, cools the burning oil, and chemically reacts to form a soap like solution similar to AFFF extinguishers and, blanketing the surface and preventing re-ignition.
For class A, B and K fires.

45 [Insert BFP Hotline / 911]

Fire Response Basic
Active Fire Protection Equipment

RECAP : Extinguishers at a Glance

46

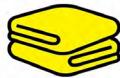
206 MODULE 5 Basic Leadership Training through Fire Safety

<p>Fire Response Basic Active Fire Protection Equipment</p> <p>Fire Extinguishers</p> <p>Before Using a Fire Extinguisher:</p> <p>Assess your fire, assess your extinguisher: Make sure that you know what type of fire is burning; certain fire extinguishers may not work or may make the fire even worse.</p> <p>Keep your Distance: Stand 6-8 feet away with your back to the exit when using fire extinguishers in enclosed spaces so you can make a quick escape.</p>  <p>47 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Active Fire Protection Equipment</p> <p>Fire Extinguishers</p> <p>When using a Fire Extinguisher remember T.P.A.S.S.</p> <p>T – Twist the pin to break the safety seal P – Pull the safety pin and test the extinguisher A – Aim low at the base of the fire S – Squeeze the lever and discharge the extinguisher S – Sweep from side to side and advance or retreat as necessary</p> <p>Place expected fire extinguishers on their sides to indicate that they are empty; this prevents other people from accidentally picking up expended extinguishers.</p>  <p>48 [Insert BFP Hotline / 911]</p>
<p>Fire Response Basic Active Fire Protection Equipment</p> <p>Fire Extinguishers</p> <p>Maintaining your Fire Extinguishers</p> <p>Inspect Fire Extinguishers Every Month</p> <ul style="list-style-type: none">✓ Check for physical damage, and pliability of the hose✓ Check the pressure reading✓ Make sure the extinguisher has not been tampered with✓ Make sure extinguishers are not exposed to the elements <p>For dry chemical powder extinguishers, prevent caking by flipping the extinguisher end over end once every two weeks.</p>  <p>49 [Insert BFP Hotline / 911]</p>	<p>How to Handle and Maintain a Fire Extinguisher</p> <p>50</p>
<p>What if you don't have fire extinguishers?</p> <p>What now?</p> <p>51</p>	<p>Fire Response Basic Extinguishment Using Common Items</p> <p>Extinguishment Using Common Items</p> <p>Because the majority of fires still at fires at home, it is important to know how to use common household items to extinguish small fires.</p> <p>Remember, every fire is different.</p> <p>You can use:</p> <ul style="list-style-type: none">WaterSalt and Baking SodaWet TowelWet Sand or Soil  <p>52 [Insert BFP Hotline / 911]</p>
<p>Fire Response Basic Extinguishment Using Common Items</p> <p>Extinguishment Using Common Items</p> <p>Water</p> <p>Application: Ordinary combustible materials (class A) Make sure there are no electrical outlets or other electrical connections near the fire.</p>  <p>Accidentally dousing outlets will cause electrocution.</p>  <p>53 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Extinguishment Using Common Items</p> <p>Extinguishment Using Common Items</p> <p>Salt and Baking Soda</p> <p>Depives the fuel of oxygen and helps to reduce and eventually extinguish the fire.</p> <p>Application: Class A, B, C, D, K fires</p> <p>To put out even a small fire, large quantities of baking soda and salt are necessary.</p>   <p>54 [Insert BFP Hotline / 911]</p>

Fire Response Basic
Extinguishment Using Common Items**Extinguishment Using Common Items****Wet Towel or Cloth**

This is an improvised Fire Blanket. Make sure to use a thick cloth.

Application: Class A, B, and K fires



55

[Insert BFP Hotline / 911]

Fire Response Basic
Extinguishment Using Common Items**Extinguishment Using Common Items****Wet sand or Soil**

This is commonly found near gasoline stations or areas with plenty of grease and oil.

You need to cover the entire area of the fire.

Application: Class B, K fires



56

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**Common Fire Emergencies**

57

Fire Response Basic
Common Fire Emergencies**What to do if my clothes catch on fire?**

58

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**What if another individual catches on fire?****You Can use a Fire Blanket or A Wet Towel**

Remember:

Do not attempt to fan the flames, this will only make it worse



59

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**Putting out Different Kinds of Fires****Kitchen Fires**

- ✓ If the fire is small enough, cover it with a cooking lid or damp cloth. Keep it covered for about 30 minutes or until it has cooled down.
- ✓ Cover the fire with a fire blanket a large piece of fire-resistant material such as fiberglass. If there are no fire blankets available, use a thick wet cloth. Carefully place it over the flames at leave it there for at least 30 minutes.
- ✓ If the fire only covers a small area, you can use salt or baking soda to put it out (Make sure it is baking soda and not flour)
- ✓ Turn off any heat source.

Leave the room and call 911

60

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**Putting out Different Kinds of Fires****Chemical Fires**

- ✓ Cover the fire with a fire blanket. Drape it over the flames at leave it there for at least 30 minutes.
- ✓ You can also pour large quantities of salt and baking soda.
- ✓ Leave the room and call 911

61

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**Putting out Different Kinds of Fires****Electrical Fires**

DO NOT USE WATER to put out an electrical fire.

- ✓ Unplug the device or turn off the electricity by flipping off the house's circuit breakers
- ✓ Once breakers are turned off, and you are sure power has been cut, you may extinguish the flames like any ordinary fire
- ✓ Additionally, you may smother the flames by pouring baking soda onto them.
- ✓ Call 911

62

[Insert BFP Hotline / 911]

208 MODULE 5 Basic Leadership Training through Fire Safety

<p>Fire Response Basic Common Fire Emergencies</p> <p>Putting out Different Kinds of Fires</p> <p>Engine Fires</p> <p>Using wet sand or soil to contain the spread of flammable fuel may slow down the flames.</p> <p>Large quantities of baking soda may also be used; however, this is not recommended because of the inherent dangers.</p> <p>Ordinary Fires</p> <p>Ordinary fires involving paper, Wood, clothing, trash, or plastic respond well to water.</p> <p>63 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Common Fire Emergencies</p> <p>15 Minute Break</p> <p>64 [Insert BFP Hotline / 911]</p>
<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>Before A Fire</p> <p>I. Plan Ahead, Know Your Exits</p> <p>II. Check your Building Evacuation Plan</p> <p>Commonly posted along corridors and near stairway landings</p> <p>What do I need to look for?</p> <p>E – Exits E – Extinguishers. A – Assembly Points.</p> <p>65 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>During A Fire</p> <p>Similar to how fires spread quickly when discovering a fire, you need to remember R.A.C.E.</p> <p>R – Remove those in Danger</p> <p>A – Alarm, Alert 911</p> <p>C – Confine the Fire</p> <p>E – Extinguish or Evacuate</p> <p>66 [Insert BFP Hotline / 911]</p>
<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>During A Fire</p> <p>R – Remove those in Danger</p> <p>Pause, Breath, Think. The first thing you should do when discovering a fire is to take a deep breath and not panic. Next is to let other people know that there is a fire and get them out. Do not risk extinguishing the fire before removing people from the area.</p> <p>67 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>During A Fire</p> <p>A – Alarm, Alert 911</p> <p>Pull the fire alarm and alert authorities by calling 911. When reporting a fire, remember to:</p> <p>Say what is burning Tell them where. Location of the fire, including landmarks How many are injured or trapped (if any) And your name and phone number to contact you.</p> <p>Do not assume that someone else has made the call for you. If unsure, make the call yourself.</p> <p>68 [Insert BFP Hotline / 911]</p>
<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>During A Fire</p> <p>C – Confine the Fire and Smoke</p> <p>Move away from the fire and smoke. Limit the spread of the fire by closing doors and windows behind you if time permits. Doing this can give others more time to evacuate. Never open doors that are warm to the touch</p> <p>69 [Insert BFP Hotline / 911]</p>	<p>Fire Response Basic Reacting To Fire Emergencies</p> <p>During A Fire</p> <p>E – Extinguish or Evacuate</p> <p>Never ignore a fire alarm. If you hear one, you should alert other people around you and go to the nearest emergency exit and get to safety.</p> <p>If you have been trained and have the means to do so. Attempt to extinguish the fire if it is still small enough.</p> <p>Remember: Assess your fire. If it's too hot to bear, evacuate.</p> <p>CRAWL IF YOU MUST!!</p> <p>Covering your mouth and nose with a damp cloth can help you breath in a smoke filled room NO SMOKE 32 INCHES FROM THE FLOOR</p> <p>70 [Insert BFP Hotline / 911]</p>

Fire Response Basic
Reacting To Fire Emergencies**After Evacuating****Do Not Attempt to Go Back**

No amount of money is worth a life.

If you were able to get out, stay out

**Check Yourself, Help Others**

After evacuating, do a quick check to see if you have any injuries you might not have noticed.

In an emergency, **adrenaline** can dull the pain from cuts and bruises.

71

[Insert BFP Hotline / 911]

Fire Response Basic
Common Fire Emergencies**Questions?**

72

Fire Response Basic
Common Fire Emergencies**Thank You**

73

Dedication

This module was created as part of the Standardized Fire Education Manual (SFPE) of the Bureau of Fire Protection which hopes to reach out to young adults and offer them a program that helps them enhance their leadership potential, discover their leadership styles, and activate their self-awareness – all while learning the various contexts attached to fire, such as its causes and origin and how to be safe around it.

The module seeks to train young adults who may be college students, out-of-school youths, students under the Alternative Learning System, Sangguniang Kabataan officials, and members of youth organizations.

Part 2

Basic Leadership Training through Fire Safety

ADVANCED COURSE

Advanced Course

Course Outline

I. Course Rationale

The maxim “Leaders are not born; but made” helps us realize that leadership is a skill to be discovered and developed, not a birthright. Along this line, it is important to reinforce basic leadership training with advanced ones so that young leaders may be able to elevate their leadership capabilities and become more responsive to the needs of their communities.

This leadership training course in the context of fire safety is a package by the Bureau of Fire Protection for young adults to provide yet another opportunity for them to discover their leadership potential and capabilities and to emphasize that there is more to learn about fire than mere prevention and suppression.

The end goal of the Basic Leadership Training through Fire Safety – Advanced Course is to offer reinforcement of the knowledge and information acquired through the Fundamental Course – from activating the desire to be involved in basic principles of proactive transformation to their appreciation of the importance of teamwork in every shared responsibility that may have to undertake in the future. With young adults as the target participants, the Bureau of Fire Protection crafted this Course not only to plant the seed of leadership among potential leaders but also to cultivate that seed and see through the welfare of the youth in terms of developing their leadership skills.

The BFP Leadership Training Through Fire Safety – Advanced Course is here to stay for as long as there are young people who have gone through the Fundamental Course and who need to reawaken the spirit of leadership in them.

II. Core Values

Core Values are an essential part of every leadership training design, without which the training would be rendered futile and visionless. Hence, the Intermediate Course of the Basic Leadership Training through Fire Safety (BLTFS) of the Bureau of Fire Protection has enshrined Teamwork as its sole core value mainly because this level shall serve as a phase where the participants are expected to have mastered the core values included in the Fundamental Course of this leadership training.

III. Course Description

A. Program of Instructions

Basic Leadership Training through Fire Safety (BLTFS) – Fundamental Course is a two-day course that covers basic information and knowledge about fire, preceded by basic principles of individual commitment to community and fire safety.

SUBJECT	DESCRIPTION	NUMBER OF HOURS
Teamwork: Foundation of Good Leadership	Enumerates the different values that define teamwork	1 hour
Youth Fire Emergency Response Team	Cultivate leadership skills among members	1.5 hours
Bucket Brigade: Water Warriors Chain	Practice working as a team to pass buckets	2 hours
Hose Management and Employment	Identify different types of hoses in-use during fire response	2.5 hours
Rope Hero Essentials	Demonstrate proficiency in basic rope rescue techniques	1.5 hours
BlazeMobile Command: Youth Drivers Training	Introduction to different firefighting methods	2 hours
Hazmat Awareness during fire incident	Recognize hazardous materials, labels, and symbols	2 hours
Emergency Evacuations and Social Herd Behavior	Formulate proper evacuation procedures	1 hour

B. Method of Execution

Since this is leadership training in advanced level, most of the methodologies included in this module are team-centered in which the participants get to perform tasks that inspire them to appreciate the strength and advantages of working as a team.

Also, all activities included in this module are anchored to the core values that the BFP would like to instill among the participants. They shall be closely supervised to ensure that all tasks and activities are performed with caution and maximum safety.

C. Course Requirements

1. Materials

The provision of the following training materials shall be subject to the limitations of the BFP. Other requirements shall be borne by the requesting party.

For guidance, the necessity to provide all the requirements listed hereunder is specifically instructed in each subject's Lecture Guide, inside the Facilitator's Note

Materials	BFP	Requesting Party
a. Primary Tools		
✓ Multimedia Projector	1	
✓ Powerpoint Presentation		
✓ Visual Examples	1	
• Nozzles (straight nozzle, variable stream nozzles)		
• Hoses (1 ½ in, 2 ½ in, 3 in, 4 in)	1	
• Hose appliances and tools (adaptors, reducers, spanners, hydrant key, gated Y, strainer, hose jacket, hose protector)	1	
• Educational diagrams and charts	1	
• Protective gear	1	
• Rope rescue equipment		1
• Training facility	1	
• Safety gear	1	
• Training mannequins		1
• White boards and markers	1	
• Firetruck (or simulation models)	1	
• Hoses, nozzles and pump panel		1
• Building plan layout	1	
• Fire evacuation plan sample		
• Evacuation checklist	1	

Materials	BFP	Requesting Party
✓ Others		
• Informative pamphlets	1	
• Empty organizational chart	1	
• Visual presentations	1	
• Sample role descriptions	1	
• Buckets	1	
• Water sources	1	
• Measuring stick	1	
• Whistle	1	
• Safety gear (e.g. Gloves, eye protector)	1	
• Communication tools	1	
• Fire extinguisher (for demo purposes)	1	
• Training facility of Safe Outdoor Space	1	
• Training videos	1	
• Hazmat basic PPE	1	
• Simulated hazmat placards	1	
• Safety gear (e.g. Gloves, eye protector)	1	
• Communication tools	1	
• Fire extinguisher (for demo purposes)	1	
• Training facility of Safe Outdoor Space	1	
• Training videos	1	
• Hazmat basic PPE	1	
• Simulated hazmat placards	1	
b. Alternative Tools		
✓ Flip cards	1	
✓ Powerpoint hand-outs	1	
✓ Visual Examples		
• Virtual reality (VR) simulators	1	
• Online learning platforms	1	
• Any useable means of making an example	1	
• Various firefighting tools	1	
• Lighters	1	
• Piece of crumpled scratch paper	1	
✓ Others		
• Interactive workshops	1	
• Guest speakers	1	
• Cups or mugs	1	
• Imaginary props	1	
• Any useable means of making an example	1	
• Firetruck simulator software	1	
• Videos and animations	1	
• apps	1	
• Training manuals and guides	1	
• Online resources	1	
• Role-play scenario	1	

box.

2. The Training Team

The training team may be composed of, but not limited to, the following BFP personnel for the duration of the leadership training:

One (1)	Team Leader
Two (2)	Lecturer/Facilitator
One (1)	Photographer/Secretariat

The BFP may opt to deploy more than the aforementioned figures, if necessary.

3. Supplies

The following requirement shall be provided by the requesting party for the consumption of the training team and the participants.

- Meals and Snacks for two (2) days
- Identification Cards for printing and distribution
(format and specs shall be provided by the BFP)
- Fuel, if necessary
- Sound System
- Projector
- Contingency fund

Other supplies requirement shall be mentioned by the City/Municipal Fire Marshal, upon approval of the request. The BFP shall exercise reasonable care in providing unnecessary training requirements to the requesting party.

4. Venue

The requesting party shall provide a venue suitable for this training and can accommodate the 30 participants and the BFP training team. Strictly, the venue shall be within the AOR of the requested BFP training team.

5. Certificates and Badges

Participants who successfully completed this two-day course shall receive a Certificate of Completion like the one shown below. The training team shall use the heading of their unit/station for identity purposes. Likewise, the City/Municipal Fire Marshal shall be authorized to sign every certificate produced in this training.



Fig. 1 Certificate of Completion

Upon registration, each participant shall present their ID cards stamped with BLTFS-FC as proof that they have completed the Fundamental Course. Failure to do so shall not qualify the participant to attend this course.

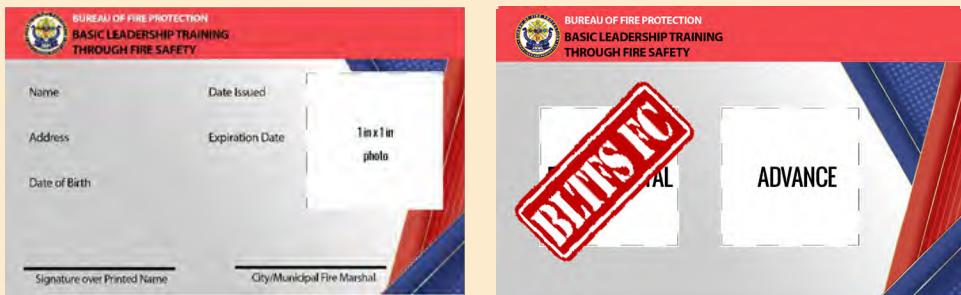


Fig. 2 ID Card of Participants

By the end of this course, both the empty boxes must be stamped. Another stamp shall be procured by the City/Municipal Fire Marshal bearing the letters "BLTFS – AC" to be used for this purpose.



Fig. 3 Stamp for Advanced Course



Fig. 4 Badge for Advanced Course

The second badge shall be given to the participants after completion of this course.

6. Commitment Board

Youth Fire Emergency Response team is a subject of this course engaging in the leadership qualities of the young adults. Role playing is an important team building activity to assess the effectiveness of these skills and the application of teamwork.

Its creation and activation is purely during the duration of the entire training only and for the purpose of performance evaluation in the emergency scenarios only. YERT is not an authorized responding team during actual fire and other emergency situations. Thus, the BFP on this matter shall not be held liable..

7. Coordinating Instructions

To avail of the Basic Leadership Training through Fire Safety – Advanced Course, the requesting party may forward a letter addressed to the City/Municipal Fire Marshal of their local fire station, containing, among others, the proposed venue and dates of the leadership training; further stating that the recommended participants have already undergone the BLTFS – Fundamental Course with proof of the same through a photocopy of their certificate of completion.

The BFP, through the City/Municipal Fire Marshal, shall respond to accommodate such request, subject to the availability of a lecturer on the given schedule. Otherwise, the BFP and the requesting party may agree on a different schedule to accommodate the request.

The participation of the BFP shall be limited only to the training team and other equipment inherently available with the BFP. Other training requirements, such as food, venue, and materials needed shall be borne by the requesting party.

8. Participants Requirements

Interested participants shall provide the Certificate of Completion from the Fundamental Course and acquire a recommendation from the Requesting Party.

The ID cards must be worn throughout the duration of the training.

Dress Code: Comfortable training clothes.

IV. The Training Subjects Outlines and Lecture Guides

See Attached file

V. Annexes and Training References

Annex 1 – Program of Activities
Annex 2 – Culminating Activity

ANNEX 1 – PROGRAM OF ACTIVITIES

front page

BUREAU OF FIRE PROTECTION
_____ Fire Station

Basic Leadership Training Through Fire Safety



TRAINING DIARY

Name of Participant: _____

inner page 1

Training Program

Advanced Course, Day 1

- | | | |
|-----|---|--------------------------------------|
| I. | Registration | |
| II. | Opening Program
National Anthem
Opening Remarks
Overview of the Course
and House Rules
Expectation Setting | Requesting Party
Team Leader, BFP |

III. Lesson Proper

Teamwork: Foundation of Good Leadership
Youth Fire Emergency Response Team

LUNCH BREAK

Bucket Brigade: Water Warriors Chain

- IV. Team Building Activity
V. Daily Course Evaluation

Advanced Course, Day 2

- I. Prayer
II. Recap of Day 1
III. Lesson Proper

Hose Management and Employment
Rope Hero Essentials

LUNCH BREAK

Advance Firetruck Operation and Firefighting

- IV. Team Building Activity
V. Daily Course Evaluation

inner page 2

Training Program

Advanced Course, Day 3

- I. Prayer
- II. Recap of Day 2

III. Lesson Proper

Hazmat Awareness during fire incident
Emergency Evacuations and Social Herd Behavior

LUNCH BREAK

IV. Culminating Activity/ Simulation Exercises

V. Closing Program

Reflection from the participants (call at least 3)

Awarding of Certificates and pinning of badges

Stamp imprinting

Closing Remarks City/Municipal Fire
Marshal

Photo ops

inner page 3

MY NEW BEST BUDDIES

Name _____

Contact Number

[back page](#)

THE LEADERSHIP TRAINEE'S PRAYER

Dear God,
Creator of this beautiful Universe,
Giver of life, wisdom, and strength,
Provider of miracles big and small...

I come before You today, emptying my cup of knowledge,
Leaving only the songs of praises that You alone are worthy of.

As I step into this Leadership Training,
I lift up to You my worries and cares,
Knowing that You alone
can pour out wisdom in this temple I call body.

As I entrust myself to the expertise of the trainers in this course,
I do so with total surrender, knowing that it is You who has sent them here
today.

Lord, there is nothing else I would rather have
Than Your heavenly presence to be with me
throughout this course and for the rest of my life.

Guide my mind so that it wanders not into the realms of resistance and
disengagement.

Guard my body so that it may yield only to the teachings of today's training.
Give me strength and courage so that I may be able to fulfill your purpose for
me.
Today and for always.

In the mighty name of Jesus,
I thank You for this life you have so fearfully and wonderfully made.
Amen.

ANNEX 2 – CULMINATING ACTIVITY

DISCLAIMER: The situation in this activity is entirely based on fiction excepting only certain places and names of schools which are made convenient for this purpose only.

I. Total Time of Execution: 15 minutes

II. Instruction

Activate YERT. Ensure that all the equipment needed by each team is complete. Allow 5 minutes for each team to recover their equipment before handing over to the Team Leader the scenario. YERT is given the discretion to decide what emergency action will be dispensed in the given situation.

III. Scenario 1: EXPLOSION AT THE SCIENCE LAB

It is almost lunch time at Palawan State University, when suddenly a loud explosion at the Science Lab surprised the whole university. One student catching his breath from running, reported to the YERT that a science experiment was on-going before the explosion. Several BS Medical Technology students were in the room including their professor and their safety is still unknown.

Another student was heard shouting that a fire has already started from the Science Lab causing heavy smoke in the second floor. The students from the whole university started to panic causing disturbance.

The security guard reported that there are chemicals in the science lab room stopping him from entering to save the victims because he has no idea if those are hazardous materials or not.

As members of the YERT, what will you do? Report your actions when proper authorities arrived at the scene.

Materials Needed:

Hazmat symbols

Fire pit

Writing Materials

Accomplished Fire Protection Plan

Other equipment to be provided by the YERT

Expected Output:

1. Ensure that all the students and faculties are safely removed from danger and all accounted for.

2. Guide the individuals in the Science Lab to safety using Obstacle Course Rescue.
3. Provide first aid to injured individuals. Properly turn over to medical professionals if requires advanced care.
4. Combat and manage fire using available extinguishers and establishing standard protocol in fire suppression.
5. Identify HAZMAT present in the area
6. Maintain order among evacuees and manage the crowd.

Scenario 2:M7.3 EARTHQUAKE AT MENDIOLA STREET

While on-site classes are ongoing at the University belt, a magnitude 7.3 earthquake was felt along Mendiola Street, a short thoroughfare in Manila. Immediately, an alarm was sounded in your school, and students rushed out from their classrooms. However, while evacuating the building, a fire started at one of the exit re-routing the students coming out of the building. The fire grows fast engulfing one classroom in the short span of time. At this point, students started to panic causing injury to each other.

The YERT, already activated, responded to assist the firefighting team of the university.

Materials Needed:

Fire pit

Moulage kits

Writing Materials

Accomplished Fire Protection Plan

Other equipment to be provided by the YERT

Expected Output:

1. Ensure that all the students and faculties are safely removed from danger and all accounted for.
2. Secure alternative emergency exit for individuals from higher levels of the building (emergency rappelling)
3. Provide first aid to injured individuals. Properly turn over to medical professionals if requires advanced care.
4. Combat and manage fire establishing standard protocol in fire suppression.
5. Maintain order among evacuees and manage the crowd.
6. Manage traffic of incoming firetrucks and other responding emergency vehicles.
7. Assist in hose laying and suppression using the firetruck.

Chapter 1

Basic Leadership Training through Fire Safety

TEAMWORK: Foundation of Good Leadership



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 1...

Goal

For the lecturer to guide the participants in appreciating the importance of TEAMWORK as a steady foundation of good leadership.

Objectives

By the end of the session, participants should be able to:

1. Define the various dynamics of teamwork;
2. Gain valuable insights for personal consumption; and
3. Apply such dynamics in their daily encounters and interactions within their community.

Total Time of Delivery:

30 minutes

Subject Aids Needed:

1. Multimedia Projector
 2. Powerpoint Presentation with illustrations and short dialogues
-

Subject Overview

Purpose: To condition the minds of the participants on fire safety in the context of teamwork.

General Guidance: Lecturers of this module must, at all times, adhere to the following guidelines/instructions:

1. Grooming and Appearance

- ✓ 1.a Lecturers must always be in their proper uniform, complete with headgear (if necessary) and prescribed paraphernalia.
- ✓ 1.b Lecturers must always sport a neat appearance, including proper haircuts and no visible stubbles (for males) and minimal make-up with slick hair-do (with prescribed hair-bun for females).
- ✓ 1.c Lecturers must aspire to look dignified and honorable, especially in their manner of speaking, walking, and dealing/communicating with their audience.

Cheat Sheet

Subject Outline

Audio/ Visual Aids	Outline	Notes
PPT COVER	1. INTRODUCTION Greet participants and dignitaries present. Introduce yourself and your team.	A short program may be initiated, including Nationalism and an opening invocation.
LG1-1 PPT S2-3	2. MOTIVATION Ask the participants: Who among you here was present in the Basic Leadership Training? Do you remember Gabriel and Mark? Lay down goals and objectives	Call on participants – at least three – to respond. Encourage active participation. Ask participants to recall the topic or have them re-read the short story from the Fundamental Course
LG1-1 PPT S4-12	3. LESSON PROPER Relate bench-mark story. Proceed to main topics.	Have participants relate such values to situations that need such response, particularly during a fire incident
PPT S13-14	4. SUMMARY OF THE LESSON Ask for a recap of the lessons learned by the participants	
	5. CLOSING EVALUATION Review objectives End subjects by acknowledging active participation and support from the receiving entity	Gather insights from the participants
	Nothing Follows	

Cont.

- ✓ 2.a Lecturers must arrive at least 30 minutes earlier at the venue to allow them ample time to check on the readiness of equipment and materials to be used during the lecture.
- ✓ 2.b Lecturers must begin their lectures with a short introductory program that includes invocation, act of nationalism, and words of welcome/inspiration from school administrators or the BFP officers present.

2. During Lecture Proper

- ✓ 3.a Lecturers must speak in a clear, well-modulated voice so as not to bore or disengage their audience.
- ✓ 3.b Lecturers may infuse humor in the delivery of their lectures, provided that they refrain from using profane language (e.g. cursing, highly sexualized or green jokes) as a tool to maintain attention from their audience.
- ✓ 3.c Lecturers may choose to deliver their lecture in English, Filipino, or the local dialect, provided that they can do so in a manner that is audible and understandable to the audience.
- ✓ 3.d Lecturers must strictly adhere to the topics and materials prescribed in this module during the delivery of their lecture unless there is a justifiable need to improvise or provide alternatives.
- ✓ 3.f As much as possible, lecturers must always invoke active participation from the participants by allowing them to recite, ask questions, or return demonstrations.
- ✓ 3.g Lecturers must aspire to finish their lectures within the time allowed without compromising the quality and content of their lectures.

3. After Lecture Proper

- ✓ 4.a Lecturers must ensure learning and retention among participants by administering an evaluative tool after the discussion and lecture proper.
- ✓ 4.b Lecturers must see to it that the venue is spick and span before the culmination of lectures by advising participants to observe CLAY Go (Clean as you go).

What Makes Up A Great Team?

If you were able to join the basic level of this leadership training, you would know the story of Gabriel and how he and his neighbors and the firefighters of their town put out the fire that almost placed their place in danger. Well, Gabriel and Mark went on to become firefighters in their town, and it was all because of that fateful night! For you to appreciate where we are headed here, let us try to read again the story of Gabriel and Mark and their neighborhood during that fire incident. (Have participants to read the story).

Today, you are blessed to be here as you are about to experience another remarkable training that might inspire you just like Gabriel and Mark. Are you excited to take on a bigger role in your community, too? If you are, shout a big YES, and let's get moving!

But before let's get moving, I would like you to group yourselves into five. Now, each group must be seated together and choose a team leader.

Listed below are some values that Gabriel and Mark, including all firefighters and team players, live by to uphold a great team. The same values you will learn for you to know what to do when you become part of a team (or a firefighter someday), but before you read on, ask yourself first: am I a team player or a team outcast/spoiler?

1. Trust

Trust is defined as the strong belief in the reliability, strength, or ability of someone or something. It is built through competence, consistency, loyalty, and empowerment. Without this, there would be no taking calculated risks that could lead to success in a team.

2. Effective Communication

When you say effective communication, it is the process of exchanging ideas, thoughts, opinions, knowledge, and data so that the message is received and understood with clarity and purpose. When we communicate effectively, both the sender and receiver feel satisfied.

Effective communication starts with clear messages. Once you do it right, you will know that you are on your way to becoming a good communicator. Then, you would only have to reinforce it with frequency and consistency.

Let us focus on clarity, first. Let's do something. I know you have played this before and you would agree that you had fun. The game is called MESSAGE RELAY and it's very easy.

Facilitator's Note [1/5]

The lecturer may re-introduce the story to refresh the participants' memory of the same.

Facilitator's Note [2/5]

The lecturer may discuss the game or activity recently performed by the participants to gain insights and encourage interaction.

*Trust Fall is done by selecting, at least, ten participants to serve as catchers and one to do the trust fall.

**Blind obedience can be performed by blindfolding a participant to test his or her ability to identify which commanding voice to follow while he or she walks toward a designated endpoint.

Facilitator's Note [3/5]

Lecturer may have this as an ice breaker with simple prizes, such as load or cash gifts.

Facilitator's Note [4/5]

Now, let's go back to the activities that you just performed. Were you able to show appreciation towards your teammates? If not yet, I would like you to pat one another on the shoulder and say, "Good job!"

3. Appreciation Of Team Members

There is no "I" in a team. It is important to let your teammates know that you value their contribution, loyalty, individuality, and their presence in the team. Be the teammate that recognizes everyone's capabilities in complementation to everyone else's abilities. Sometimes, it is the appreciation that seals the broken parts of a team and strengthens the weaker points.

Simple gestures like a pat on the back or an affirmation of your unreserved support would go a long way in saving a teammate's day so don't be frugal. Let those good words come out of your mouth.

4. Meeting Regularly

How frequently should a team meet? It depends on the needs. If a task needs your constant catching up at least once a week, then set it. Besides accomplishing something, frequent updates through in-person or virtual meetings set the pace of a team's accomplishments.

Regular meetings are an effective way to ensure that things are done on time and on point. It checks on the direction of a team whether it is going on a unified way or someone has gone astray.

Facilitator's Note [5/5]

The lecturer may inquire about the insights or previous experiences of participants in working together.

5. Working Together

Not against one another. Working together may also mean having to set aside one's personal agenda to support a common goal. Be ready to share your resources and think of the gigantic impact it may have on the success of the team. Remember, your team's success is your success.

6. Order Of Priorities

A great team works by a system. Its members know when and how to put things to order – from the most important task or consideration to the most minute detail or information. There is a focus on a SMART goal. And SMART goal means Specific, Measurable, Attainable, Relevant, and Time-bound.

7. Rest And Recreate

If you're seeing the silver lining of an ocean while reading this, then you definitely need to go for some team-building escapade. Pack up some food, prepare some games, invite a resource speaker, and do some reflecting by the seashore at night. Just one more thing: do it sober and be safe

8. Knowledge-Based

A great team works with accurate information and well-founded knowledge. It does not feed on hearsay. It relies on verified statistics and well-founded information. Great team members hunger for continuous learning and they always do it as one.

Your Take Away

Now you have learned that a team is not just a group of people seated together, staring at a clock until it's time to part ways. A team is a pact that is driven to achieve a goal – TOGETHER. Ask yourself again: am I a team player or a team outcast? If you believe you are a team player, then you are ready to share yourself with your team. Good luck with that and always remember: keep moving because movement is life, which means...

Movimiento Es Vida

"Movement is Life!"

Chapter 1

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

TEAMWORK: FOUNDATION OF GOOD LEADERSHIP

4

Goal:
For the lecturer to guide the participants in appreciating the importance of TEAMWORK as a steady foundation of good leadership.

2

Objectives:
At the end of the lesson, the participants should be able to:

1. Define the various dynamics of teamwork;
2. Gain valuable insights for personal consumption; and
3. Apply such dynamics in their daily encounters and interactions within their community.

3

WHAT MAKES UP A GREAT TEAM?

4

1. TEAMWORK
2. LEADERSHIP
3. COMMUNICATION
4. COLLABORATION
5. INNOVATION
6. DIVERSITY
7. COMMITMENT
8. TRUST
9. INTEGRITY
10. ACCOUNTABILITY
11. RESPECT
12. HONESTY
13. FAIRNESS
14. TRANSPARENCY
15. TEAM SPIRIT



5





9



10



11



12

Questions?
Comments?

13

**Thank you
and
good day!**

14

236 MODULE 5 Basic Leadership Training through Fire Safety

Chapter 2

Basic Leadership Training through Fire Safety

Youth Fire Emergency Response Team for Young Adults



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 2...

Goal

To empower young individuals with the knowledge, skills, and leadership qualities necessary to organize and effectively operate as fire emergency response team, ensuring safety and well-being of their communities in the face of fire emergencies.

Objectives

By the end of the session, participants should be able to:

1. Establish a dedicated and enthusiastic group of young individuals interested in fire safety and emergency response
2. Equip members with fundamental knowledge about fire safety, prevention, and initial response techniques.
3. Define specific roles and responsibilities within the FireSquad Youth Heroes team to ensure organized and efficient emergency response.
4. Cultivate leadership skills among members, enabling them to confidently lead and coordinate during fire emergencies.
5. Establish a strong network with local fire stations and emergency services, fostering cooperation and mutual support during emergencies.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Others
 - i. Informational pamphlets
 - ii. Empty Organizational Chart
 - iii. Visual presentations
 - iv. Sample Role Descriptions

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Interactive Workshops
 - ii. Guest Speakers

Total Time of Delivery:

25 to 30 Minutes

Cheat Sheet

Subject Overview

Purpose: To establish a dedicated group focused on understanding specific roles and responsibilities during fire emergencies. By defining these roles clearly, the team can respond efficiently and contribute effectively in various emergency situations.

General Guidance: Emphasize the importance of communications among team members to ensure everyone understand their roles. Highlight the significance of collaboration and mutual support within the team. Encourage leadership skills development, even without formal training, to ensure efficient role execution.

Things to Consider: Roles should be tailored to suit the team's demographics and community's specific requirements. Roles and responsibilities should be periodically reviewed to align with the evolving needs of the community. Establish feedback mechanism where team members can provide insights on the effectiveness of their roles during drills or real emergencies.

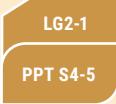
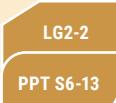
Subject Outline

Audio/ Visual Aids	Outline	Notes
	1. PREPARATORY 1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged.	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on Youth Fire Emergency Response Team. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
	1.2 Provide an overview of the session and capture participants' interest.	Briefly introduce the topic: " Today, we embark on a crucial discussion about organizing a Youth Fire Emergency Response Team. This initiative empowers you to become leaders in fire safety and emergency response within your community." Get ready for an engaging and informative session!"

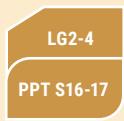
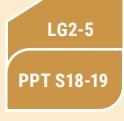
Cont...1

Audio/ Visual Aids	Outline	Notes
PPT S2-3	1. PREPARATORY 1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: "Our goal is to equip you with the knowledge, skills, and leadership qualities necessary to establish and operate an effective Youth Fire Emergency Response Team." We aim to empower you with practical knowledge that you can apply in real-life situations."
LG2-1	2. MOTIVATION 2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts. 2.2 Foster a sense of camaraderie and ease participants into the session 2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!" Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion. Conclude the preparatory phase with a motivating statement: Encourage active participation and emphasize the significance of community engagement. Foster a sense of responsibility among participants towards ensuring the safety of their community. With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
 LG2-1 PPT S4-5	<h3>3. LESSON PROPER</h3> <p>3.1 Understanding the Role of Youth Fire Emergency Response Team</p> <ul style="list-style-type: none">Discuss the importance of youth involvement in community safety.Explain the roles and responsibilities of team members during fire emergencies.	<p>Encourage participants to actively engage in discussions and share their ideas about team-building and community engagement.</p> <p>Emphasize the importance of mutual respect and effective communication within the team.</p> <p>Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.</p>
 LG2-2 PPT S6-13	<p>3.2 Organization Structure and Leadership</p> <ul style="list-style-type: none">Detail the organizational structure of the team, including roles such as team leader, communication officer, first aid responder, and evacuation coordinator.Discuss leadership qualities and effective communication within the team.	<p>Encourage active participation and questions throughout the session.</p>
 LG2-3 PPT S14-15	<p>3.3 Fire Safety Training and Skills Development</p> <ul style="list-style-type: none">Outline the necessary fire safety training programs for team members, including basic firefighting techniques and first aid skills.Emphasize the importance of continuous skill development and regular training sessions.	

Cont...2

Audio/ Visual Aids	Outline	Notes
 LG2-4 PPT S16-17	<p>3.4 Community Engagement and Awareness</p> <ul style="list-style-type: none">Discuss strategies for raising fire safety awareness within the community.Explore methods for organizing fire safety workshops, drills, and awareness campaigns.	<p>Encourage participants to actively engage in discussions and share their ideas about team-building and community engagement.</p>
 LG2-5 PPT S18-19	<p>3.5 Collaboration with Local Authorities</p> <ul style="list-style-type: none">Explain how to collaborate with local fire stations, emergency services, and other relevant authorities.	<p>Emphasize the importance of mutual respect and effective communication within the team.</p>
 LG2-6 PPT S19-20	<p>3.6 Team-Building and Conflict Resolution</p> <ul style="list-style-type: none">Share team-building exercises and strategies to strengthen camaraderie and teamwork.Discuss conflict resolution techniques to maintain a harmonious team environment	<p>Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.</p> <p>Encourage active participation and questions throughout the session.</p>

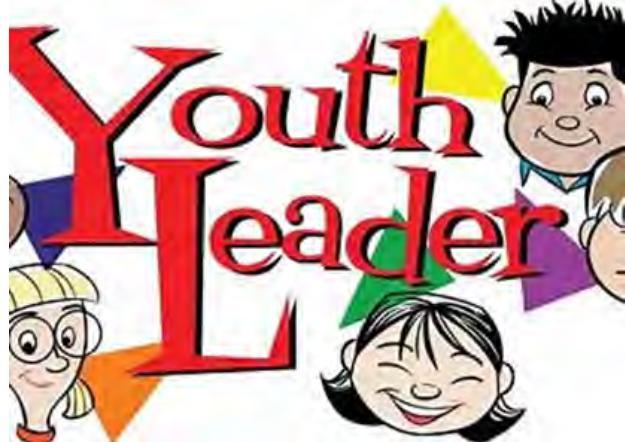
4. GENERALIZATION

<p>4.1 Recapitulation of Key Points</p> <ul style="list-style-type: none">Summarize the essential aspects of organizing a Youth Fire Emergency Response Team.Reinforce the significance of youth participation in community safety initiatives.	<p>Encourage participants to share their insights and lessons learned from the session.</p>
<p>4.2 Real-Life Applications</p> <ul style="list-style-type: none">Discuss real-life examples where youth-led emergency response teams have made a difference in communities.Highlight the positive impact such teams can have on community resilience.	<p>Summarize key points, highlighting the importance of regular practice and preparedness.</p>
	<p>Relate the session to real-world applications, emphasizing the relevance of the learned skills.</p> <p>Encourage participants to brainstorm potential projects and initiatives that their Youth Fire Emergency Response Team could undertake within their community. Emphasize the transformative power of their collective efforts.</p>

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
	5. CLOSING EVALUATION	
5.1 Q&A Session <ul style="list-style-type: none"><li>• Allow participants to ask questions and seek clarifications regarding organizing a Youth Fire Emergency Response Team.	Ensure participants leave the session feeling confident about creating and implementing a home fire escape plan. Emphasize the role of proactive prevention and preparedness in ensuring the safety of themselves and their communities.	
5.2 Feedback and Reflection <ul style="list-style-type: none"><li>• Invite participants to share their feedback on the session, focusing on what inspired them the most.<li>• Encourage reflections on how they plan to initiate or contribute to a Youth Fire Emergency Response Team in their area.	Express gratitude for participants' active participation and encourage them to share the knowledge with their families and communities. End the session on a positive note, inspiring participants to take proactive steps in organizing a Youth Fire Emergency Response Team. Encourage them to act as ambassadors of fire safety within their communities, fostering a culture of preparedness and resilience.	Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer.

Understanding the Role of Youth Fire Emergency Response Team [2-1]



Importance of youth involvement in community safety.

Fire safety is a collective responsibility that extends beyond the boundaries of age. While every member of the community plays a crucial role, the involvement of young adults in promoting fire safety holds particular significance. Here's why youth engagement in community fire safety is indispensable:

1. Empowering Future Leaders:

Engaging youth in fire safety initiatives nurtures leadership qualities and a sense of responsibility from a young age. It prepares them to become future community leaders and advocates for safety.

2. Fresh Perspectives and Innovative Ideas:

Young adults often bring innovative and fresh perspectives to problem-solving. Their creativity can lead to the development of creative fire safety awareness campaigns and programs tailored to their peers.

3. Peer Influence and Awareness:

Youth are influential among their peers. When they actively participate in fire safety initiatives, they create a ripple effect, influencing their friends and family members to adopt safer practices and be more prepared for emergencies.

4. Increased Reach and Connectivity:

Young adults are often tech-savvy and well-connected through social media platforms. Utilizing their digital skills, they can amplify fire safety messages, reaching a wider audience and creating a more significant impact.

5. Building a Culture of Preparedness:

Involving youth fosters a culture of preparedness within communities. When they actively engage in fire drills, workshops, and awareness campaigns, it instills a sense of vigilance and a proactive attitude towards safety.

6. Enhancing Resilience and Community Cohesion:

Youth participation in fire safety activities strengthens community bonds. Working together towards a common goal builds resilience, fosters a sense of belonging, and creates a community that stands strong in the face of adversities.

7. Promoting Lifelong Safety Habits:

Educating young adults about fire safety instills lifelong habits. When they internalize these practices early on, they carry this knowledge into adulthood, ensuring a safer environment for themselves and future generations.

In essence, the involvement of young adults in community fire safety initiatives is not just about their active participation; it's about nurturing a generation that values safety, responsibility, and community welfare. By empowering the youth, we are not only securing the present but also paving the way for a safer and more resilient future.

Roles and responsibilities of team members during fire emergencies.

During fire emergencies, the roles and responsibilities of team members within a Youth Fire Emergency Response Team are crucial for ensuring an organized, efficient, and safe response. Here's an explanation of the key roles and their corresponding responsibilities:

1. Team Leader:

Responsibilities:

- Take charge of the overall emergency response efforts.
- Make strategic decisions and delegate tasks to team members.
- Ensure clear communication and coordination among team members.
- Liaise with professional emergency services and authorities if necessary.



2. Communication Officer:

Responsibilities:



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- Maintain communication within the team, ensuring everyone is informed about the situation and tasks.
- Use communication devices effectively, such as radios or mobile phones, to relay messages.
- Establish communication channels with external emergency services and
- update them about the team's actions and findings.

3. First Aid Responder:

Responsibilities:



- Provide immediate first aid to injured individuals, including basic wound care, CPR, and handling burns.
- Assess the severity of injuries and prioritize medical treatment based on the victims' conditions.
- Coordinate with medical professionals and ambulance services if advanced medical assistance is required.

4. Evacuation Coordinator:

Responsibilities:



- Organize and lead the evacuation process, ensuring all individuals are safely moved away from the danger zone.
- Establish evacuation routes and assembly points, guiding people to these safe locations.
- Account for all evacuated individuals, especially focusing on vulnerable populations like children, elderly, and people with disabilities.

5. Fire Suppression Team:

Responsibilities:



- Use firefighting equipment effectively and safely to contain small fires whenever possible.
- Focus on preventing the fire from spreading to other areas and keeping escape routes clear.
- Follow established protocols and techniques for safe fire suppression efforts.

6. Crowd Control and Support Team:

Responsibilities:



- Maintain order among evacuees and prevent panic or chaos.
- Provide emotional support to individuals who are distressed or anxious.

- Assist in managing crowds, especially during evacuations, ensuring a smooth flow of people toward safety.

7. Documentation and Reporting Officer:

Responsibilities:

- Document all actions taken during the emergency response, including medical treatments provided, fire suppression efforts, and evacuation procedures.
- Prepare incident reports detailing the team's response activities.
- Collect information relevant to the incident for post-emergency analysis and improvement of response strategies.



Each team member plays a vital role in the overall effectiveness of the Youth Fire Emergency Response Team. By understanding and fulfilling these roles and responsibilities, the team can contribute significantly to ensuring the safety and well-being of the community during fire emergencies.

Organizational Structure and Leadership Skills [2-2]

Organizational structure of the team, including roles such as team leader, communication officer, first aid responder, and evacuation coordinator.



Team Leader:

Responsibilities:

- Provide overall guidance and direction to the team members.
- Coordinate activities, training sessions, and emergency response efforts.

- Act as a liaison between the team and local authorities or community leaders.

Skills/Qualities:

- Strong leadership skills.
- Excellent communication and decision-making abilities.
- Knowledgeable about fire safety protocols and emergency procedures.

Communication Officer:

Responsibilities:

- Manage all internal and external communications for the team.
- Coordinate with local emergency services and other response teams.
- Disseminate information and updates to team members and the community.

Skills/Qualities:

- Proficiency in communication technologies and social media platforms.
- Ability to remain calm and composed during emergencies.
- Strong organizational and reporting skills.

First Aid Responder:

Responsibilities:

- Provide immediate medical assistance to individuals affected during emergencies.
- Administer basic first aid, CPR, and other life-saving techniques.
- Organize first aid training sessions for team members and community members.

Skills/Qualities:

- Certified in first aid and CPR.
- Quick decision-making in medical emergencies.
- Empathy and compassion toward those in distress.

Evacuation Coordinator:

Responsibilities:

- Develop and implement evacuation plans for different scenarios.
- Coordinate the safe evacuation of community members during emergencies.
- Work closely with local authorities to ensure smooth evacuation procedures.

Skills/Qualities:

- Knowledge of local geography and community infrastructure.
- Strong organizational skills to manage evacuation routes and shelters.
- Ability to make quick decisions in high-pressure situations.

The roles and responsibilities can be adapted based on the team's size, local requirements, and the specific needs of the community. Clear communication and collaboration between team members are crucial for effective emergency response.

Leadership qualities and effective communication within the team.

Effective leadership within a Youth Fire Emergency Response Team is pivotal for success. Here are some key qualities that leaders should embody:

Visionary: A leader should have a clear vision of the team's objectives and goals. They inspire others by painting a compelling picture of what success looks like.



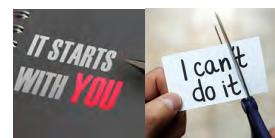
Decisiveness: Leaders must make timely decisions, especially in high-pressure situations. Decisiveness instills confidence in team members and ensures swift actions during emergencies.



Empathy: Understanding the emotions and concerns of team members is vital. A compassionate leader creates a supportive environment where individuals feel valued and heard.



Adaptability: Leaders should be flexible and able to adapt to changing circumstances. Being open to new ideas and strategies fosters innovation within the team.



Accountability: Leaders take responsibility for both successes and failures. They encourage a sense of accountability among team members, promoting a culture of ownership.

Facilitator's Note [1/10]
Discuss real-life examples of leaders who have demonstrated these qualities effectively.

Encourage participants to reflect on situations where they have experienced these traits in action, either as leaders or team members.

Effective Communication Within the Team

Active Listening: Team members should practice active listening, which involves fully concentrating,

understanding, responding, and remembering what is being said. It fosters mutual respect and understanding.

Clarity and Transparency: Messages should be clear and concise. Transparent communication builds trust within the team, as members feel they are informed and involved in decision-making processes.



Facilitator's Note [2/10]

Conduct interactive activities such as role-playing exercises or group discussions. Encourage participants to share their communication challenges and brainstorm effective solutions. Emphasize the importance of a respectful tone and non-verbal cues in communication.

Openness to Feedback: Encourage a culture where team members can provide feedback without fear. Constructive criticism helps in continuous improvement and strengthens the team's capabilities.

Encourage Questions: Leaders should create an environment where team members feel comfortable asking questions. Questions lead to clarity and prevent misunderstandings.

Positive Reinforcement: Acknowledge and appreciate the efforts of team members. Positive reinforcement boosts morale and motivates individuals to perform better.

Conflict Resolution: Equip team members with conflict resolution skills. Addressing conflicts promptly and constructively prevents misunderstandings from escalating.

Team building activities that focus on communication challenges



1. Mirror Exercise:

Objective: To enhance non-verbal communication and synchronization within the team.

Activity: Divide participants into pairs. One person becomes the "leader," and the other is the "follower." The follower mimics the leader's movements, gestures, and facial expressions. After a few minutes, switch roles. Discuss the importance of subtle non-verbal cues in effective communication.



2. Charades:

Objective: To improve non-verbal communication skills and understanding of gestures and body language.

Activity: Play a game of charades where participants act out words or phrases without speaking while others guess. This activity emphasizes the significance of gestures, facial expressions, and body language in conveying messages effectively.

3. Group Drawing:

Objective: To enhance communication and collaboration within the team.

Activity: Divide participants into groups and provide each group with a drawing task. However, only one team member can see the drawing, and they must describe it to the others using non-verbal cues and instructions. This activity emphasizes the importance of clear and precise communication without verbal explanations.



4. Human Knot:

Objective: To promote teamwork, problem-solving, and non-verbal communication.

Activity: Participants stand in a circle and extend their hands to grasp the hands of two different people across the circle. The challenge is to untangle the “human knot” without releasing hands. Participants must use non-verbal cues and collaborate effectively to solve the puzzle.



5. Emotion Cards:

Objective: To enhance empathy and understanding of non-verbal emotional expressions.

Activity: Provide participants with emotion cards displaying various facial expressions (happy, sad, angry, surprised, etc.). Participants take turns picking a card and expressing the emotion without using words. Others guess the emotion being portrayed, emphasizing the importance of facial expressions and body language in conveying feelings.



6. Trust Walk:

Objective: To develop trust, active listening, and non-verbal communication skills.

Activity: Blindfold one participant and pair them with a sighted partner. The sighted partner guides the blindfolded participant through a designated path, using only non-verbal cues and verbal instructions when necessary. This activity emphasizes trust and reliance on non-verbal signals.



Fire Safety Training and Skills Development [2-3]

Fire safety training programs for team members, including basic firefighting techniques and first aid skills for Youth Fire Emergency Response Team:

Facilitator's Note [3/10]

Encourage participants to reflect on their experiences after each activity. Discuss challenges faced and strategies used to overcome them. Emphasize the importance of non-verbal cues in effective communication and teamwork. These activities not only improve communication skills but also strengthen team bonding and cooperation.



1. Basic Firefighting Techniques:

1.1 Fire Classification and Behavior:

- Understanding different types of fires (Class A, B, C, D, and K).
- Learning how fires spread and behave under various conditions.

1.2 Fire Extinguisher Training:

- Identifying the right type of fire extinguisher for specific fire classes.
- Hands-on training on using fire extinguishers safely and effectively.

1.3 Fire Suppression Tactics:

- Practical exercises on controlling small fires using firefighting equipment.
- Techniques for proper fire containment and suppression.

1.4 Evacuation Procedures:

- Understanding the importance of swift and orderly evacuation during a fire emergency.
- Conducting drills on evacuating different types of buildings, including schools, homes, and community centers.

2. First Aid Skills:



2.1 Basic First Aid Training:

- CPR (Cardiopulmonary Resuscitation) techniques for adults, children, and infants.
- Dealing with minor burns, cuts, and bruises.
- Managing shock and stabilizing injured individuals.

2.2 Medical Emergency Response:

- Recognizing signs of common medical emergencies (heart attack, stroke, allergic reactions, etc.).
- Administering first aid while waiting for professional medical help to arrive.

2.3 Team-Based First Aid Scenarios:

- Simulating emergency scenarios where team members must assess the situation and provide appropriate first aid.
- Emphasizing teamwork and communication during medical emergencies.

3. Disaster Preparedness and Response:

3.1 Natural Disasters:

- Understanding different natural disasters (earthquakes, floods, etc.) and their potential impact



on fire safety.

- Creating emergency response plans tailored to specific disasters.

3.2 Search and Rescue Techniques:

- Training on safe and effective search and rescue operations, especially in confined spaces.
- Utilizing basic tools for search and rescue efforts.



4. Community Engagement and Public Education:

4.1 Conducting Fire Safety Workshops:

- Planning and organizing fire safety workshops for schools, community centers, and local businesses.
- Developing engaging and informative presentations to educate the community about fire safety.



4.2 Fire Safety Awareness Campaigns:

- Creating awareness campaigns through social media, posters, and community events.
- Involving team members in public outreach activities to spread fire safety messages.

Emphasize the importance of continuous skill development and regular training sessions.

Highlighting the significance of continuous skill development and regular training sessions is crucial in ensuring the effectiveness and readiness of any emergency response team. Here's how this point can be emphasized:

"Team, let's underscore the vital importance of ongoing skill development and consistent training sessions within our Youth Fire Emergency Response Team. Just like any other skill, our knowledge and expertise in firefighting and emergency response need to be honed continually. **Regular training** not only sharpens our abilities but also keeps us updated with the latest techniques and procedures."

Imagine our skills as a **tool**. The more we sharpen it, the more effective and reliable it becomes during critical situations. Fire emergencies are unpredictable, and the more prepared and skilled we are, the better equipped we will be to handle any challenge that comes our way.

So, let's commit ourselves to a culture of continuous learning. Let's eagerly participate in training sessions, absorb new knowledge, and practice our skills diligently. This dedication to improvement will not only enhance our individual capabilities but also elevate the effectiveness of our entire team.

Remember, our commitment to continuous skill development ensures that we are always at the top of our game, ready to face any emergency with confidence and competence. Let's embrace this ethos of lifelong learning and excellence in our roles as members of the Youth Fire Emergency Response Team."

Facilitator's Note [4/10]

Ensure that the training programs are conducted by certified professionals or experienced firefighters. Emphasize the importance of continuous learning and practice to enhance skills and readiness. Encourage team members to actively participate in hands-on training sessions and to share their knowledge with others in the community. Regular drills and exercises should be conducted to reinforce the acquired skills and maintain a high level of preparedness.

Community Engagement and Awareness [2-4]

Strategies for raising fire safety awareness within the community.



Fire safety awareness within a community is paramount to ensuring the well-being of its residents. Implementing effective strategies to disseminate crucial information can significantly reduce the risk of fire incidents. Here are some impactful ways to raise fire safety awareness within your community:

1. Educational Workshops and Training Sessions:

Community Workshops: Organize workshops covering basic fire safety measures, prevention techniques, and emergency response protocols. These workshops can be conducted in community centers, schools, or local libraries.

Hands-On Training: Offer hands-on training sessions on how to use fire extinguishers, evacuate safely, and administer basic first aid during fire emergencies.

2. Interactive Demonstrations:

Fire Drills: Conduct regular fire drills in schools, residential areas, and workplaces. These drills simulate real fire scenarios and educate participants on the importance of quick and efficient evacuation.

Fire Safety Fairs: Organize fairs where local fire departments and safety organizations can demonstrate firefighting equipment, conduct live fire extinguisher demos, and engage with the community.

3. Public Awareness Campaigns:

Social Media Campaigns: Utilize social media platforms to share informative posts, videos, and infographics about fire safety tips, prevention methods, and emergency contact numbers.

Community Bulletin Boards: Maintain bulletin boards in public spaces, displaying fire safety tips, escape routes, and emergency contact information.

Collaborative Projects: Partner with local schools, businesses, and community organizations to initiate joint awareness campaigns. This collaborative effort amplifies the message and reaches a broader audience.

4. Community Engagement Programs:

Neighborhood Watch: Establish neighborhood watch programs where residents actively participate in identifying and reporting fire hazards within their community.

Safety Committees: Form safety committees comprising volunteers who regularly inspect public spaces, homes, and local businesses for fire safety compliance.

5. Awareness Through Art and Culture:

Street Plays and Skits: Organize street plays or skits that depict fire safety scenarios, emphasizing preventive measures and proper response actions.

Art Contests: Host art contests in schools, encouraging students to create artwork that illustrates fire safety themes. Display the winning entries in community centers or local galleries.

6. Fire Safety Literature:

Pamphlets and Brochures: Create informative pamphlets and brochures containing essential fire safety tips and distribute them door-to-door or at community events.

Multilingual Materials: Ensure that fire safety materials are available in multiple languages, catering to the diverse population within the community.

7. Engaging Local Leaders and Influencers:

Public Endorsements: Seek endorsements from local leaders, celebrities, or influencers who can advocate for fire safety through public service announcements, blogs, or social media posts.



Community Talks: Invite fire safety experts and firefighters for community talks, where they can share firsthand experiences, answer questions, and provide practical advice.

By employing these strategies, communities can create a culture of awareness, preparedness, and vigilance, significantly reducing the likelihood of fire incidents and promoting the safety and well-being of their residents.

Methods for organizing fire safety workshops, drills, and awareness campaigns.

Organizing Fire Safety Workshops, Drills, and Awareness Campaigns:

Workshops:

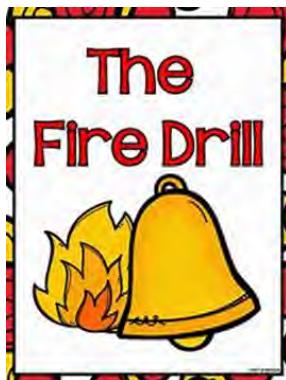
Interactive Sessions: Conduct hands-on workshops where participants learn to use fire extinguishers, understand different types of fires, and practice safe evacuation techniques.

Guest Speakers: Invite local firefighters, safety experts, or professionals to share their experiences and knowledge about fire safety.

Role-Playing Exercises: Organize role-playing activities to simulate fire emergency situations, teaching participants how to respond effectively.

Safety Demonstrations: Perform live demonstrations of fire safety equipment, showcasing their usage and effectiveness.

Drills:



Regular Fire Drills: Schedule regular fire drills in schools, communities, or workplaces to ensure everyone knows the evacuation procedures and assembly points.

Scenario-Based Drills: Create different fire scenarios and conduct drills to prepare participants for various situations, such as fires in different parts of a building or simultaneous emergencies.

Night Drills: Conduct fire drills during the evening to simulate emergencies in low-light conditions, emphasizing the importance of clear communication and familiarity with escape routes.

Debriefing Sessions: After each drill, hold debriefing sessions to discuss what went well, what could be improved, and address any concerns or questions participants may have.

Awareness Campaigns:



Social Media Campaigns: Utilize social media platforms to share informative posts, infographics, and videos about fire safety tips, preventive measures, and emergency response techniques.

Community Workshops: Organize workshops in community centers, libraries, or local halls, inviting residents to learn about fire safety practices and providing resources like brochures and pamphlets.

School Programs: Collaborate with schools to integrate fire safety education into the curriculum, conducting regular sessions on fire prevention, evacuation drills, and the importance of early detection through smoke alarms.

Partnerships with Local Businesses: Partner with local businesses to display fire safety posters, distribute informational materials, and conduct awareness sessions for employees and customers.

Creative Initiatives:

Poster Competitions: Organize poster-making competitions in schools or community centers, encouraging participants to illustrate fire safety themes. Display winning posters in public spaces to raise awareness.

Storytelling Sessions: Host storytelling events for children, featuring tales that emphasize the importance of fire safety, teamwork, and quick thinking during emergencies.

Community Events: Participate in fairs, festivals, or community gatherings, setting up booths with interactive displays, games, and quizzes related to fire safety. Distribute promotional materials to attendees.

Collaborations and Sponsorships:

Collaborate with Fire Departments: Work closely with local fire departments to coordinate joint awareness campaigns, leveraging their expertise and resources.

Sponsorships: Seek sponsorships from local businesses or organizations to fund awareness campaigns. Acknowledge sponsors through promotional materials and events, encouraging their active participation.

Remember, the key to effective fire safety workshops, drills, and awareness campaigns is engagement. Creating interactive and memorable experiences ensures that participants retain crucial information and are better prepared to handle fire emergencies.

Collaboration with Local Authorities [2-5]

How to collaborate with local fire stations, emergency services, and other relevant authorities.

Collaborating with local fire departments, emergency services, and relevant authorities is essential for the success and effectiveness of any community-based emergency response team. Here's how you can establish and maintain fruitful collaborations:

Facilitator's Note [5/10]

Encourage participants to approach local fire stations and emergency services to express their intention to collaborate. Stress the importance of clear communication and enthusiasm during the initial contact.

Facilitator's Note [6/10]

Stress the importance of mutual understanding and respect for each other's roles. Emphasize that collaboration is a partnership where both sides bring unique strengths to the table.

1. Establish Initial Contact:

2. Arrange a Meeting:

- Schedule a meeting with the respective authorities to discuss your team's objectives, scope of work, and areas of collaboration.
- Prepare a presentation highlighting the potential benefits of the collaboration and how it aligns with the local authorities' goals.

3. Clearly Define Roles and Responsibilities:

- Clearly define the roles and responsibilities of both parties. Outline what support the local authorities can provide and what the Youth Fire Emergency Response Team can contribute.

4. Establish Communication Channels:

- Set up regular communication channels between the Youth Fire Emergency Response Team and local

authorities. This can include email updates, phone calls, or scheduled meetings.

- Create a communication protocol to ensure efficient information exchange during emergencies.

5. Training and Workshops:

- Collaborate on training sessions and workshops. Local fire departments can provide valuable training on firefighting techniques, first aid, and emergency response protocols.

Facilitator's Note [7/10]

Encourage participants to actively participate in these training sessions to enhance their skills and knowledge.

6. Participate in Joint Drills:

- Coordinate and participate in joint emergency response drills. These exercises enhance teamwork, improve coordination, and help both parties understand each other's processes.
- Debrief after each drill to identify areas of improvement and celebrate successes.

7. Establish a Memorandum of Understanding (MoU) or Partnership Agreement:

- Draft a formal MoU or partnership agreement outlining the terms and conditions of collaboration, including the responsibilities of each party, resource sharing, and the duration of the partnership.

Facilitator's Note [8/10]

Stress the significance of legal documentation to ensure a clear understanding and commitment from both parties.

8. Regularly Evaluate and Update the Collaboration:

- Schedule periodic meetings to evaluate the collaboration's effectiveness. Discuss challenges faced and find solutions collaboratively.
- Be open to feedback and be willing to adapt the collaboration based on changing circumstances or needs.

Facilitator's Note [9/10]

Emphasize that collaboration is an ongoing effort that requires patience, communication, and mutual respect. Encourage participants to approach collaboration with enthusiasm and a willingness to learn from experienced professionals in the field. Stress that through effective collaboration, the Youth Fire Emergency Response Team can significantly enhance its capabilities and make a more significant impact on the community's safety.

9. Acknowledge and Appreciate:

- Express gratitude for the support received from local authorities. Publicly acknowledge their contributions during community events or awareness campaigns.
- Foster a positive and appreciative relationship to encourage long-term collaboration.

Team Building and Conflict Resolution^[2-6]

Share team-building exercises and strategies to strengthen camaraderie and teamwork.



1. Objective: Building Trust and Communication

Exercise: Trust Circle

Participants stand in a circle, and one person stands in the middle, blindfolded. The group gently guides the blindfolded person around the circle, reinforcing trust and communication.

Directions:

- **Form a Circle:** Participants stand in a circle, ensuring everyone is at an arm's length apart.
- **Blindfold:** Select one participant to be blindfolded and place them in the center.
- **Guidance:** The participants in the circle guide the blindfolded person around, ensuring they don't bump into others.
- **Reflection:** After the activity, discuss how communication and trust played a role. Emphasize the importance of clear instructions and active listening.



2. Objective: Encouraging Cooperation and Problem-Solving

Exercise: Challenge

Participants work together to solve puzzles and riddles within a time limit to "escape" from a designated room, encouraging teamwork and problem-solving skills.

Directions:

- **Set Up:** Create a scenario with puzzles, locks, and clues in a room or designated area.
- **Team Formation:** Divide participants into teams, ensuring diverse skill sets in each group.
- **Time Limit:** Set a specific time (e.g., 60 minutes) for the teams to solve the puzzles and escape the room.
- **Guidance:** Observe the teams and provide subtle hints if they struggle, promoting collaboration.
- **Debrief:** After the challenge, discuss the strategies used, challenges faced, and what they learned about teamwork and problem-solving.



3. Objective: Enhancing Creativity and Collaboration

Exercise: Group Art Project

Participants collaborate on a collective art project, fostering creativity, cooperation, and teamwork.

Directions:

- **Supplies:** Provide art materials like paints, brushes, canvases, or a mural wall.
- **Theme:** Set a theme (e.g., unity, community) for the artwork to ensure a cohesive outcome.
- **Collaboration:** Participants work together, contributing their ideas and skills to the project.
- **Reflection:** After completion, discuss the creative process, individual contributions, and the significance of collaboration in art.

4. Objective: Encouraging Problem-Solving and Decision-Making

Exercise: Survival Scenario

Participants work in teams to prioritize survival items in a hypothetical survival scenario, fostering decision-making and problem-solving skills.

Directions:

- **Scenario:** Describe a survival situation (e.g., stranded on an island, lost in a desert) with limited supplies.
- **Items:** Provide a list of items (e.g., water, shelter materials, first aid kit) the teams can prioritize based on importance.
- **Team Discussion:** Teams discuss and agree on the priority of items, considering their survival needs.
- **Presentation:** Each team presents their chosen items and explains their reasoning.
- **Discussion:** Facilitate a discussion on the different approaches and decision-making processes of each team.

5. Objective: Building Cooperation and Trust

Human Knot

Participants stand in a circle, and each person grabs the hands of two different people across the circle, creating a “knot.” The group must work together to untangle without releasing their hands, promoting cooperation and problem-solving.

Directions:

- **Formation:** Participants stand in a circle and extend their arms, grabbing the hands of two different people across from them.
- **Objective:** The group must untangle the knot without

releasing their hands.

- **Cooperation:** Participants communicate, strategize, and maneuver together to untangle the knot.
- **Reflection:** After successfully untangling, discuss the teamwork strategies used, emphasizing cooperation and trust-building.

Facilitator's Note [10/10]

Always debrief after each activity, discussing the lessons learned, teamwork dynamics, and how these skills can be applied in real-life scenarios. Adapt the activities based on the participants' preferences and the specific objectives of the team-building session.

Core Values

Discussing fire exit drills in the home can be relevant for honing leadership skills in young adults in several ways.

- Firstly, it instills a **sense of responsibility and preparedness**. Understanding the importance of having an evacuation plan demonstrates leadership qualities such as foresight, accountability, and the ability to make decisions under pressure.
- Secondly, practicing fire drills encourages **effective communication and teamwork**. Young adults can take charge, delegate tasks, and coordinate the evacuation process, enhancing their communication and organizational skills. These are fundamental aspects of leadership.
- Additionally, the **ability to remain calm and think critically** during emergencies is a crucial leadership trait. Engaging in fire exit drills helps young adults develop this skill, allowing them to assess situations, make quick decisions, and guide others to safety – qualities indispensable in leadership roles.
- Moreover, demonstrating leadership during fire drills involves **empathy and awareness**. Young adults can learn to consider the needs of others, ensuring that everyone, including children and elderly family members, can safely evacuate. This empathy and understanding of diverse needs are essential for effective leadership in any setting.
- Lastly, practicing fire exit drills at home can **boost young adults' confidence**. As they become proficient in handling emergency situations, their self-assurance grows. Confidence is key to leadership, as individuals are more likely to lead effectively when they believe in their abilities and decisions.

In summary, discussing and practicing fire exit drills in the home not only enhances practical safety skills but also nurtures essential leadership qualities such as responsibility, effective communication, critical thinking, empathy, and confidence in young adults. These skills are invaluable for their personal development and future leadership roles in various contexts.

Chapter 2

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

Youth Fire Emergency Response Team for Young Adults

SUBJECT TITLE

GOAL

- To empower young individuals with the knowledge, skills, and leadership qualities necessary to organize and effectively operate as fire emergency response team, ensuring safety and well-being of their communities in the face of fire emergencies.

2

SUBJECT OBJECTIVES

- Establish a dedicated and enthusiastic group of young individuals **interested** in fire safety and emergency response.
- Equip members with fundamental knowledge about fire safety, prevention, and initial response techniques.
- Define specific roles and responsibilities within the FireSquad Youth Heroes team to ensure organized and efficient emergency response.
- Cultivate leadership skills among members, enabling them to confidently lead and coordinate during fire emergencies.
- Establish a strong network with local fire stations and emergency services, fostering cooperation and mutual support during emergencies.

3

LESSON PROPER

- UNDERSTANDING THE ROLE OF YOUTH FIRE EMERGENCY RESPONSE TEAM**
 - Discuss the importance of youth involvement in community safety.
 - Explain the roles and responsibilities of team members during fire emergencies.



4

Roles and responsibilities of team members during fire emergencies.

- Team Leader:**
- Communication Officer:**
- First Aid Responder**
- Evacuation Coordinator**
- Fire Suppression Team**
- Crowd Control and Support Team:**

5

LESSON PROPER

- ORGANIZATION STRUCTURE AND LEADERSHIP**
 - Detail the organizational structure of the team, including roles such as team leader, communication officer, first aid responder, and evacuation coordinator.
 - Discuss leadership qualities and effective communication within the team.



264 MODULE 5 Basic Leadership Training through Fire Safety

Leadership qualities and effective communication within the team.

- Visionary
- Decisiveness
- Empathy (UNDERSTANDING THE EMOTIONS AND CONCERNS)
- Adaptability
- Accountability (BOTH SUCCESSES AND FAILURES)
- Confidence

7

TEAM BUILDING ACTIVITIES

- **Charades:**
- **Objective:** To improve non-verbal Communication skills and understanding of gestures and body language.
- **Activity:** Play a game of charades where participants act out words or phrases without speaking while others guess. This activity emphasizes the significance of gestures, facial expressions, and body language in conveying messages effectively.



9

TEAM BUILDING ACTIVITIES

- **Mirror Exercise:**
- **Objective:** To enhance non-verbal communication and synchronization within the team.
- **Activity:** Divide participants into pairs. One person becomes the "leader," and the other is the "follower." The follower mimics the leader's movements, gestures, and facial expressions. After a few minutes, switch roles. Discuss the importance of subtle non-verbal cues in effective communication.



8

TEAM BUILDING ACTIVITIES

- **Human Knot:**
- **Objective:** To promote teamwork, problem-solving, and non-verbal communication.
- **Activity:** Participants stand in a circle and extend their hands to grasp the hands of two different people across the circle. The challenge is to untangle the "human knot" without releasing hands. Participants must use non-verbal cues and collaborate effectively to solve the puzzle.



11

TEAM BUILDING ACTIVITIES

- **Group Drawing:**
- **Objective:** To enhance communication and collaboration within the team.
- **Activity:** Divide participants into groups and provide each group with a drawing task. However, only one team member can see the drawing, and they must describe it to the others using non-verbal cues and instructions. This activity emphasizes the importance of clear and precise communication without verbal explanations.



10

TEAM BUILDING ACTIVITIES

- **Emotion Cards:**
- **Objective:** To enhance empathy and understanding of non-verbal emotional expressions.
- **Activity:** Provide participants with emotion cards displaying various facial expressions (happy, sad, angry, surprised, etc.). Participants take turns picking a card and expressing the emotion without using words. Others guess the emotion being portrayed, emphasizing the importance of facial expressions and body language in conveying feelings.



12

TEAM BUILDING ACTIVITIES

- **Trust Walk:**
- **Objective:** To develop trust, active listening, and non-verbal communication skills.
- **Activity:** Blindfold one participant and pair them with a sighted partner. The sighted partner guides the blindfolded participant through a designated path, using only non-verbal cues and verbal instructions when necessary. This activity emphasizes trust and reliance on non-verbal signals.



13

LESSON PROPER

- FIRE SAFETY TRAINING AND SKILLS DEVELOPMENT
 - Outline the necessary fire safety training programs for team members, including basic firefighting techniques and first aid skills.
 - Emphasize the importance of continuous skill development and regular training sessions.

14

Necessary fire safety training programs for team members, including basic firefighting techniques and first aid skills

- Basic Firefighting Techniques:
- First Aid Skills:
- Medical Emergency Response:
- Team-Based First Aid Scenarios:
- Disaster Preparedness and Response:
- Search and Rescue Techniques:
- Community Engagement and Public Education:
- Fire Safety Awareness Campaigns:

15

LESSON PROPER

• COMMUNITY ENGAGEMENT AND AWARENESS

- Discuss strategies for raising fire safety awareness within the community.
- Explore methods for organizing fire safety workshops, drills, and awareness campaigns.



Strategies for raising fire safety awareness within the community.

- Community Workshops
- Hands-On Training
- Fire Drills
- Fire Safety Fairs
- Social Media Campaigns
- Street Plays and Skits
- Art Contests

17

LESSON PROPER

• TEAM COLLABORATION WITH LOCAL AUTHORITIES

- Explain how to collaborate with local fire stations, emergency services, and other relevant authorities.

18

How to collaborate with local fire stations, emergency services, and other relevant authorities.

- Establish Initial Contact:
- Arrange a Meeting:
- Clearly Define Roles and Responsibilities:
- Establish Communication Channels:
- Training and Workshops:
- Participate in Joint Drills:
- Establish a Memorandum of Understanding (MoU) or Partnership Agreement:
- Regularly Evaluate and Update the Collaboration:

19

LESSON PROPER

• TEAM BUILDING AND CONFLICT RESOLUTION

- Explain how to collaborate with local fire stations, emergency services, and other relevant authorities.
- (IF THEY DECIDE TO PURSUE ESTABLISHING A NON-GOVERNMENT ORGANIZATION/VOLUNTEER GROUP)

20

Exercise: Trust Circle

- Objective: Building Trust and Communication
- Participants stand in a circle, and one person stands in the middle, blindfolded. The group gently guides the blindfolded person around the circle, reinforcing trust and communication.
- Form a Circle: Participants stand in a circle, ensuring everyone is at an arm's length apart.
- Blindfold: Select one participant to be blindfolded and place them in the center.
- Guidance: The participants in the circle guide the blindfolded person around, ensuring they don't bump into others.
- Reflection: After the activity, discuss how communication and trust played a role. Emphasize the importance of clear instructions and active listening.



21

Exercise: Challenge



- Objective: Encouraging Cooperation and Problem-Solving

- Participants work together to solve puzzles and riddles within a time limit to 'escape' from a designated room, encouraging teamwork and problem-solving skills.
- Set Up: Create a scenario with puzzles, locks, and clues in a room or designated area.
- Team Formation: Divide participants into teams, ensuring diverse skill sets in each group.
- Time Limit: Set a specific time (e.g., 60 minutes) for the teams to solve the puzzles and escape the room.
- Guidance: Observe the teams and provide subtle hints if they struggle, promoting collaboration.
- Debrief: After the challenge, discuss the strategies used, challenges faced, and what they learned about teamwork and problem-solving.

22

266 MODULE 5 Basic Leadership Training through Fire Safety

Exercise: Group Art Project

- **Objective:** *Encouraging Problem-Solving and Decision-Making*
- *Participants work in teams to prioritize survival items in a hypothetical survival scenario, fostering decision-making and problem-solving skills.*
- *Scenario: Describe a survival situation (e.g., stranded on an island, lost in a desert) and list supplies.*
- *Items: Provide a list of items (e.g., water, shelter materials, first aid kit) the teams can prioritize based on importance.*
- *Team Discussion: Teams discuss and agree on the priority of items, considering their survival needs..*
- *Presentation: Each team presents their chosen items and explains their reasoning*
- *Discussion: Facilitate a discussion on the different approaches and decision-making processes of each team.*

23

CORE VALUES

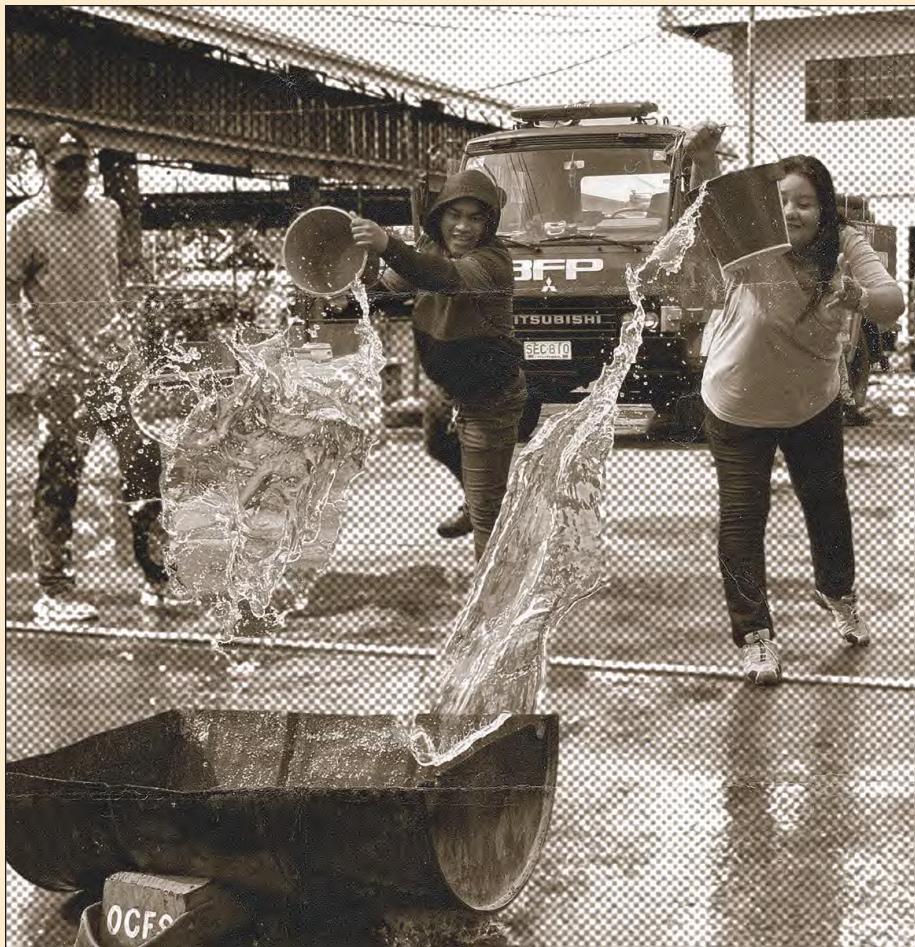
- *sense of responsibility and preparedness*
- *effective communication and teamwork*
- *ability to remain calm and think critically*
- *empathy and awareness*
- *boost young adults' confidence*

24

Chapter 3

Basic Leadership Training through Fire Safety

BUCKET BRIGADE: Water Warriors Chain



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 3...

Goal

Empower young adults with an effective and immediate method for containing and extinguishing small fires in order for them to contribute to community safety, protect lives and property, and foster a sense of responsibility and teamwork in times of crisis.

Objectives

By the end of the session, participants should be able to:

1. Understand the historical significance and basics of the Water Bucket Brigade
2. Practice working as a team to pass buckets swiftly and maintain a continuous flow of water
3. Comprehend the types of fires that can be controlled using the Water Bucket Brigade technique (small fires, grass fires, etc.)
4. Understand the role of individuals in community firefighting efforts.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Others
 - i. Buckets
 - ii. Water Sources
 - iii. Measuring Stick
 - iv. Whistle
 - v. Safety Gear (e.g. gloves, eye protection)
 - vi. Communication Tools
 - vii. Fire Extinguisher (for demonstration purposes)

Total Time of Delivery:

25 to 30 Minutes

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Cups or Mugs
 - ii. Imaginary Props
 - iii. Any useable means of making an example

Cheat Sheet

Subject Overview

Purpose: To equip individuals with a basic and effective firefighting technique. This historical method, although simple, is invaluable in controlling small fires before they escalate. The activity fosters a sense of community responsibility and promotes proactive participation in fire safety efforts.

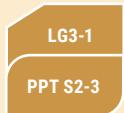
General Guidance: Emphasize the importance of safety. Participants should wear appropriate clothing and understand the limitations of the Water Bucket Brigade. Stress the significance of coordination and teamwork. The brigade is only effective when participants work together seamlessly. Like any skill, mastering the Water Bucket Brigade requires practice. Encourage participants to persevere and refine techniques.

Things to Consider: If practicing outdoors, ensure the water usage is responsible and does not harm the environment. Consider the physical abilities of the participants and provide assistance if needed. Be aware of cultural contexts, especially in diverse communities, and adapt the teaching approach accordingly.

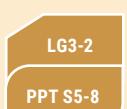
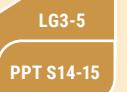
Subject Outline

Audio/ Visual Aids	Outline	Notes
 PPT COVER	1. PREPARATORY 1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged. 1.2 Provide an overview of the session and capture participants' interest.	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on BUCKET BRIGADE: Water Warriors Chain. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
		Briefly introduce the topic: "Today, we are delving into the critical topic of BUCKET BRIGADE: Water Warriors Chain. Today, we will delve into an essential firefighting technique: the water bucket relay. Get ready for an engaging and informative session!"

Cont...1

Audio/ Visual Aids	Outline	Notes
 LG3-1 PPT S2-3	1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: " Our objective is to equip you with the knowledge and skills needed to conduct a water bucket relay efficiently, ensuring a swift response during firefighting situations. We aim to empower you with practical knowledge that you can apply in real-life situations."
2. MOTIVATION		
	2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts.	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!"
	2.2 Foster a sense of camaraderie and ease participants into the session	Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion.
		Conclude the preparatory phase with a motivating statement: " Ladies and gentlemen, today we're diving into the heart of teamwork, coordination, and the power of collective effort.
	2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Just like how every drop of water matters in a vast ocean, each one of you plays a crucial role in our discussion about the water bucket relay. Together, we will explore not just the technique but the spirit of unity that defines this classic firefighting method. Get ready to be inspired, learn, and discover the extraordinary impact simple teamwork can make. Let's make waves!" " With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
 LG3-1 PPT S4	3. LESSON PROPER	Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.
 LG3-2 PPT S5-8	3.1 Introduction of Water Bucket Relay <ul style="list-style-type: none">• Discuss the historical significance of water bucket brigades in firefighting. Explain how fires spread and escalate• Explain how water bucket brigades remain a crucial firefighting method, especially in areas with limited resources.	Encourage active participation and questions throughout the session.
 LG3-3 PPT S9-10	3.2 Basics of Water Bucket Relay <ul style="list-style-type: none">• Detail the essential equipment, including buckets, water source, and a designated dumping area.• Provide instructions on setting up the brigade area for optimal efficiency.• Explain proper techniques for carrying and passing buckets without spillage.• Emphasize the importance of teamwork, communication, and synchronization among brigade members.	
 LG3-4 PPT S11-13	3.3 Safety Protocols <ul style="list-style-type: none">• Demonstrate safe lifting and carrying methods to prevent injuries.• Discuss general fire safety guidelines and how they apply specifically to water bucket brigades.	
 LG3-5 PPT S14-15	3.4 Practice Application and Simulation <ul style="list-style-type: none">• Organize a practical session where participants can actively participate in a water bucket brigade simulation.• Present various fire scenarios and guide participants in strategizing their water bucket brigade response for each scenario. 3.5 Importance of Community Involvement <ul style="list-style-type: none">• Highlight the importance of training entire communities in this technique to enhance collective firefighting capabilities.	

Cont...2

Audio/ Visual Aids	Outline	Notes
4. GENERALIZATION		
	<p>4.1 Recapitulation of Key Points:</p> <ul style="list-style-type: none">Summarize key points discussed during the session, emphasizing the importance of water bucket brigades	Encourage participants to share their insights and lessons learned from the session.
4.2 Empowering Communities:		
	<ul style="list-style-type: none">Encourage participants to take the knowledge gained back to their communities and actively participate in or initiate water bucket relay training sessions.Highlight success stories to underscore the importance of preparedness and quick thinking.	Summarize key points, highlighting the importance of regular practice and preparedness.
4.3 Relate to everyday life:		
	<ul style="list-style-type: none">"Remember, these skills are not just theoretical; they can save lives in real emergencies."	Relate the session to real-world applications, emphasizing the relevance of the learned skills.
5. CLOSING EVALUATION		
	<p>5.1 Q&A Section</p> <ul style="list-style-type: none">Allow participants to ask questions and seek clarifications about water bucket relay.	Ensure that the session is interactive and engaging.
5.2 Feedback and commitment		
	<ul style="list-style-type: none">Invite participants to share their feedback on the session, focusing on what they've learned and how they plan to implement it.Encourage participants to commit to practicing their home fire escape plans and to share this knowledge with their families and friends.	Encourage active participation, questions, and discussions to enhance participants' understanding and enthusiasm for water bucket brigades as a valuable firefighting tool

Historical Significance of Water Bucket Brigades in Firefighting



Water bucket brigades have a rich historical significance in firefighting, dating back centuries. Before the advent of modern firefighting equipment, these brigades were the primary method used by communities to combat fires. Understanding this historical context provides valuable insights into the evolution of firefighting techniques and the spirit of community resilience. Here's a closer look at their significance:

1. Early Firefighting Technique:

Water bucket brigades were one of the earliest firefighting methods used globally. In ancient civilizations and medieval times, communities organized citizens to form these brigades, creating a chain of people passing buckets of water to douse flames.

The simplicity of this method allowed it to be quickly implemented, making it a vital tool for tackling fires in the absence of advanced equipment.



2. Community Collaboration:

Water bucket brigades emphasized the importance of community collaboration. Neighbors, often organized by local leaders or authorities, worked together selflessly during emergencies.

The brigades instilled a sense of civic duty and unity, fostering a collective responsibility toward fire safety within a community.

3. Preservation of Cultural Heritage:

In many cultures, the tradition of water bucket brigades is

a testament to the preservation of cultural heritage. Stories and practices associated with these brigades are passed down through generations, reminding people of their shared history and resilience in the face of adversity.

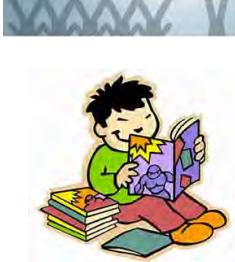


4. Transition to Modern Firefighting:

The concept of coordinated efforts, learned through water bucket brigades, laid the foundation for modern firefighting techniques. As technology advanced, communities began to adopt more sophisticated equipment, yet the spirit of teamwork and collaboration remained integral.

5. Symbol of Community Strength:

Water bucket brigades serve as a symbol of the strength derived from unity. They represent the idea that when people come together, they can overcome even the most formidable challenges.



6. Educational Value:

Studying the historical use of water bucket brigades provides valuable insights for firefighters and emergency responders today. Understanding the challenges faced by past generations enhances their appreciation for modern firefighting methods and encourages continuous improvement in fire safety practices.

7. Civic Responsibility:

Reflecting on the historical significance of water bucket brigades reinforces the importance of civic responsibility. It reminds communities of their role in fire prevention and the need for ongoing education and preparedness.

Facilitator's Note [1/5]

Encourage participants to consider how these historical lessons can inform modern approaches to fire safety and emergency response.

How water bucket brigades remain a crucial firefighting method, especially in areas with limited resources.

Water bucket brigades remain a crucial firefighting method, especially in areas with limited resources, due to their simplicity, effectiveness, and accessibility. In situations where advanced firefighting equipment may be scarce or unavailable, water bucket brigades offer a practical and immediate solution to control and extinguish fires. Here's how they remain essential:

1. Simplicity and Accessibility:

- **Low Cost:** Water buckets are inexpensive and widely available, making them accessible even in remote or economically challenged areas.
- **Ease of Use:** Water bucket brigades require minimal training. Almost anyone can participate, allowing communities to mobilize quickly during a fire emergency.



2. Rapid Response:

- **Immediate Action:** Water buckets are always ready for use. In the event of a fire outbreak, people can swiftly form a brigade and start dousing the flames, minimizing the fire's spread.
- **Quicker than Waiting:** Waiting for professional firefighters with advanced equipment can lead to significant property damage and loss. Water bucket brigades provide an immediate response, reducing the impact of the fire.

3. Community Engagement:

- **Community Involvement:** Involving local residents in firefighting fosters a sense of responsibility and ownership toward their safety and property. It strengthens community bonds and encourages collective action.
- **Empowerment:** Training community members in the use of water bucket brigades empowers them to protect their homes and neighbors, even before professional help arrives.

4. Adaptability to Terrain:

- **Navigating Difficult Terrain:** In areas with challenging landscapes where large firefighting vehicles cannot reach, individuals with water buckets can access narrow pathways, hills, or densely populated areas to contain the fire effectively.
- **Reaching Remote Locations:** Water bucket brigades are invaluable in remote villages, forested areas, and informal settlements where fire incidents can quickly escalate due to limited access to emergency services.

5. Conservation of Resources:

- **Water Conservation:** During water scarcity, water bucket brigades allow controlled use of water resources. Participants are trained to use water judiciously, ensuring it is targeted at the base of the fire.
- **Preserving Limited Resources:** In regions where water is a precious commodity, using buckets instead of hoses connected to water sources ensures the conservation of this vital resource.

In conclusion, water bucket brigades exemplify the power of community-driven action in the face of emergencies. Their simplicity, immediate availability, and adaptability make them an indispensable firefighting method, especially in areas where resources are scarce. By embracing this traditional yet effective approach, communities can significantly enhance their resilience against the devastating impact of fires.

Basics of Water Bucket Brigade [3-2]



Facilitator's Note [2/5]

Having the right equipment ensures the smooth flow of the water bucket relay activity. Sturdy and comfortable buckets are essential for participants to carry and pour water effectively. Access to a nearby water source is crucial; it ensures a constant supply of water, allowing the activity to continue without interruptions. A designated dumping area with measuring markers adds a competitive element, making the relay more engaging for participants. Always ensure safety by placing the buckets and water dumping area on a flat, stable surface to prevent accidents during the activity.

Essential equipment, including buckets, water source, and a designated dumping area.

Buckets:

- **Sturdy and Durable:** Use buckets made of strong, durable materials like plastic or metal. Reinforced plastic buckets are common for this activity due to their lightweight yet robust nature.
- **Sufficient Capacity:** Ensure the buckets have a sufficient capacity to hold an adequate amount of water. A typical bucket size ranges from 5 to 10 gallons.
- **Comfortable Handles:** Choose buckets with ergonomic handles, allowing participants to grip them comfortably, especially during quick movements.

Water Source:

- **Hose or Tap:** Access to a nearby water source such as a hose or tap is essential. This source should provide a steady and reliable flow of water to fill the buckets quickly.
- **Water Containers:** In case a direct water source is unavailable, large containers or barrels filled beforehand can serve as the water source.
- **Designated Dumping Area:**
- **Large Containers or Pools:** Set up designated dumping areas, which can be large containers or inflatable pools. These areas collect the water emptied from the buckets, allowing for easy measurement of the transferred volume.
- **Measuring Markers:** Place markers inside the dumping area to indicate specific levels. This helps measure the amount of water transferred accurately, making the activity more competitive and engaging.

Instructions on setting up the brigade area for optimal efficiency.



Setting up the brigade area for a water bucket relay requires careful planning and organization to ensure optimal efficiency and smooth execution of the activity. Here are the instructions to set up the brigade area:

Clear Space: Choose a spacious and flat area free from obstacles. This can be indoors or outdoors, but ensure there is enough room for participants to move around comfortably.

Mark Start and End Points: Clearly mark the starting and ending points of the relay. You can use cones, chalk, or ropes to indicate these points. Make sure everyone understands where the relay begins and ends.

Arrange Buckets: Place large buckets filled with water at the starting point and ending point. These buckets represent the water source and the destination where the water needs to be transferred.

Distance Between Buckets: The distance between the starting and ending buckets should be reasonable but challenging enough to make the relay interesting. It can vary based on the participants' age and fitness level, but typically, it should be around 20-30 meters.

Equal Spacing for Participants: If multiple teams are participating, ensure that there is enough space between each team to avoid interference or collisions during the relay.



Supply of Water and Buckets: Have an additional water source and buckets ready nearby in case a team needs a refill or if a bucket accidentally spills. This ensures a continuous flow of the relay without significant interruptions.

Safety Measures: Brief participants about safety measures, such as running carefully to prevent slipping and using both hands to carry the buckets. Ensure that the surface is not slippery to avoid accidents.

Designate Refill Station: If the relay involves refilling the buckets from a water source, designate a specific refill station. Clearly mark it and have personnel or volunteers stationed there to assist with refills.



Volunteer Support: Have volunteers or facilitators positioned along the relay route to supervise, guide participants, and provide assistance if needed.

Clear Instructions: Before starting the relay, provide

clear instructions to all participants. Explain the rules, demonstrate the correct way to carry and transfer the water, and emphasize the importance of teamwork and coordination.

Timers and Trackers: If it's a competitive relay, have timers or trackers at the starting and ending points to record the time taken by each team. This adds an element of competition and motivation for the participants.

By following these instructions, you can set up an efficient and engaging water bucket relay, ensuring that participants have a positive experience while learning the importance of teamwork and coordination.

Proper techniques for carrying and passing buckets without spillage.

When it comes to participating in a water bucket relay, proper techniques for carrying and passing buckets without spillage are crucial. Here's how you can explain it:

Proper Techniques for Carrying and Passing Buckets in a Water Bucket Relay:



Firm Grip: When carrying a bucket, ensure a firm grip on the handle with both hands. Hold the bucket close to your body to maintain balance.

Steady Movements: Walk steadily and avoid sudden movements. Quick, jerky actions can lead to spillage.



Avoid Overfilling: Do not fill the bucket to the brim. Leaving some space at the top prevents water from splashing out while walking or passing the bucket.

Communicate: Effective communication is key. Use verbal cues or predetermined signals to indicate when you are ready to pass the bucket. The passer should confirm their readiness before you release the bucket.

Stable Passing: When passing the bucket, pass it low and steadily. The receiver should be ready with their hands low, forming a stable base to receive the bucket. Avoid tossing or throwing the bucket, as it can lead to spillage.

Maintain Eye Contact: The person passing the bucket should maintain eye contact with the receiver. This non-verbal communication ensures mutual understanding about when to release and receive the bucket.

Teamwork: Work as a team. Coordinate with your teammates, especially during turns or corners. Slow down slightly when turning to prevent water from sloshing out.



Practice: Practice the passing technique before the actual relay. Familiarity with your teammates' movements and communication style enhances efficiency.

Maintain Positivity: Stay positive and focused. A positive mindset enhances coordination and reduces the likelihood of accidents.

Importance of teamwork, communication, and synchronization among brigade members.

During our discussion about water bucket relays, it's crucial to emphasize the vital role of teamwork, communication, and synchronization among brigade members. In firefighting, these elements are not just essential; they are the backbone of successful operations. Here are a few points to highlight:

Facilitator's Note [3/5]

Proper techniques for carrying and passing buckets not only prevent spillage but also ensure the smooth flow of the relay. Emphasize the importance of teamwork, communication, and practice. Encourage participants to support and guide each other, fostering a sense of camaraderie within the team. Remind participants that these techniques are applicable not only in the relay but also in real-life situations where coordination is essential.



Teamwork: Stress the significance of working as a unified team. In a water bucket brigade, each member's contribution, no matter how small, is integral to the overall effort.

Discuss how teamwork fosters a sense of trust and reliance among team members, ensuring that everyone can count on each other in high-pressure situations.

Communication: Effective communication is key to any successful operation. In a water bucket relay, clear instructions and prompt responses are crucial.

Emphasize the importance of active listening. Team members should listen attentively to instructions and be responsive to any changes or signals from their teammates.

Synchronization: Highlight the need for synchronization in movements. During a water bucket relay, members must move in harmony, ensuring a smooth and continuous flow of water.

Discuss how synchronization minimizes wastage of time and effort. When everyone is in sync, the brigade can achieve more in less time.

Adaptability and Flexibility: Stress the importance of being adaptable to changing circumstances. Sometimes,

firefighting situations can be unpredictable, requiring quick adjustments in strategies.

Encourage participants to be open to new ideas and to adapt their approaches based on the evolving needs of the situation.

Leadership and Support: Discuss the role of a leader within the brigade. A strong leader provides direction, motivates the team, and ensures that everyone is on the same page.

Emphasize the significance of support within the team. Encourage team members to assist and encourage each other, creating a positive and empowering environment.

By highlighting these aspects, participants will grasp the essence of effective teamwork and understand how it directly impacts the success of a water bucket relay and, by extension, real-life firefighting scenarios. Encourage discussions and scenarios where these principles can be applied, fostering a deeper understanding among participants.



Safety Protocols [3-3]

Safe lifting and carrying methods to prevent injuries.

Objective: To teach participants proper techniques for lifting and carrying objects to prevent injuries.

1. Demonstration Steps:

1. Warm-Up Exercises:

Begin with a quick warm-up to prepare the body for physical activity. Include stretches focusing on the back, legs, and arms.



2. Proper Body Mechanics:

Bend Your Knees: Always bend your knees and keep your back straight while lifting the water bucket. Avoid bending from your waist, as it can strain your back.

Get a Firm Grip: Hold the bucket with both hands, gripping the handles tightly to maintain control.

Engage Your Core: Tighten your core muscles to support your back while lifting the bucket.

Use Your Legs: Lift with your leg muscles by pushing up with your thighs, not your back muscles.

2. Carrying the Water Bucket:

Keep the Bucket Close: Carry the bucket close to your body, which reduces strain on your arms and back.

- **Avoid Twisting:** When turning, pivot your entire body instead of twisting your back while carrying the bucket.
- **Balance the Load:** If there are multiple buckets, balance the weight evenly between both hands.



3. Practice Session:

Allow participants to practice lifting and carrying lightweight objects using the demonstrated techniques.

Provide individual feedback, correcting posture and technique as needed.

General Fire Safety Guidelines and Their Application to Water Bucket Brigades

1. Understanding Fire Behavior:



General Fire Safety: Understanding how fires start and spread is crucial. Emphasize the importance of early detection and quick response.

Application to Water Bucket Brigades: Knowing the behavior of fire helps in strategizing the use of water bucket brigades. Focus efforts on containing smaller fires before they escalate.

2. Safety Gear and Equipment:



General Fire Safety: Proper safety gear, including fire-resistant clothing and helmets, is essential for firefighters' protection.

Application to Water Bucket Brigades: While not as intensive as professional firefighting, participants in water bucket brigades should wear appropriate clothing and gloves to prevent injuries and burns from hot surfaces.

3. Communication and Coordination:

General Fire Safety: Clear communication and coordination are vital during a fire incident, ensuring everyone is aware of their roles and responsibilities.

Application to Water Bucket Brigades: Team members must communicate effectively to pass the buckets efficiently. Clear signals and coordination help maintain a continuous flow of water.

4. Proper Bucket Handling:

General Fire Safety: Firefighters are trained to handle equipment properly to avoid accidents and injuries.

Application to Water Bucket Brigades: Participants should be instructed on how to lift and pass buckets safely. Proper techniques prevent spillage and injuries.

5. Maintaining a Safe Distance:



General Fire Safety: Maintaining a safe distance from the fire is crucial to avoid smoke inhalation and burns.

Application to Water Bucket Brigades: Participants should stand at a safe distance from the fire while passing buckets. This distance ensures their safety while effectively contributing to extinguishing the fire.

6. Avoiding Panic and Maintaining Calm:

General Fire Safety: Panic can lead to chaos and hamper the firefighting efforts. Staying calm under pressure is essential.

Application to Water Bucket Brigades: Participants should remain composed and focused on the task. Panicking can disrupt the flow of the water bucket brigade, making it less effective.



7. Knowing When to Retreat:

General Fire Safety: Firefighters are trained to recognize signs of an escalating fire and when to retreat to safety.

Application to Water Bucket Brigades: Participants should be aware of the fire's intensity. If the fire becomes uncontrollable, they must retreat to a safe location and alert authorities.

Practical Applications and Simulation [3-4]

Activity 1: Water Bucket Relay Simulation

Objective: Simulate a real-life scenario of a water bucket relay, allowing participants to practice the skills needed for effective firefighting.

Instructions:

- **Set Up:** Arrange participants in teams, ensuring each team has a bucket filled with water and another empty bucket placed at a distance.

- **Rules Explanation:** Explain the rules of the relay: participants must fill a cup with water from the filled bucket, run to the empty bucket, and pour the water into it. They then run back and hand the cup to the next team member. Emphasize the importance of speed, precision, and teamwork.
- **Timed Relay:** Time each team as they complete the relay. Encourage friendly competition and record the timings.

Debriefing:

- Discuss the strategies used by teams to improve their relay timings.
- Emphasize the significance of communication, coordination, and quick decision-making during the activity.
- Relate the experience to real-life firefighting scenarios, highlighting the importance of swift and efficient water bucket relays in emergencies.

Activity 2: Fire Safety Scenarios

Objective: Engage participants in realistic fire safety scenarios incorporating water bucket relay techniques.

Instructions:

- **Scenario Setup:** Create different fire safety scenarios, such as a simulated building fire or a forest fire. Place markers representing fire zones, and position buckets of water strategically around these zones.
- **Role Assignment:** Assign roles to participants, including firefighters, bucket carriers, and water pourers. Each team must strategize and perform water bucket relays to “extinguish” the simulated fires.
- **Simulation:** Start the scenarios. Participants must work together, employing water bucket relays to cover the designated fire zones and successfully “put out” the fires.

Evaluation:

- Evaluate each team’s performance based on their efficiency, communication, and ability to cover fire zones effectively.
- Discuss the challenges faced and the strategies employed during the simulation.

Activity 3: Water Bucket Relay Challenge

Objective: Encourage friendly competition and teamwork through a challenging water bucket relay competition.

Instructions:

- **Challenge Setup:** Create an obstacle course with designated fire zones and hurdles. Position buckets of water at various points along the course.
- **Team Formation:** Form teams and assign each team a starting point and a route through the obstacle course.
- **Challenge Rules:** Teams must navigate the obstacle course, perform water bucket relays at designated spots, and cover all fire zones in the shortest time possible.
- **Competition:** Start the challenge, timing each team as they complete the course. The team with the fastest time and the most effectively covered fire zones wins.

Awards and Discussion:

Award the winning team and discuss the strategies that led to their success.

Highlight the importance of adaptability and quick thinking in firefighting situations.

Importance of Community Involvement [3-5]

Facilitator's Note [4/5]

These activities provide hands-on experience and simulate real firefighting scenarios, allowing participants to apply water bucket relay techniques in a controlled environment. Encourage participants to strategize, communicate effectively, and work as a team to achieve the best results. Emphasize the importance of these skills in real-life emergency situations.

Highlight the importance of training entire communities in this technique to enhance collective firefighting capabilities.

In the realm of firefighting, individual skills are valuable, but the true strength lies in the collective capabilities of a community. Water bucket relays, a traditional yet effective firefighting technique, underscore the importance of cooperation, coordination, and swift action during emergencies. When an entire community is trained in this technique, it significantly enhances their firefighting capabilities. Here's why this collective training is crucial:

1. Rapid Response: Training communities in water bucket relays ensures that a significant number of people are familiar with the technique. In the event of a fire outbreak, having numerous individuals skilled in this method ensures a swift and immediate response.

2. Efficient Resource Utilization: Water bucket relays utilize readily available resources – buckets and water. By training communities, you optimize the use of these basic

resources. This technique doesn't rely on complex tools or technology, making it accessible and applicable in various settings.

3. Scalability: Communities come in diverse sizes. Whether it's a small village or a bustling urban neighborhood, the scalability of water bucket relays is unparalleled. Communities can adapt the technique to match their specific needs, making it universally applicable.

4. Fostering Unity: Training sessions bring community members together. Learning and practicing together foster a sense of unity and shared responsibility. This communal spirit is essential in effectively combatting fires, where coordinated efforts are vital.

5. Empowering Vulnerable Populations: Water bucket relays are inclusive and can be adapted for people of all ages and physical abilities. By training everyone, including the elderly and children, communities empower their vulnerable members, ensuring that no one is left behind during emergencies.

6. Strengthening Disaster Resilience: Communities equipped with firefighting skills, even basic ones like water bucket relays, become more resilient in the face of disasters. Quick, organized responses can prevent small fires from escalating, averting potential disasters and minimizing damage.

7. Enhancing Public Safety Education: Training communities in water bucket relays becomes an integral part of public safety education. It not only imparts a specific skill but also raises awareness about the importance of preparation, vigilance, and collective action.

Discuss ways to encourage more community members, especially young adults, to actively participate in water bucket brigades.

Encouraging active participation in water bucket brigades, especially among young adults, is essential for building a strong community preparedness against fires. Here are some effective strategies to engage and motivate community members:

1. Raise Awareness:

- **Informative Workshops:** Organize workshops and

Facilitator's Note [5/5]

When discussing the importance of training entire communities in water bucket relays, emphasize the broader impact of collective training on community safety and resilience. Encourage participants to consider organizing community training sessions and engaging local authorities to ensure that this vital skill becomes a shared asset, enhancing the safety net of the entire community.

awareness programs to educate community members, especially young adults, about the importance of water bucket brigades in firefighting.

- **Real-Life Examples:** Share real-life examples or success stories where water bucket brigades played a crucial role in controlling fires and saving lives.

2. Community Engagement:

- **Interactive Demonstrations:** Conduct live demonstrations of water bucket brigade techniques during community events or festivals to showcase its effectiveness.
- **Practice Sessions:** Organize regular practice sessions where community members, particularly young adults, can actively participate and improve their skills.

3. Youth Involvement:

- **Youth Leadership:** Empower young adults by assigning them leadership roles within the water bucket brigade teams. This responsibility can boost their confidence and commitment.
- **Youth-Friendly Events:** Create events or competitions related to water bucket brigades specifically designed for young adults. Offer incentives or awards to motivate their participation.

4. Use of Social Media:

- **Online Challenges:** Create online challenges or campaigns related to water bucket brigades. Encourage participants to post videos of their practice sessions and nominate others, creating a viral trend.
- **Social Media Platforms:** Utilize social media platforms to share informative posts, tutorials, and success stories related to water bucket brigades. Engage with the audience through polls, quizzes, and discussions.

5. Community Pride:

- **Community Building:** Foster a sense of pride and ownership within the community regarding their firefighting capabilities. Highlight the importance of everyone's contribution in keeping the community safe.
- **Recognition:** Recognize and appreciate the efforts of active participants, both young and old, during

community events. Publicly acknowledge their contributions to boost their morale and inspire others.

6. Collaboration with Schools and Colleges:

- **Educational Institutions:** Collaborate with local schools and colleges to include firefighting and emergency response training in their curriculum. Encourage students to actively participate in community initiatives like water bucket brigades.
- **Competitions:** Organize inter-school or inter-college competitions related to firefighting techniques, including water bucket brigades. Such events can foster a spirit of healthy competition and camaraderie among students.

7. Continuous Training and Support:

- **Regular Training:** Provide regular training sessions for community members to enhance their skills and knowledge regarding water bucket brigades.
- **Mentorship:** Establish a mentorship program where experienced community members mentor newcomers, ensuring a transfer of knowledge and skills.

By implementing these strategies, communities can create an environment where active participation in water bucket brigades becomes a shared responsibility and a source of pride for community members, especially the younger generation.

Core Values

Discussing the water bucket relay in the context of honing leadership skills for young adults can offer valuable insights into teamwork, communication, and problem-solving, essential aspects of effective leadership.

- **Teamwork and Collaboration:** The water bucket relay requires participants to work together, emphasizing the importance of teamwork. Young adults learn to collaborate, coordinate their efforts, and rely on each other's strengths, fostering a sense of unity and camaraderie within a team.
- **Communication Skills:** Clear communication is crucial for successfully passing the water bucket from one person to another. Participants learn to convey instructions concisely and listen actively, enhancing their communication skills. In leadership, the ability

to articulate ideas and listen to others is fundamental.

- **Problem-Solving and Adaptability:** Challenges may arise during the relay, such as spills or obstacles. Participants must think on their feet, adapting to unforeseen circumstances. This cultivates problem-solving skills and adaptability, essential qualities for leaders who often face dynamic and unpredictable situations.
- **Leadership and Guidance:** Within the relay, emerging leaders might naturally guide their team, providing direction and motivation. This experience helps them understand the significance of leadership roles. They learn how to inspire and guide others effectively, a cornerstone of leadership development.
- **Empathy and Support:** Observing teammates' efforts and challenges fosters empathy. Leaders who understand their team members' struggles can provide meaningful support. This empathy creates a positive team dynamic and encourages a supportive leadership style.
- **Time Management:** The relay's timed nature instills a sense of urgency, teaching participants to manage their time efficiently. Leaders must balance tasks and prioritize effectively, making time management skills invaluable in leadership roles.
- **Celebrating Success and Learning from Failure:** Whether the team wins or faces setbacks, there are valuable lessons. Leaders learn the importance of acknowledging successes and analyzing failures constructively. This reflective practice is crucial for continuous improvement in leadership abilities.

In summary, the water bucket relay serves as a microcosm of the challenges and opportunities young adults might encounter in real-world leadership scenarios. By participating in such activities, they not only develop practical skills but also gain a deeper understanding of their leadership potential, preparing them for future roles in various aspects of life.

Chapter 3

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

BUCKET BRIGADE: WATER WARRIOS CHAIN

SUBJECT TITLE

SUBJECT OBJECTIVES

- Understand the historical significance and basics of the Water Bucket Brigade
- Practice working as a team to pass buckets swiftly and maintain a continuous flow of water
- Comprehend the types of fires that can be controlled using the Water Bucket Brigade technique (small fires, grass fires, etc.)
- Understand the role of individuals in community firefighting efforts.

3

GOAL

- Empower young adults with an effective and immediate method for containing and extinguishing small fires in order for them to contribute to community safety, protect lives and property, and foster a sense of responsibility and teamwork in times of crisis.

2

LESSON PROPER

- INTRODUCTION OF WATER BUCKET RELAY**
 - Discuss the historical significance of water bucket brigades in firefighting.
 - Explain how fires spread and escalate.
 - Explain how water bucket brigades remain a crucial firefighting method, especially in areas with limited resources.



LESSON PROPER

- BASICS OF WATER BUCKET RELAY**
 - Detail the essential equipment, including buckets, water source, and a designated dumping area.
 - Provide instructions on setting up the brigade area for optimal efficiency.
 - Explain proper techniques for carrying and passing buckets without spillage.
 - Emphasize the importance of teamwork, communication, and synchronization among brigade members.

5



6

290 MODULE 5 Basic Leadership Training through Fire Safety

Instructions on setting up the brigade area for optimal efficiency.

- Clear Space:
- Mark Start and End Points
- Arrange Buckets
- Distance Between Buckets
- Equal Spacing for Participants:
- Supply of Water and Buckets
- Safety Measures
- Designate Refill Station
- Volunteer Support
- Timers and Trackers

7

Proper techniques for carrying and passing buckets without spillage

- Firm Grip
- Steady Movements
- Avoid Overfilling
- Communicate
- Stable Passing
- Maintain Eye Contact
- Teamwork
- Practice
- Maintain Positivity

8

LESSON PROPER

- SAFETY PROTOCOLS
 - Demonstrate safe lifting and carrying methods to prevent injuries.
 - Discuss general fire safety guidelines and how they apply specifically to water bucket brigades.

9

SAFETY PROTOCOLS

- Objective: To teach participants proper techniques for lifting and carrying objects to prevent injuries.
- Warm-Up Exercises:
- Proper Body Mechanics:
 - Get a Firm Grip
 - Engage Your Core
 - Use Your Legs
- Carrying the Water Bucket
 - Avoid Twisting
 - Balance the Load
- Practice Session

10

LESSON PROPER

- PRACTICE APPLICATION AND SIMULATION
 - Organize practical exercises where participants can actively participate in a water bucket brigade simulation.
 - Provide guidance and feedback to participants during the simulation.
 - Present various fire scenarios and guide participants in strategizing their water bucket brigade response for each scenario.

11

Activity 1: Water Bucket Relay Simulation

- Objective: Simulate a real-life scenario of a water bucket relay, allowing participants to practice the skills needed for effective firefighting.
- Set Up: Arrange participants in teams, ensuring each team has a bucket filled with water and another empty bucket placed at a distance.
- Rules Explanation: Explain the rules of the relay: participants must fill a cup with water from the filled bucket, run to the empty bucket, and pour the water into it. They then run back and hand the cup to the next team member. Emphasize the importance of speed, precision, and teamwork.
- Timed Relay: Time each team as they complete the relay. Encourage friendly competition and record the timings.

12

Activity 2: Fire Safety Scenarios

- Objective: Engage participants in realistic fire safety scenarios incorporating water bucket relay techniques.
- Scenario Setup: Create different fire safety scenarios, such as a simulated building fire or a forest fire. Place markers representing fire zones, and position buckets of water strategically around these zones.
- Role Assignment: Assign roles to participants, including firefighters, bucket carriers, and water pourers. Each team must strategize and perform water bucket relays to "extinguish" the simulated fires.
- Simulation: Start the scenarios. Participants must work together, employing water bucket relays to cover the designated fire zones and successfully "put out" the fires.

13

LESSON PROPER

- IMPORTANCE OF COMMUNITY INVOLVEMENT
 - Highlight the importance of training entire communities in this technique to enhance collective firefighting capabilities

14

Importance of Community Involvement

- *Rapid Response*
- *Efficient Resource Utilization*
- *Scalability (SMALL GROUP TO LARGE GROUP)*
- *Fostering Unity*
- *Empowering Vulnerable Populations (INCLUSIVE OF ALL AGES)*
- *Strengthening Disaster Resilience*
- *Enhancing Public Safety Education*

15

CORE VALUES

- *Teamwork and Collaboration*
- *Communication Skills*
- *Problem-Solving and Adaptability (SPILLS, OBSTACLES)*
- *Leadership and Guidance*
- *Empathy and Support (MEMBER STRUGGLE)*
- *Time Management (SENSE OR URGENCY)*
- *Celebrating Success and Learning from Failure*

16

Chapter 4

Basic Leadership Training through Fire Safety

Hose Management and Employment



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 4...

Goal

For participants to gain an appreciation of the critical role the proper employment of different hoses and water streams play in firefighting through targeted instruction and practical exercises. Enabling participants to act as force multipliers during fire emergencies

Objectives

By the end of the session, participants should be able to:

1. Identify the different types of hoses in use during fire response
2. Demonstrate proper hose care and maintenance practices
3. Demonstrate one-and two-person method for connecting, dismantling, and rolling various sizes of hose lines
4. Demonstrate advancing dry hose lines and charged attack lines
5. Employ different water streams for different applications

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Visual Examples
 - i. Nozzles (straight nozzle, variable stream nozzles)
 - ii. Hoses (1 1/2 inch, 2 1/2-inch, 3-inch, 4 inch)
 - iii. Hose Appliances and Tools (Adaptors, Reducers, Spanners, Hydrant Key, Gated Y, Strainer, hose jacket, hose protector)

Total Time of Delivery:

25 to 30 Minutes

Cheat Sheet

Subject Overview

Purpose: This subject will focus on understanding fire hoses and nozzles, which are one of the principal tools used during firefighting operations, to include their capabilities and limitations. Participants will be given targeted instruction, but the subject will focus mainly on skills development through team-based activities that demand teamwork, coordination, and communication.

General Guidance: The facilitator should select an area large enough for participants to properly execute the needed activities, which may include (if available) flights of stairs (2 stories) or long corridors to provide visual barriers during skills. Facilitators should also have sufficient human resources available to properly facilitate activities and provide additional instruction to all participants as needed.

Things to Consider: Ensure the safety of participants during the practical demonstration phase of the activity.

Subject Outline

Audio/ Visual Aids	Outline	Notes
1. PREPARATORY		
PPT COVER	1.1 Greet the participants and start by introducing your name and your teammates.	Begin the activity with a friendly greeting.
LG4-1 PPT S2-3	1.2 Engage the participants by asking them. <ul style="list-style-type: none">• Have you seen firefighters drill how to use fire hoses?• How about actual responses?	Allow the participants time to get acquainted with one another (1-2 mins)
LG4-1 PPT S4-5	Slides/Video I – Botched Response What could be the effects of mismanaging hoses?	Show a video/ photos of poor hose management during a fire response. You can ask them what they think happened in each situation; alternatively, you can share a story of what happened.
	1.3 Present subject objectives.	Refer to Goals and Subject Objectives

Cont...1

Audio/ Visual Aids	Outline	Notes
	2. MOTIVATION	
LG4-1 PPT S6-10	2.1 Start by talking about the historical evolution of fire hoses and their effect on the efficiency of firefighting	Engage the interest of the participants by relating the differences in firefighting techniques before the invention of fire hoses. Allow participants to ask questions on this topic.
	2.2 Present availability of equipment for the Bureau of Fire Protection and the need to preserve equipment	Talk about how fire hoses evolved and how they came to be in modern times.
	Typical Truck Loadout	You can shift the talk by sharing trivia related to hoses in the fire service here in the Philippines. You may cite examples or previous experiences with fire hoses.
		The lecturer may relate situations where fire stations have such a high tempo of operations that hoses have become dilapidated.
	3. LESSON PROPER	
LG4-2 PPT S6-10	3.1 Start the Lesson by discussing the characteristics of a suitable hose	The lecturer may use an actual fire hose as a visual example when discussing this segment.
	What is a Fire Hose? I. Characteristics <ul style="list-style-type: none">• Flexible• Durable• Resistance to rot• Change in Length• Low friction coefficient• Weight	The lecturer may use available hoses so that participants can touch and manipulate them.
PPT S11-12	II. Types according to use Talk about the different types of fire hoses depending on the use.	Allow participants time to practice these techniques.
PPT S13-15	III. Parts of a typical Fire Hose Discuss the different methods for coupling connections.	

Cheat Sheet

Visual Aids	Outline	Notes
<p>LG4-3 PPT S16-21</p>	<p>3.2 Avoiding Damage and Maintenance Discuss the causes of damage to hoses</p> <p>I. Causes of Damage</p> <ul style="list-style-type: none">• Mechanical• Thermal• Organic• Chemical <p>II. Dos and Don'ts when handling hoses</p>	<p>The lecturer may engage participants about their thoughts regarding each cause and how it typically happens.</p>
<p>LG4-4 PPT S22</p>	<p>3.3 Hose Rolling Techniques Briefly Discuss the Different hose Rolling Techniques and their uses</p>	<p>Facilitate participants as they practice according to the teams.</p>
<p>PPT S23-27</p>	<p>Activity I – Hose Drills (30 minutes)</p> <p>Deploying/Storage:</p> <ul style="list-style-type: none">Straight RollDouble DonutTwin DonutSelf-Locking Twin Donut <p>Activity II – Hose Loads (30 Minutes)</p> <p>Hose Loads on Firetrucks:</p> <ul style="list-style-type: none">AccordionFlat LoadHorse Shoe LoadMinuteman Load <p>Recovering:</p> <ul style="list-style-type: none">Figure of 8Shoulder Fold	<p>The facilitator may teach this topic while doing actual demonstrations. And allowing participants to perform after each demo</p>
<p>PPT S28-29</p>		<p>Allow participants to practice each method.</p> <p>Conclude the activity by having a relay race between groups.</p>
<p>LG4-5 PPT S30</p>	<p>3.4 Other Hose Appliances</p> <ul style="list-style-type: none">• Talk about the different types of Hose Appliances and Tools	<p>Have participants work in pairs and then in teams</p>
<p>LG4-6 PPT S31-37</p>	<p>3.5 Nozzles and Fire Streams</p> <ul style="list-style-type: none">• Discuss Different Nozzles and Fire Streams and their applications during fire emergencies• discuss the steps in advancing uncharged and charged hose lines,• Minuteman Deploy• Flat load Deploy	
<p>PPT S38</p>	<p>Activity III – Advancing Hoses and Application of Fire Streams</p>	<p>The order in which each team performs will be up to the facilitator.</p>

Cont...2

Visual Aids	Outline	Notes
	4. GENERALIZATION	
	4.1 Recap of key points during the subject: <ul style="list-style-type: none">• Summarize the common types of hoses according to:<ol style="list-style-type: none">1. Use2. Construction• Emphasize the Do's and Don'ts of hose handling<ul style="list-style-type: none">• Recap the different methods of storing, deploying, and recovering hoses.• Recap the different types of hoses according to their function	
LG4-7	4.2 Real Life Applications <ul style="list-style-type: none">• talk about the importance of the willingness to act• Talk about how participants can take the skills they learned moving forward to teach others	
	5. CLOSING EVALUATION	
	5.1 General Impressions: Allow participants to share what they have learned during the subject 5.2 Ask if there are questions or clarification 5.3 End the subject. Nothing Follows	

Before Fire Hoses [4-1]

During the early days of firefighting, the process of conveying water to a fire and applying it for extinguishment was a significant problem. During the Roman times in 6 AD, during the reign of emperor Ceasar Agustus, the main job of the firefighter brigades known as the Vigiles was to organize water bucket chains from public fountains, basins, and wells. Although water pumps were available at the time, it was the bucket that provided the means of extinguishing fires; this persisted until the 19th century. Coining the term “bucket brigade.”

TRIVIA

- Did you know that the first known hose used was made from the large intestines of animals, most commonly the yak. (Eriksen 2013)

In Search of the Perfect Fire Hose: Their Revolution over time

Before the invention of fire hoses, fire engines used fixed nozzles mounted on top of the vehicles as the primary means of bringing water to bear on a fire. The Van der Heyden brothers realized that strips of leather held together with rivets could produce a sufficiently durable hose pipe and would allow the jet of water from a fire engine to be brought much closer to a burning building. This new method of firefighting spread across Europe. Unlined linen hoses soon replaced these leather hoses, and while the early fabric hoses were lighter and didn't tend to leak, they were not durable. (Eriksen 2013, Halima B 2022)

Through the years, advancements in materials have made the fire service increasingly shift towards the use of fire hoses as the most practical and effective means of bringing sufficient amounts of water to bear in order to extinguish fires.



Shortage of Resources in the Philippine Setting

A recent inventory in 2022 shows that the Bureau of Fire Protection has 24,245 fire hoses currently serviceable divided between 2,343 fire trucks in service. (Forbs 2021) This amount roughly translates to an average loadout of 10 fire hoses per firetruck, leaving little excess to account for damages during firefighting operations and normal wear and tear. As our firefighters battle larger and more complicated fires, emphasizing proper employment and maintenance of equipment has become more and more critical.

TRIVIA

- ▶ The typical firetruck loadout of 10 1.5 inch fire hoses can only reach about 500ft (152m) or less than two (2) minute' walk on a regular street.



3.1 Fire Hoses [4-2]

What is a Fire Hose?

A fire hose is defined as a specially constructed line woven-jacketed hose designed to withstand the hazards of the fire scene. It is a type of flexible tube commonly 50 to 100 ft in length and used by firefighters to carry water under pressure to a point where it is discharged. It is usually either single or double-jacketed with either a rubber or polymer lining. It is the most commonly abused item in the fire service.

Facilitator's Note [1/10]

The facilitator may reiterate that the limited number of available equipment makes it even more critical to properly utilize and care for hoses and nozzles to maximize their usefulness.

Characteristics of a Good Fire Hose

I. Flexible

For ease of handling during employment and making up into a smooth roll, whether wet or dry

II. Durable

The durability and wearing qualities must be as high as possible to tolerate rough use as well as regular wear and tear. Materials must also be fire resistant and suitable to being exposed to extreme heat for extended periods.

III. Resistant to Rot

Because fire hoses will spend the majority of their time in wet and humid environments, materials should be naturally resistant to organic damage; where natural fibers are used, these must be given rot-proofing treatment.

IV. Efficient (Low Friction Coefficient)

Some materials naturally offer less friction when fluids are passed through them. These materials provide a better friction coefficient (an example is Teflon (.10 coefficient). Friction can play a large part when multiple lengths of hoses are joined together to form an attack line.

V. Weight

This factor is vital from both a handling and storage point of view. Hoses should be as light as possible without sacrificing durability.

How do Fire Hoses Work?

The function of a fire hose is relatively simple. Its primary function is to act as a conduit for extinguishing agents in order to douse fires. Fire hoses achieve this by passing water through the hose at high pressure using a pump, which then exits from the nozzle, creating a specific stream pattern at high velocity. The resulting high-pressure water stream is powerful enough to disrupt the combustion process and extinguish it.

Types of Hoses in Common Use (Ali 2023)

I. Attack Hose

Also known as a frontline hose, it is used in directly combating fires. Attack hoses are designed to be light and flexible while being durable enough to withstand large amounts of abuse and hold high water pressures, allowing firefighters to maneuver into position quickly. They transport water and other extinguishing agents at high pressure. (Example: 1.5inch / 2.5 inch single or double woven jacketed/impregnated, polymer lined hoses)

II. Relay and Supply Hose

These are larger hoses ranging from 3.5 to 5 inches in diameter. Supply hoses move large amounts of water from hydrants or other water sources to the firefighting apparatus under lower pressures. These hoses lack the durability of attack hoses but are comparatively lighter and more flexible (Example: 2.5-inch woven jacketed polymer/rubber lined hoses)

Additional Note:

- ▶ In the Philippine setting, 2.5-inch attack hoses are used for the role of relay and supply hoses.

III. Suction Hose

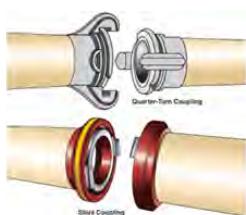
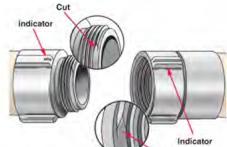
These connect a fire pump to a water source, such as a fire hydrant or a body of water. They have a rigid support structure woven into the hose material to withstand vacuum pressures so they don't collapse when the pump draws water. Suction hoses typically have large diameters to allow more water to be drawn into the pump. (Example: 2.5 – 6-inch hard intake hose) These connect a fire pump to a water source, such as a fire hydrant or a body of water. They have a rigid support structure woven into the hose material to withstand vacuum pressures so they don't collapse when the pump draws water. Suction hoses typically have large diameters to allow more water to be drawn into the pump. (Example: 2.5 – 6-inch hard intake hose)

IV. Occupant Use Hose

Generally found in fire hose cabinets or along building hallways, these share many qualities with attack hoses and are designed to carry water under pressure to a streaming device such as a nozzle. They are typically 1.5 inches (38mm) in diameter and about 100 feet (30m) in length and are intended to be used by building occupants in the early stages of a fire. (Example: 1.5inch single jacket impregnated, polymer lined hoses)

Facilitator's Note [2/10]

To better illustrate this, the facilitator should have actual examples of these hoses. This will allow participants to see the differences of each type physically.



Parts of a Fire Hose (3)

At its Most Basic, a modern fire hose is composed of 3 parts: The **Liner**, the **Jacket**, and the **Couplings**.

- **Liner** – This is located at the innermost layer (commonly made of polyethylene or synthetic rubber) and is composed of a waterproof material able to transport water and other extinguishing agents.
- **Jacket** – The composition and thickness of jackets directly impact their durability. The most common in use today is made of filament polyester and woven in a tight pattern.

(Some hoses have a single jacket, while others have two, i.e., double-jacketed hoses.)

- **Coupling** – Most hoses in everyday use have two fittings that are located on the ends of a hose. It couples, or connects, with a hose, other fitting, hydrant, or other water source and is typically made of brass, stainless steel, or aluminum.

(most commonly in use is the threaded coupling)

Threaded Couplings

Threaded couplings are the most common type of coupling in use and consist of a male (exposed threads) and a female (non-exposed threads, with a rotating swivel). This type of coupling is secured by threading both male and female together to create a water-tight seal.

Lugs – helps tighten or loosen couplings by providing a point of leverage for hands or other tools.

Non-Threaded Couplings

Some fire hoses have non-threaded couplings which are connected via locks or cams. Commonly found on large diameter hoses.

Connecting Couplings

One Man Methods

Freehand – this method involves holding both male and

female coupling in each hand and threading them together by rotating the female swivel. (align Higbee cut)

In between knees – This method is done by placing the male coupling in between the knees of the firefighter. The female coupling is then placed over the male coupling and threaded by rotating the female swivel. (done for larger hoses like 2.5 inches)

Foot Tilt Method – this is done for charged lines when replacing or adding hoses. This involved using the sole of your boot to tilt the male coupling at a 45-degree angle. The female coupling is then placed over the male coupling and tightened by rotating the female swivel.

Two Man Method

Stiff Arm Method – in this method, one firefighter holds the male coupling while the other has the female. Both couplings are joined together and tightened by rotating the female swivel.

IMPORTANT: Make sure not to twist hoses when connecting couplings. Apply the rule: only the female swivel moves during connections.

Facilitator's Note [3/10]

at the end of the topic, Have a sample firehose at each group to act as a reference when discussing and practicing techniques for this topic. Allow participants to practice coupling connections (10 minutes)

3.2 Avoiding Damage and Maintenance [4-3]

Modern fire hoses, while tough, are far from invulnerable. Mildew, abrasion, UV rays, and a host of other forces can weaken hoses, leading to catastrophic failures that injure firefighters or delay firefighting efforts.

A. Mechanical Damage

Mechanical damage pertains to physical damages such as abrasions, cuts, and tears as a result of contact with the environment or due to incorrect manipulation.



Proper care begins with the appropriate use of the hose.

- Avoid laying or pulling hoses over sharp or rough surfaces
- Prevent vehicles from running over hoses
- Open/close nozzles, valves, or hydrants slowly to prevent water hammer
- Periodically change the location of bends/folds when loading or storing hoses
- Hoses should be used at or below rated working pressures

B. Thermal Damage



All fire hoses are only rated at a specific temperature range for a certain period. A regular fire hose can only withstand temperatures of 400 degrees Celsius for a few minutes. (NFPA 1961) Excessive heat can melt or weaken the exterior jacket or dry the rubber lining.

TRIVIA

The average working pressure for fire hoses is typically between 155 – 290 PSI (NFPA 1916 standard) or about ten times the pressure of a regular car tire.

Preventing Thermal Damage



Protecting hoses from thermal damage extends beyond the fire scene. Improperly stored hoses can also cause thermal damage by drying out gaskets and liners.

- Protect Hoses from excessive heat when possible
- Do not leave in a heated area after hoses are dried out
- Periodically run water through hoses to keep the liners soft and pliable
- Roll Dry Hoses in a straight roll before storing to prevent liners from dying out
- Don't allow hoses to be baked under the sun for prolonged periods



C. Organic Damage: Mold and mildew

Organic sources of damage like mold and mildew can slowly cause woven jackets to deteriorate, leading to leaks.



Avoiding Mold and Mildew

- Remove all wet hoses from the apparatus and replace them with dry ones
- Inspect, sweep, and reload hoses which have not been used for maximum six months
- Ensure Hoses are dry before storing

If mold is found on hoses:

1. Scrub the outer jacket with water and mild soap and bleach solution
2. Rinse well
3. Dry Completely



D. Chemical Exposure

Chemicals and petroleum products can damage the outer jacket and rubber lining of fire hoses and may cause them to weaken over time. Other chemicals like caustic acids, however, can outright melt through fire hoses.

Avoiding Chemical Damage

- If the hose has contacted acid, wash it with running water then in a solution of baking soda and water
- Avoid laying hoses in gutters where vehicles have parked or in areas where there is oil and other chemicals.
- Thoroughly wash all fire hoses after each use.
- Dispose of hoses contaminated with hazardous materials



RECAP: Dos and Don'ts of Fire Hose Care and Maintenance

It is essential to understand the proper care for fire hoses if you want to get the most use out of them. Ignoring the basic care practices may cause hoses to fail when you need them the most,



Do's

- Inspect the hose for wear or damage after each use. If you see dirt, you can wash with soapy water and a scrub brush or even simply flush the hose with water.
- Store Hoses away from the sun. Exposure can damage the hose and make it age faster.
- Keep hoses rolled up when in storage because small animals, such as rodents and birds, can cause damage. Also, rolled-up hoses help avoid accidents.
- Let hoses air dry. Although all modern hoses are treated to resist mold and rot, keeping them dry will ensure that they maintain their durability, especially in humid areas or locations near the sea.
- Rotate the positions of your hoses every six months and make sure the folds are not in the exact locations.
- Handle hoses by holding at or near the couplings when applicable.



Don'ts

- Step on your hoses or drag them along rough ground or sharp bends.
- Open and Close valves and nozzles quickly. Doing this will cause a water hammer and may burst hoses prematurely.
- Leave hoses in moist and damp conditions because this promotes mold and rot.
- Store them for extended periods.
- Throw, drag, or drop couplings.

Facilitator's Note [4/10]

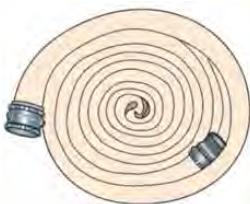
Before Continuing, ask the participants if they have ever observed fire hoses that have failed during fire response, allow them to talk about the situation, and ask them why they think it happened (allow 2-3 answers). Ideally, these are local events.

Facilitator's Note [5/10]

Activity I. – Hose Drills: after the brief discussion, demonstrate how each of the following hose rolls is done. Allow participants to practice each technique until proficient. Provide enough hoses so this activity can be completed promptly. Do the activity in the order: Demonstrate > Return Demo > Practice.



The figure shows a straight roll



The figure shows a donut roll

► 3.3 Hose Rolling Techniques [4-4]

The method selected for rolling a fire hose depends on whether it is intended to be used, stored, or recovered after an operation. All these techniques are done in order to minimize the footprint by allowing more hoses to be stored in a given space, purge water and air from hoses for storage and transport, prevent tangles and kinks when deploying fire hoses, and allowing firefighters to carry hoses during emergencies easily.

IMPORTANT: Whatever roll you decide to use, always remember to protect the couplings from damage.

Hose Rolling Techniques

Straight Roll

This is the most basic roll and is used for storage or recovery of hoses onto a fire truck (apparatus) after the conclusion of an operation. It allows for the draining of water and air from a hose.

How to perform:

- Lay out the hose straight and flat on a clean surface. Roll the male coupling over onto the hose to start
- Start rolling the hose at the male end to protect threads; roll the hose from the male end to the female
- Continue rolling the coupling over onto the hose to form an even roll
- Lay the completed roll on the ground and tamp any coils down into the roll with a foot

Donut Roll

Done for situations when hoses are going to be deployed from the roll for use. Both ends are available and can quickly be unrolled with less likelihood of spiraling and kinking.

How to perform:

- Lay the hose in a straight line
- Start the roll about five feet (one arm span) off center closer to the male coupling
- Roll toward the female end, leaving sufficient space at the center loop to insert a hand for Carrying
- Extend the short length of the hose at the female end over the male threads to protect them
- The couplings should be within about 12 inches of each other

Twin Donut Roll

A compact roll transportable for special applications, such as deploying a hose in Highrise situations. Both coupling ends are available for unrolling.



The figure shows a twin donut roll

How to perform:

- Place the male and female couplings together and lay the hose flat, forming two parallel lines
- Fold the loop end over and onto the two lines
- Roll both lines simultaneously to the couplings
- You may use a piece of rope to secure the roll by inserting the rope in the center loop

Self-Locking Twin Donut Roll

Same features as the twin donut, but the hose is secured together using a portion of the hose itself. Useful when carrying hoses for long distances or up flights of stairs.



The figure shows a self-locking twin donut roll

How to perform:

- Place the male and female couplings together and lay the hose flat, forming two parallel lines
- Move one side of the hose over the other to create an intersection with a loop. The loop should be large enough to create the carrying handle
- Fold the loop back towards the couplings to the point where the hose crosses.
- From that point, roll both sides of the hose towards the coupling with the loop as its center. A loop should be created on each side of the roll.
- Position both couplings on top of the roll
- Adjust the loops so that one is larger than the other, then pass the larger loop over the couplings and through the smaller loop

Facilitator's Note [6/10]

at the end of the topic, Validate the ability to perform the four techniques by assigning each participant a random hose roll to perform. All participants must complete. You can speed up the process by dividing participants into two groups and having a group perform simultaneously one after the other.

Hose Folds for Loading on Firetrucks

If space is available, fire hoses are loaded on a truck in the folded configuration. This allows firefighters to quickly pull off and carry preconnected lengths of hose depending on the need. Normally, pre-staged fire hoses are connected in 200ft lengths (4 hoses). What all fold techniques have in common is that they make the male coupling available to connect nozzles easily.

IMPORTANT: folded hoses should periodically be unloaded to prevent mechanical damage to the fold and creases. When loading in confined areas, make sure folds

are not packed too tightly (loose enough to fit a gloved hand between folds.)

Facilitator's Note [7/10]

Activity II. – Hose Loads: after the brief discussion, demonstrate how each of the following hose loads and folds are done. Allow participants to practice each technique until proficient. Provide enough hoses so this activity can be completed promptly. Do the activity in the order: **Demonstrate > Return Demo > Practice.**

Note: this is a team activity; divide participants into teams when performing this



Flat Load

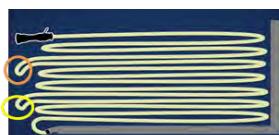
This is commonly used for larger supply hoses and consists of vertically stacked hoses for easy carrying over the shoulder. This can be used when staging fire hoses on a truck before use or when recovering hoses after use. The easiest to load

How to perform:

- Lay the hose in a straight line
- Starting from the female coupling, pull the hose towards you approximately 1meter(3.5ft) long and fold so the next segment rests on top of the first
- Continue folding while alternating lengths so that bends are not directly on top of each other.
- Place the male coupling on top for easy access.

How to perform Flat load using a 200ft preconnected attack line:

- Pre-connect 200ft of hose (4 hoses) and lay the hose flat on
- on the bed, place a “drop loop” before the first coupling (50ft)
- Continue laying the hose flat on the bed, place a “drag loop” before the start of the 4th hose (150ft)
- Continue to stack the remaining hose until completed
- Once complete, place a nozzle at the male coupling or leave this coupling exposed for easy access



The figure shows a flat load for a preconnected attack line. The drop loop is shown in yellow; the drag loop is shown in orange.



The figure shows an Accordion Load

Accordion Load

The name is derived from its appearance after loading. Essentially, this is the same as a flat load but arranged horizontally. This method exposes more of the hose to exposure damage.

How to perform:

- Lay the hose in a straight line
- Starting from the female coupling, pull the hose towards you approximately 1meter(3.5ft) long and fold so the next segment rests beside the first
- Continue folding while alternating lengths so that bends are not directly beside each other.
- Place the male coupling towards the back of the firetruck during loading for easy access.

Horseshoe Load

This folding method is used for attack or supply lines when space on the firetruck is limited. Essentially, this is an accordion fold adapted to fit in confined spaces. The male coupling is presented at the center for easy access.



The figure shows a Horse shoe load

How to perform:

- Lay the hose in a straight line
- Starting from the male coupling, make the first fold at 3 feet from the coupling.
- Once the first fold is complete, fold the hose back so that the next fold rests on the opposite side of the male coupling, continue making sure to alternate between both sides of the male coupling
- Make sure folds are not over-staggered

Minuteman Load

This load is designed to assist the firefighter in getting the initial attack line in place with ease for any type of operation. This is typically done for 200ft sections of the preconnected attack line.

How to perform:

- Pre-connect 100ft of hose (2 hoses) flat load these two hoses, leaving a “grab loop” before the first coupling (at 50ft), and finish this segment by moving the last portion out of the way
- Pre-connect another 100ft of hose (2 hoses), place a nozzle on the male end
- Place the nozzle on the previously loaded lengths of hose facing towards the back of the firetruck
- flat load the rest of the 100ft hose on top of the nozzle. Once finished, connect the female coupling to the male coupling of the first segment



The figure shows a minuteman load. The “grab loop” is indicated in red.

Facilitator's Note [8/10]

Emphasize the need for proper communication and teamwork when performing these tasks. Encourage participants to talk among themselves when performing the skills.

Recovering Hoses

After fire operations, hoses need to be recovered in a timely manner. When recovering hoses, care should be taken to ensure that hoses are properly drained of excess water and extinguishing agents. These next two methods can be used in addition to straight rolls and have certain advantages.

IMPORTANT: when doing these activities, always make sure not to drag hoses and couplings to prevent damage.

Figure of 8 method

This method is used for smaller diameter hoses and



enables quick recovery while also draining hoses of excess water. Additionally, this allows for quick redeployment when needed.

How to perform:

- Shut down the water supply.
- Open nozzles and remove nozzles and or appliances
- Holding the male coupling in your dominant hand, arms outstretched
- Fold the hose by using your arm to come up under the hose; do this alternately between your left and right hand forming a figure of 8
- Continue by walking towards the female coupling, allowing it to drain; do not let the coupling drag on the floor.
- Once the entire length is folded, unload the hose by pivoting your arms downward and allowing the hose to slip off your arms without letting go of the male coupling.
- Lastly, rest the male coupling on top of the hose for easy access.



Shoulder Fold Method

This method can be used to simultaneously drain a fire hose while being able to transport over longer distances or down flights of stairs.

How to perform:

- Shut down the water supply.
- Open nozzles and remove nozzles and or appliances
- Straighten hose
- Pick up the hose at the Male coupling and raise it to shoulder level to allow the hose to start draining
- Moving down the length of the hose, load the hose hand over hand onto your shoulder, making sure the folds of the house rest at the hip level
- Continue until you reach the last coupling and the hose is completely drained
- Secure the last coupling with your hand and carry the hose to the desired

IMPORTANT: Key Principles to Remember in Employing Hoses

The ability to bring water to bear in sufficient quantities and in a timely manner is one of the greatest challenges in

fire fighting since the concept of fighting fires started in the first place. The need to be faster, more efficient, and to accomplish more while making do with available resources has pushed responders to sometimes cut corners and skip steps, leading to failures down the line. Therefore, it is important to remember that many factors contribute to a successful fire operation. As the saying goes, **"Proper planning prevents piss-poor performance."**

Avoid Injuries – Practice Proper Body Mechanics

- Do not allow your arms to get behind your body; keep your elbows tucked in.
- Keep your hips, knees, and ankles facing the same direction.
- Maintain a neutral spine and hinge at the hips.
- Pivot or move your feet to change direction rather than by twisting your body.
- Keep your chest wide and open to prevent shoulder injury.



Create a Plan Beforehand

Make plans. Assign Roles effective attack plans don't happen on the spot. Every coordinated response is the result of hours of planning by suppression teams. Here, available resources are taken into account, and scenarios are simulated. Teams should assign roles so that each member will know their part. **Most important is that plans and techniques should be practiced regularly.**



Assess your needs – size up the distances involved

Stop. Breath. Assess. It may be tempting to rush forward toward the fire scene and pull lengths of hoses as fast as you can. But taking a moment to assess the scene can pay dividends down the line. Some fires may require more lengths of hoses than others. Likewise, some scenarios require that you use different techniques when advancing hoses. Sizing up allows you to maximize your resources and bring your hoses where they are needed the most.



The Importance of Teamwork, Coordination, and Trust

I have your back. You have Mine. Many problems occur when teams need more communication and coordination during execution. Working as a team and trusting that



each member knows what to do and will do their part is what allows firefighting teams to work seamlessly, even in chaotic environments. Building camaraderie in and out of the job is key.

Communication During Fire Emergencies



Keep Talking. One of the first things that break down during emergency situations is people's ability to communicate; this leads to confusion and wasted movement. Practice talking to each other when executing drills. This way, everyone is aware of what is currently happening. Instructions for long hose lines also need to be passed along at times when radio communication devices are unavailable.



3.4 Other Hose Appliances [4-5]

Valves – Primarily used to control the flow of water

- I. **Ball Valves:** used on pumper discharges and gated wyes
- II. **Gate Valves:** used to control the flow of hydrants
- III. **Clapper valves:** Allows water to flow in only one direction



Valves Appliance – Used to increase or decrease the number of operating hose lines

- I. **Gated wye appliance** – most commonly divides a 2.5inch inlet into two 1.5inch outlets via ball valves
- II. **Siamese appliance** – Used to combine two or more hoses into one hose line



Adaptors – used to connect hose couplings with the same diameter and with similar threads. Either double female, double male or sexless



Reducer – as the name implies, connects hoses of two different diameters such as 2.5-to-1.5-inch reducer

Hose Tools:

These are appliances that do not have water pass through them. They are used to tighten, loosen, or protect connections.



Hose Roller – used to prevent damage to hoses when dragged across uneven surfaces, roof, or window edges. It

consists of a metal frame with two or more rollers.

Hose Clamps – used to stop the flow of water in a hose line to allow for replacement of busted/burst hoses

Spanner Wrenches – used to tighten or loosen couplings. Also used to open gas fittings or other utilities. It may also be used as a striking tool (hammer)

Hydrant Key/Wrench – used to remove caps from hydrants and open hydrant valves. You may also have a spanner to make or break coupling connections.

Hose Ramps – used to protect hoses when deployed across roads. This allows vehicles to pass over hoses without compressing them.

Hose Straps – aids in carrying lengths of hoses. It can also be used to secure pressurized lines or even ladders to fixed objects.



3.5 Nozzles and Fire Streams^[4-6]

What are Nozzles?

A fire hose nozzle attaches to the end of a fire hose and directs the flow to a specific target location. It forms the water into a specific stream, which can then be used to put out fires. The earliest nozzles were nothing more than simple cones that focused the pressure from water pumps.

Fire Streams?

Fire streams pertain to the stream of water or other extinguishing agent after it leaves the nozzle until it reaches the desired point. Fire streams effectively put out fires by:

1. Applying water directly to the burning material to **reduce its temperature**,
2. **Reduce the temperature** in the atmosphere and dispersing hot smoke and other gasses present in a burning building.
3. It can **create a barrier** between fuel and fire
4. **Protect firefighters** and property from the extreme heat through the use of water curtains and
5. **Reduce the temperature**, allowing firefighters to get closer and effect extinguishment.



Different Fire Streams and Applications

Solid Stream Pattern (offensive)



This pattern consists of a focused column of water flowing out of the nozzle at high pressure. This can be used to remove obstacles and expose burning areas or directly tackle the seat of fire from longer distances.

Fog Stream Pattern (defensive)



This pattern creates a wide stream of water that covers a larger area. It can be used to reduce the temperature of burning rooms before entering or extinguish flames by separating burning material from the air. Responders can also use this as a **WATER SHIELD** to protect themselves from flames.

Additional Note

- ▶ both streams can be used in combination to tackle complicated fires. Fog streams can also be used to ventilate smoke-filled rooms by either pushing or pulling smoke from enclosed spaces.

Common Types of Nozzles in Use

Each nozzle has its own advantages and disadvantages. Currently, there are three basic types of nozzles in use here in the Philippines.



Straight Nozzle

This is the most basic of nozzles. It is basically a cone-shaped appliance used to focus the water coming from a fire hose into a solid stream of water and commonly made of Brass.

Pros: Relatively Inexpensive

Cons: No adjustment



Master Stream Device

Commonly Found on Fire Truck turrets, these offer a high volume of output and are used to break through obstacles In order to apply water on the seat of the fire directly.



Variable Stream Nozzle

This is the most widely used nozzle by professional firefighters and allows users to vary the amount of water as well as the spray pattern to suit their specific needs.

Deploying and Advancing Hoses During Fire Operations

After proper assessment and when order to deploy fire hoses, responders need to choose the type of method and number of hoses needed. Normally, you observe that firefighters perform **hose throwing**, a technique to deploy hoses from straight rolls quickly. This, however, may cause accidents when in crowded areas. Using the carry and drag methods is much safer and actually faster.

Flat Load Deploy

This method requires 3 team members and allows for the deployment of a 200ft (4hoses) attack line quickly.

- Nozzelman
- Backup
- Pump Truck Operator

How to Deploy Attack Lines from a Flat Load

- After the order to deploy hoses has been given, the nozzleman should move toward the back of the firetruck and grab the nozzle using his dominant hand
- thread your other arm through the “**drag loop**,” using the same arm, grasp the “**drop loop**.”
- Pull the hose line until it clears the bed of the firetruck, and walk towards the scene of the fire.
- Drop the “**Drop loop**” when you feel tension on the line
- The 2nd team member(backup) then arranges the hose line so that it does not cross over itself – this is called **Flaking**
- The nozzle man proceeds towards the scene of the fire until tension is felt on the “drag loop.”
- the 2nd team member then proceeds to the nozzleman, checking the hose lines for twists and folds
- Once clear, the backup signals to the pump truck operator to pressurize the line by bringing both arms over their head with thumbs up. And shouting “**water**.”



Additional Note

- If more than four hoses are needed, the backup can carry an additional flatload and deploy it in the same manner, but make sure to connect the first and second flatloads together before advancing.

What is FLAKING?

Flaking is the term used for neatly staging fire hoses outside the entry point of a burning structure or vehicle to allow for extra hose needed when advancing while also preventing kinks.

Minuteman Deploy



Designed to aid firefighters in getting the initial attack line in place with ease. This method requires 3 team members and allows for deployment 200ft (4hoses) attack line quickly.

Nozzleman
Backup
Pump Truck Operator

How to Deploy Attack Lines from a Flat Load

- After the order to deploy hoses has been given, the nozzleman should move towards the back of the firetruck and grab the nozzle using his dominant hand
- Pull the first 100ft of hose (half of the total load) on the shoulder of your dominant hand.
- Walk forward until you have cleared the fire truck (about 6ft)
- Turn towards the truck in the direction of your dominant hand to avoid entanglement
- Using your non-dominant hand, grasp the “**grab loop**” pull and walk away from the fire truck to completely remove the entire length of hose, drop the loop
- The 2nd team member (backup) then flakes this segment of the hose to remove any twists and kinks
- The nozzleman continues towards the fire until about 20 ft from your destination.
- Grab the nozzle with your dominant hand; with your non-dominant hand, grab the approximate center of the hose left over on your shoulder.
- Offload the hose by tilting your shoulders and pivoting your body towards your dominant side.
- Spread your arms apart and continue walking towards your destination
- At this point, either the nozzleman or backup may arrange the hose by flaking to avoid kinks.
- The 2nd team member then proceeds to the nozzleman, checking the hose lines for twists and folds
- Once clear, the backup signals to the pump truck operator to pressurize the line by bringing both arms over their head with thumbs up. And shouting “**water**.”

Additional Note

The goal of the minuteman load is to have both the nozzle and the coupling for the first 50ft of hose at the point of entry. This provides enough additional hose lines to advance.

Simple Drag (Latag hila)

This is the easiest method for bringing fire hoses to the scene when folded on top of a truck or rolled and ready for use; however, this also has many disadvantages.

- Causes wear and tear on hoses
- May cause confusion and entanglement of hoses
- Requires more human resources to deploy hoses

Connecting Additional Hoses

- Signal to the pump truck operator to cut the pressure to the attack line.
- Remove the Nozzle and attach the male coupling of the leading hose to the female coupling of the additional hose
- Attach the nozzle to the male coupling of the additional hose
- Tighten connections, Check for kinks or twists
- Once clear, signal to the pump truck operator to charge the line
- Bleed the line by slowly opening the nozzle to allow air to escape, check the flow, check for leaks
- Resume firefighting operations

Advancing Fire Hoses – Things to Remember

- Flake hoses in order to provide enough hose for your advance. At least 1 hose length (50 ft)
- Remember to have someone positioned at corners, stairs, and doorways to feed the hose as it is advanced.

Facilitator's Note [9/10]

Activity III. – Advancing Hoses and Application of Fire Streams: After the brief discussion, demonstrate how each of the techniques is done. Allow teams to practice deploying hoses. Before concluding, have each team perform the skills by presenting situations (refer to activities section)

4.2 Real Life Applications [4-7]

Having the necessary skills certainly gives you an advantage when confronted with emergency situations, but skills in isolation, one person's skill will have a relatively small impact. The true potential of these skills lies in developing the collective skills of the people who surround you. What does that mean? Eventually, you will go your separate ways, and your teammates will not be with you; it will then be your task to teach the principles you have learned so that you may be able to nurture others to do the same. Remember, learning without action is nothing more than simple entertainment, so act.

Facilitator's Note [10/10]

Allow participants to share their insights regarding being a volunteer and the value of the skills they learned.

Activities:

III. Advancing Fire Hoses and Application of Fire Streams (40 minutes)

This simulation will allow participants to combine all the skills learned during this subject into a complete response-based scenario. To execute this, you will need eight lengths of hose, two spanners, one nozzle, safety equipment like helmets, a target for fire streams (available targets at stations), or a bucket they need to fill with water.

1. Divide the participants into three teams (8-10member) and allow them to interact with each other
2. Present the situation where they will need to deploy eight lengths of fire hose from the bed of the fire truck using both the minuteman and flat load deployment methods.

The course will have a 90-degree turn in the middle to provide a visual barrier (it is best if you choose a location that goes around a building). After deploying the hose line, they must check connections, communicate with each other, and successfully flow water through the line to hit prepositioned targets (or fill a water bucket). Once complete, teams should properly recover all materials used before lining up in front of the truck. Only once all members are lined up will the timer end
3. The order in which teams will perform will be by drawing lots
4. Allow participants 3 minutes to stage their hose lines before each group performs (this time pressure will encourage active collaboration between participants.)

Footnotes and References:

Waqar Ali 2023, What is a Fire Hose – Types and Methods of Rolling Fire hoses
<https://www.hseblog.com/method-of-rolling-up-a-fire-hose/>

NFPA 1961, Standard on Fire Hose
<https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/>

Halima B 2022, The History of the Attack Fire Hose
<https://acefirepreparedness.com/blogs/news/the-history-of-the-attack-fire-hose>

Annie Eriksen, A Brief History of Fire Hose
<https://rawhidefirehose.com/blog/brief-history-fire-hose>

Ronel Forbes 2021, Shortage of Activated Fire Resources
<https://mgsinsurance.ph/blogs/shortage-of-activated-fire-resources/>

Chapter 4

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

[Cover Page]

Hose Management and Employment

[Fire Station]
[Address]
[Hotline]

Management and Employment

Botched Response



2

What Could be the effect
of mismanaging hoses?

3

Management and Employment

Subject Goal



To gain an appreciation of the critical role the proper employment of different hoses and water streams play in firefighting through. Enabling participants to act as **force multipliers** during fire emergencies.

4

Management and Employment

Subject Objectives



- ✓ Identify the different types of hoses in use during fire response
- ✓ Demonstrate proper hose care and maintenance practices
- ✓ Demonstrate one-and two-person method for connecting, dismantling, and rolling various sizes of hose lines
- ✓ Demonstrate advancing dry hose lines and charged attack lines
- ✓ Employ different water streams for different applications

5

Management and Employment

Before Fire Hoses

During the Roman timer in 6 AD, firefighting brigades known as the Vigiles organized water bucket chains from public fountains, basins, and wells.

Although water pumps were available at the time, it was the bucket that provided the means of extinguishing fires.

Coining the term "bucket brigade."



6

Hose Management and Employment

Trivia:

Did you know that the first known hose used was made from the large intestines of animals, most commonly the **yak**.

7

Hose Management and Employment

In Search of the Perfect Fire Hose: Their evolution over time

The Van der Heyden brothers the first fire hose

Was made from leather held together with nests and allowed the jet of water from a fire engine to be brought much closer to a burning building.



8

Hose Management and Employment

Shortage of Resources in the Philippine Setting

Bureau of Fire Protection has 24,245 1.5 inch fire hoses serviceable divided between 2,343 fire trucks in service as of 2022

This amount roughly translates to an average loadout of 10 fire hoses per firetruck,



Trivia: The typical firetruck loadout of 10 1.5 inch fire hoses can only reach about 500ft (152m) or less than two (2) minutes' walk on a regular street.

9

To maximize available resources, proper employment and maintenance is critical.

10

Hose Management and Employment

What is a Fire Hose?

Is a specially constructed line woven-jacketed hose designed to withstand the hazards of the fire scene.

Designed to carry water under pressure to a point where it is discharged.



A Good Fire Hose Should Be:

Flexible	Efficient
Durable	Light Weight
Resistant to Rot	

11

Hose Management and Employment

Types of Fire Hoses in Use

Fire hoses are classified according to their function and divided into four main types.

- I. Attack Hose
- II. Relay and Supply Hose
- III. Suction Hose
- IV. Occupant Use Hose



12

Hose Management and Employment

Parts of a Fire Hose

At its most basic, a modern fire hose is composed of 3 parts: The Liner, the Jacket, and the Couplings.



13

Hose Management and Employment

When we talk about couplings

These are further divided into two:

Threaded couplings
and
non-threaded couplings

Threaded couplings are the most common type of coupling in use and consist of a male (exposed threads) and a female



14

322 MODULE 5 Basic Leadership Training through Fire Safety

Hose Management and Employment

Coupling Connection Methods

One Man Method

- Freehand
- In between knees

Two Man

- Foot/Tilt Method
- Stiff Arm Method

IMPORTANT: Make sure not to twist hoses when connecting couplings.
Apply the rule:
only the female swivel moves during connections.

15

Coupling Connection Practice

16

Hose Management and Employment

Avoiding Damage

A. Mechanical Damage

Mechanical damage pertains to physical damages such as abrasions, cuts, and tears.

Proper care begins with the appropriate use of the hose.

Avoid laying or pulling hoses over sharp or rough surfaces
Prevent vehicles from running over hoses
Open/close nozzles, valves, or hydrants slowly to prevent water hammer
Periodically change the location of bends/tucks when loading or storing hoses
Hoses should be at or below rated working pressures

17

Hose Management and Employment

Avoiding Damage

B. Thermal Damage

All fire hoses are only rated at a specific temperature range for a certain period. Excessive heat can melt or weaken the exterior jacket or dry the rubber lining.

Preventing Thermal Damage

Protecting hoses from thermal damage extends beyond the fire scene. Improperly stored hoses can also cause thermal damage by being exposed to direct sunlight.

Do not leave in a hot sun area after hoses are dried out
Periodically run water through hoses to keep the hoses soft and pliable
Dust Dry Hoses in a straight line before use to prevent leaves from getting stuck
Don't allow hoses to be baked under a sun for prolonged periods

18

Hose Management and Employment

Avoiding Damage

c. Organic Damage: Mold and mildew

Organic sources of damage like mold and mildew can slowly cause woven jackets to deteriorate, leading to leaks.

Preventing Organic Damage

Remove all wet hoses from the apparatus and replace them with dry ones
Inspect, sweep, and relace hoses which have not been used for maximum six months
Ensure Hoses are dry before storing

19

Hose Management and Employment

Avoiding Damage

D. Chemical Exposure

Chemicals and petroleum products can damage the outer jacket and rubber lining of fire hoses. Chemicals like caustic acids, can outright melt through fire hoses.

Avoiding Chemical Damage

If the hose has contacted acid, wash it with running water then in a solution of baking soda
Avoid laying hoses in gutters where vehicles have
Thoroughly wash all fire hoses after each use
Dispose of hoses contaminated with hazardous materials

20

RECAP: Dos and Don'ts of Fire Hose Care and Maintenance

Do's

- Inspect the hoses for wear or damage
- Store Hoses away from the sun
- Keep hoses rolled up when in storage
- Let hoses air dry
- Rotate the positions of your hoses every six months
- Handle hoses by holding at or near the couplings

Don'ts

- Lay hoses on sharp ground or sharp debris
- Open and Close valves and nozzles quickly
- Leave hoses in moist and damp conditions
- Store them for extended periods
- Throw, drag, or drop couplings

21

Hose Management and Employment

Hose Rolling Techniques

Straight Roll

This is the most basic roll and is used for storage or recovery of hoses onto a fire truck. It is performed after the coupling of all hoses to prevent damage for the draining of water and air from a hose.

Donut Roll

Done for situations when hoses are going to be disconnected from the roll for use. Both ends are available and can quickly be unrolled with less likelihood of springing and kinking.

Twin Donut Roll

Same function as the twin donut, but the hose is twisted together along a portion of the hose itself. Useful when carrying hoses for long distances or up flights of stairs.

22

Activity I - Hose Rolls Demonstration and Practice

23

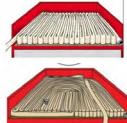
Hose Management and Employment

Hose Folds for Loading on Firetrucks

Fire hoses are loaded on a truck in the folded configuration to allow firefighters to quickly pull off and carry preconnected lengths of hose on the truck.

Pre-staged fire hoses are connected in 200ft lengths (4 hoses).

What all fold techniques have in common is that they make the male coupling available to connect nozzles easily.



24

Hose Management and Employment

Hose Folds for Loading on Firetrucks

Flat Load

This is commonly used for larger supply hoses and consists of vertically stacked hoses for easy carrying over the shoulder. This can be the best way to store the hoses on a truck before use or when recovering hoses after use. The easiest to load.



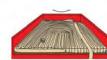
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Hose Management and Employment

Hose Folds for Loading on Firetrucks

Horseshoe Load

This folding method is used for attack or supply lines when space on the firetruck is limited in width. The hoses are folded and adjusted to fit in confined spaces. The male coupling is presented at the center for easy access.



Mountain Load

This load is designed to assist the firefighter in getting the initial attack line in place with ease for any type of operation. This is typically done for 200ft sections of the preconnected static line.



26

Hose Management and Employment

Recovering Fire Hoses

After fire operations, hoses need to be recovered quickly.

These next two methods can be used in addition to straight rolls and allows excess water and extinguishing agents to drain.

Figure of 8 Method

This method is used for smaller diameter hoses and enables quick recovery while also draining hoses of excess water. Additionally, it is good for quick re-deployment when needed.



27

Activity II – Hose Loads Demonstration and Practice

28

Hose Management and Employment

Principles to Remember When Employing Hoses



Create a Plan Beforehand



Avoid Injuries –
Practice Proper Body Mechanics



Assess your needs –
size up the distances involved



The Importance of
Teamwork, Coordination, and Trust

29

Other Hose Appliances

30

Hose Management and Employment

What are Nozzles?

Attaches to the end of a fire hose and directs the flow to a specific target location.

It forms the water into a specific stream, which can then be used to put out fires.

Straight Nozzle
Master Stream Device
Variable Stream Nozzle



31

Hose Management and Employment

Common Fire Streams in Use

Solid Stream Pattern (offensive)
Fog Stream Pattern (defensive)



Fire streams effectively put out fires by:

- I. Reduce the temperature
- II. Create a barrier
- III. Protect firefighters
- IV. Allows Firefighters to approach fire

32

Hose Management and Employment

Deploying and Advancing Hoses During Fire Operations

After proper assessment and when order to deploy fire hoses, responders need to choose the type of method and number of hoses needed.

Flat Lay Deploy

This method requires 3 team members and allows for the deployment of a 200ft (hoses) attack line quickly.

Nozzlemen
Backup
Pump Truck Operator



Minuteman Deploy

Designed to aid firefighters in putting the initial attack line in place as soon as possible. This method requires 3 team members and allows for the deployment of a 200ft (hoses) attack line quickly.

Nozzlemen
Backup
Pump Truck Operator



33

Hose Management and Employment

Deploying and Advancing Hoses During Fire Operations

Simple Drag (Latac hila)

This is the easiest method for bringing fire hoses to the scene when folded on top of a truck or rolled and ready for use; however, this also has many disadvantages.

- causes wear and tear on hoses
- may cause confusion and entanglement of hoses
- Requires more human resources to deploy hoses

Connecting Additional Hoses

• Signal to the pump truck operator to cut the pressure to the attack line.
• Remove the nozzle and attach the male coupling of the leading hose to the female coupling of the additional hose.

- Attach the nozzle to the male coupling of the additional hose
- Tighten connections. Check for leaks or bursts
- Once clear, signal to the pump truck operator to charge the line
- Hold the line by slowly opening the nozzle to allow air to escape, check the flow rate, and repeat
- Resume firefighting operations

34

Deploying and Advancing Hoses Practice

35

Hose Management and Employment

Deploying and Advancing Hoses During Fire Operations

Things to Remember

Hose Management and Employment

QUESTIONS?

37

Activity III
Advancing Hoses and Application of Fire Streams

38

Chapter 5

Basic Leadership Training through Fire Safety

Rope Hero Essentials



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 5...

Goal

To empower young adults with essential rope rescue skills to enhance their preparedness and response capabilities in fire safety situations.

Objectives

By the end of the session, participants should be able to:

1. Enable participants to demonstrate proficiency in basic rope rescue techniques, including knots, anchors, and descending.
2. Instill a strong understanding of safety protocols and risk assessments related to rope rescue operations.
3. Foster teamwork and effective communication among participants during simulated rope rescue exercises.
4. Develop leadership qualities among participants by assigning roles and responsibilities within rope rescue teams.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Others
 - i. Rope Rescue Equipment
 - ii. Training Facility
 - iii. Safety Gear
 - iv. Training Mannequins
 - v. Whiteboards and Markers

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Online Learning Platforms
 - ii. Any useable means of making an example

Total Time of Delivery:

25 to 30 Minutes

Cheat Sheet

Subject Overview

Purpose: The purpose of teaching basic rope rescue training to young adults is to equip them with fundamental skills and knowledge essential for responding effectively to rope-related emergencies. The training aims to enhance their confidence, teamwork, and problem-solving abilities in various rescue situations.

General Guidance: Emphasize the importance of safety protocols and equipment usage. Prioritize practical exercises and real-time simulations. Start with basics and gradually move to complex techniques. Promote teamwork, communication, and mutual support among participants. Provide constructive feedback to enhance participants' skills continuously.

Things to Consider: Ensure participants are physically and mentally prepared for hands-on activities. Adapt training methods for participants with varying physical abilities. If training outdoors, consider weather conditions for safety reasons. Regularly inspect and maintain all training tools and gear for safety.

Subject Outline

Audio/ Visual Aids	Outline	Notes
PPT COVER	1. PREPARATORY 1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged. 1.2 Provide an overview of the session and capture participants' interest.	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on Basic Knot Tying. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
		Briefly introduce the topic: "Today, we will focus on a fundamental skill in emergency situations: basic knot tying when escaping a burning building. This skill can be a lifesaver in various scenarios." Get ready for an engaging and informative session!"

Cont...1

Audio/ Visual Aids	Outline	Notes
 LG5-1 PPT S2-3	1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: " Our aim is to equip you with essential knot tying techniques that can be used during emergency evacuations. Mastering these skills can enhance your preparedness and safety awareness"
2. MOTIVATION		
	2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts.	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!"
	2.2 Foster a sense of camaraderie and ease participants into the session	Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion.
	2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Conclude the preparatory phase with a motivating statement. Engage participants by asking if they have any prior experience with knot tying. Tailor your teaching approach based on their existing knowledge to ensure effective learning.
		With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.
3. LESSON PROPER		
 LG5-1 PPT S4-5	3.1 Understanding the Importance of Knot Tying <ul style="list-style-type: none">• Discuss real-life situations where knot tying can be crucial during building evacuations.	Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
 LG5-2 PPT S6	<ul style="list-style-type: none">Emphasize the role of knots in creating makeshift ladders, securing ropes, and ensuring safe descents. <p>3.2 Types of Basic Knots</p> <ul style="list-style-type: none">Introduce essential knots such as the square knot, bowline knot, and clove hitch.Demonstrate the step-by-step process of tying each knot, emphasizing clarity and simplicity. <p>3.3 Practical Application</p> <ul style="list-style-type: none">Explain scenarios where each type of knot is most suitable (e.g., creating a harness, securing a makeshift ladder).Conduct live demonstrations, encouraging participants to follow along and practice. <p>3.4 Knot Tying Practice</p> <ul style="list-style-type: none">Provide participants with ropes to practice the taught knots under supervision.Offer individual assistance to ensure correct techniques and knot security.	Encourage active participation and questions throughout the session. Monitor participants' progress during the practice session. Provide positive reinforcement and corrective guidance as needed, ensuring everyone can confidently tie the knots.
 LG5-3 PPT S7-8		
 LG5-4 PPT S9-10		

4. GENERALIZATION

4.1 Recapitulation of Key Points	Encourage participants to share their insights and lessons learned from the session.
<ul style="list-style-type: none">Review the square knot, bowline knot, and clove hitch, highlighting their unique applications.Reinforce the importance of precision and tightness in knot tying.	Summarize key points, highlighting the importance of regular practice and preparedness.

Cont...2

Audio/ Visual Aids	Outline	Notes
	<p>4.2 Real-Life Scenarios</p> <ul style="list-style-type: none">• Discuss real emergencies where individuals successfully used knot tying techniques to escape dangerous situations.• Encourage participants to share their thoughts on how these skills could be valuable in their communities.	<p>Relate the session to real-world applications, emphasizing the relevance of the learned skills.</p> <p>Engage participants in a discussion about the practical aspects of knot tying. Ask them to brainstorm other potential uses of these skills in emergency scenarios.</p>
<h2>5. CLOSING EVALUATION</h2>		
	<p>5.1 Q&A Session</p> <ul style="list-style-type: none">• Allow participants to ask questions and seek clarifications about knot tying techniques. <p>5.2 Feedback and Reflection</p> <ul style="list-style-type: none">• Invite participants to share their feedback on the session, focusing on their confidence in applying the learned knots.• Encourage reflections on how they can educate others about basic knot tying for emergency preparedness.	<p>Conclude the session by emphasizing the importance of practice. Encourage participants to continue honing their knot tying skills, ensuring they are well-prepared to face emergency situations.</p> <p>Express gratitude for participants' active participation and encourage them to share the knowledge with their families and communities.</p> <p>Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer.</p>
	<p>Nothing Follows</p>	

Understanding the Importance of Knot Tying [5-1]

Real-life situations where knot tying can be crucial during building evacuations.

Knot tying skills can be invaluable in various real-life scenarios, especially during building evacuations. Here are some situations where knowing how to tie knots can be crucial:

1. Emergency Rappelling:

- In cases where traditional exits are blocked, such as in high-rise buildings during a fire, knowing how to tie a secure rappelling knot can enable individuals to descend safely using ropes from higher floors to lower levels.

2. Creating Harnesses:

- During an emergency evacuation, individuals might need to create makeshift harnesses to secure themselves while descending from a window, balcony, or any elevated platform. Properly tied knots ensure that the harness is secure and reliable.

3. Securing Ropes for Descents:

- Knots play a vital role in securing ropes used for controlled descents. By tying knots like the figure-eight or bowline knot, individuals can anchor ropes to stable objects, allowing safe and controlled descent from elevated places.

4. Building Emergency Ladders:

- In situations where conventional escape routes are inaccessible, individuals can use knots to construct makeshift ladders. Knots like the clove hitch and square knot can be used to secure rungs, creating a ladder that facilitates descending from upper floors.

5. Emergency Slinging and Tying:

- In the absence of readily available safety equipment, knot tying skills are crucial for creating emergency slings. These slings can be used for various purposes, such as securing doors, creating emergency pulley systems, or immobilizing hazardous objects.

6. Securing Exit Points:

- Knots are essential for securing doors and windows to prevent them from closing or locking in case of a hasty

evacuation. This ensures that escape routes remain accessible for others who might be evacuating the building.

7. Carrying and Dragging:

- During evacuations, knots can be used to create handles or loops for carrying injured or incapacitated individuals safely. Knots can also be utilized for dragging heavy objects or creating stretchers in emergency medical situations.

By understanding the practical applications of knots in these real-life scenarios, individuals can enhance their preparedness and increase their chances of safe evacuation during emergencies.

Role of knots in creating makeshift ladders, securing ropes, and ensuring safe descents

During our discussion on basic knot tying, it's crucial to understand the pivotal role knots play in various emergency scenarios. Knots serve as versatile tools, enabling individuals to create makeshift ladders, secure ropes, and ensure safe descents. Let's delve deeper into these vital applications:

1. Creating Makeshift Ladders:

In situations where traditional escape routes are inaccessible, knowing how to tie secure knots can transform everyday objects into life-saving tools. By properly fastening ropes, you can create makeshift ladders using sturdy materials like belts, clothes, or other available items. These ladders facilitate safe climbs or descents from elevated locations, allowing for swift evacuation.

2. Securing Ropes:

Effective knot tying is essential for securing ropes firmly. Whether you're bundling materials for stability or creating a harness for someone in distress, the right knots ensure that the ropes remain intact and dependable. Properly tied knots prevent slippage, providing a sense of security during critical moments.

3. Ensuring Safe Descents:

In emergency situations where descending from a height is necessary, such as escaping from an upper floor during a fire, knots come into play as life-saving devices. Techniques like rappelling knots and harness knots enable controlled descents, minimizing the risk of injuries. Knowing how to tie these knots correctly can mean the difference between a safe escape and a dangerous fall.

By mastering the art of knot tying, you empower yourself with the ability to create stability, security, and safe

pathways in challenging situations. These skills can make a significant impact during emergencies, ensuring your safety and the safety of others around you. As we proceed with our practical demonstrations, remember that these knots are not just strings and loops; they are your lifelines in critical times.

Types of Basic Knots [5-2]



Sheet Bend



Square Knot



Clove Hitch



Reef Knot



Figure 8 Knot



Fisherman's Knot



Carrick Bend



Overhand Knot

Essential knots such as the square knot, bowline knot, and clove hitch.

In our session today, we are going to delve into the fundamental world of knot tying, specifically focusing on three essential knots: the square knot, bowline knot, and clove hitch. These knots are the building blocks of many advanced techniques and are invaluable in various emergency situations.

Square Knot:

The square knot, also known as a reef knot, is versatile and easy to remember. It's used for joining two ropes of equal size.

Imagine it as a simple left-over-right, right-over-left maneuver, creating a secure and flat knot.

Mastering the square knot is like learning the alphabet; it forms the foundation for more complex knots.



Fig. showing a square knot

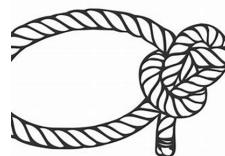


Fig. showing a bowline knot

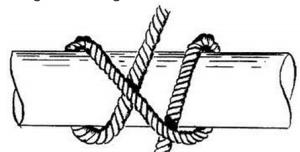


Fig. showing a clove hitch

Bowline Knot:

Often referred to as the “king of knots,” the bowline creates a secure loop at the end of a rope.

Think of it as forming a small loop near the end of the rope

and passing the other end up through the loop, around the standing part, and back down into the loop.

The bowline knot doesn't slip or bind, making it ideal for creating a secure attachment point.

Clove Hitch:

The clove hitch is a quick and simple knot used for securing a rope to an object, like a pole or a tree.

It's formed by wrapping the rope around the object and crossing it over itself, then tucking the working end under the crossing point.

The clove hitch is easy to tie and untie, making it valuable in various situations.

Understanding and mastering these knots is akin to having a toolkit of essential skills. Whether you're securing a makeshift ladder during an evacuation or creating a stable anchor point, these knots will empower you to navigate emergency scenarios with confidence.

Now, let's dive into the practical aspects of tying these knots. Remember, practice makes perfect, and these skills could be vital in ensuring safety during emergencies.

Step-by-step process of tying each knot, emphasizing clarity and simplicity.

Today, we will focus on mastering three fundamental knots: the square knot, bowline knot, and clove hitch. Ensuring clarity and simplicity in your demonstration is crucial for effective learning. Follow these step-by-step instructions to demonstrate each knot clearly to your audience:

1. Square Knot:

Step 1: Hold two ends of the rope in each hand.

Step 2: Cross the right end over the left end.

Step 3: Pass the right end under the left end.

Step 4: Pull both ends tight to secure the knot.

Demonstration Tip: Slowly repeat the steps, narrating each action clearly. Ensure participants can distinguish between the right and left ends of the rope.

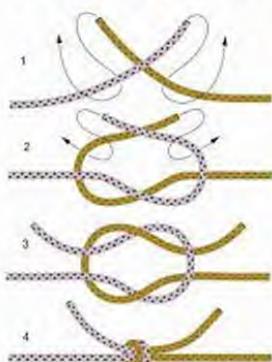
2. Bowline Knot:

Step 1: Create a small loop near the rope's end, ensuring the free end is underneath the standing part.

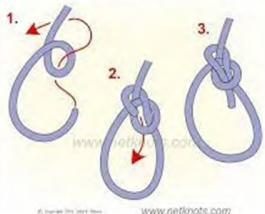
Step 2: Pass the free end up through the loop, around the standing part, and back down into the loop.

Step 3: Tighten the knot by pulling the standing part and the free end simultaneously.

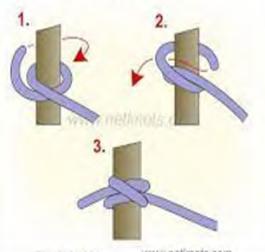
HOW TO TIE A SQUARE KNOT



BOWLINE



CLOVE HITCH



Demonstration Tip: Use a different colored rope or mark the ends to differentiate between the standing part and the free end, aiding participants' understanding.

3. Clove Hitch:

- Step 1: Hold the object you want to tie the rope around.
- Step 2: Pass the rope over the object and cross it over itself.
- Step 3: Wrap the free end around the object, tucking it under the crossed part of the rope.
- Step 4: Pull both ends tight to secure the knot.

Demonstration Tip: Use a pole or a similar object to show how the clove hitch grips onto the item. Emphasize the knot's stability and versatility.

Additional Tips for Effective Demonstration:

Visualize Each Step: Use a large rope and clearly demonstrate each step, ensuring everyone has a good view.

Repeat and Reinforce: Repeat the process, especially if the knot is complex. Reinforce key points while tying the knot multiple times.

Encourage Participation: Ask participants to follow along with their ropes as you demonstrate. Offer individual guidance if someone struggles with a step.

Use Simple Language: Avoid jargon and use everyday language to explain each step, making it accessible to everyone.

Remember, your clear and simple demonstration will build confidence among participants, enabling them to replicate these essential knots effectively.

Practical Applications^[5-3]

Scenarios where each type of knot is most suitable (e.g., creating a harness, securing a makeshift ladder).

1. Square Knot:



The square knot, also known as the reef knot, is commonly used for joining two ropes of equal diameter. It is ideal for:

Tying Bandages: In emergency medical situations, the square knot is used to secure bandages or dressings.

Securing Packages: It is used for tying packages or bundles, ensuring they remain intact during transportation.

Creating Slings: When folded fabric or a cloth needs to be tied to create a sling, the square knot provides a stable and secure fastening.

2. Bowline Knot:



The bowline knot forms a secure loop that does not slip or bind. It is suitable for:

Rescue Scenarios: Bowline is often used in rescue operations, allowing a person to be safely lowered or hoisted.

Securing Boats: Sailors use the bowline to secure boats to a post or a ring, as it creates a reliable loop that won't loosen under load.

Climbing: Climbers use the bowline to attach themselves to safety lines or harnesses securely.

3. Clove Hitch:



The clove hitch is quick to tie and untie and is useful in various situations, including:

Securing Tent Lines: Campers use clove hitches to secure tent lines to stakes, ensuring tents are stable and properly anchored to the ground.

Attaching a Rope to a Pole: When setting up a makeshift shelter or during outdoor activities, clove hitches are used to attach ropes to poles or trees.

Emergency Repairs: In survival situations, the clove hitch can be employed to bind materials together, such as securing a splint or constructing makeshift tools.

By understanding these scenarios, individuals can effectively apply the appropriate knots in diverse real-life situations, ensuring safety, stability, and security in various contexts.

Conduct live demonstrations, encouraging participants to follow along and practice.

Knot Tying Practice [5-4]

Provide participants with ropes to practice the taught knots under supervision.

Ropes:

Provide each participant with a sufficient length of sturdy, preferably nylon, ropes. The length should allow for multiple attempts at tying the knots without frequent re-threading.

Knot Tying Diagrams:

Hand out printed or digital knot tying diagrams illustrating the step-by-step process for each knot taught. Visual aids are essential for participants to refer to as they practice independently.

Practice Boards or Wooden Blocks:

Supply wooden boards or blocks to serve as a stable base for practicing knots. These boards mimic the resistance and structure of real-life scenarios, allowing participants to tie knots securely.

Knot Typing Tools:

If available, provide tools like carabiners or clips that participants can use to simulate attaching knots to various anchor points. These tools enhance the practicality of knot tying exercises.

Facilitator's Note [1/2]

Demonstrate the knot tying techniques in real-time, inviting active participation from everyone present. Encourage attendees to observe closely and then practice the demonstrated knots themselves. Remember, hands-on experience is key to mastering these skills.



HOW TO TIE KNOTS

Associate Research Professor (non-tenure-track) "How Do You Know?" will develop and teach courses in environmental science and ecology.





Safety Scissors or Knives:

Equip participants with safety scissors or knives to cut ropes when practicing. Safety is paramount, so ensure these tools are used responsibly under supervision.

Marker Pens:

Provide marker pens for participants to mark their ropes before tying knots. Marking the ropes helps participants identify specific segments and practice particular parts of the knot-tying process.



Safety Equipment:

Ensure the availability of safety equipment such as gloves, especially if the ropes have rough textures. Gloves protect participants' hands from abrasions and ensure a comfortable learning experience.

Instructional Handouts:

Prepare instructional handouts or booklets summarizing the key points of knot tying techniques. Participants can refer to these materials during and after the session to reinforce their learning.

Practice Space:

Arrange for a suitable area where participants can practice without obstacles. Adequate space ensures that they can maneuver the ropes freely and practice various knot tying scenarios.

Facilitator's Note [2/10]

Supply participants with appropriate lengths of ropes, ensuring they are in good condition and free from fraying. Allocate a designated practice area where participants can comfortably sit or stand while practicing. Facilitators and assistants should circulate among the participants, offering guidance, corrections, and encouragement as needed. Maintain a safe environment, ensuring participants have enough space to practice without any hazards. Remember to emphasize the importance of safety while practicing knot tying techniques.

Facilitator's Guidance:

Most importantly, provide the expertise and guidance of a knowledgeable facilitator. A skilled instructor can offer personalized assistance, correct mistakes, and ensure participants grasp the techniques effectively.

Team Building Activities

1. Knot Tying Relay:

- **Objective:** Reinforce knot tying skills under pressure and improve communication within teams.

Instructions:

- Divide participants into teams.
- Create a relay race where each team member must run to a designated area where different ropes are located.
- They have to tie a specific knot (e.g., clove hitch, bowline, or square knot) correctly and return to the team.
- The next team member repeats the process with a different knot.

- The team that finishes tying all knots accurately and returns to the starting point first wins.

2. Knot Puzzle Challenge:

- **Objective:** Enhance problem-solving skills and collaboration among team members.

Instructions:

- Provide each team with a set of ropes with knots tied in a specific order and style (mix of clove hitch, bowline, and square knot).
- Teams need to disentangle the ropes and arrange them in the correct order to create a rope sequence resembling a rescue operation scenario.
- The first team to successfully recreate the sequence and explain the rescue operation plan wins.

3. Blindfolded Knot Challenge:

- **Objective:** Improve trust and communication within the team while reinforcing knot tying skills.

Instructions:

- Pair up participants within the teams. One person is blindfolded, and the other guides them verbally.
- Provide a rope to the sighted partner and a picture of a specific knot.
- The sighted partner must guide the blindfolded partner to tie the correct knot based on verbal instructions alone.
- Once the knot is tied correctly, teams switch roles and continue until all team members have participated.

4. Obstacle Course Rescue:

- **Objective:** Develop problem-solving skills and teamwork while navigating obstacles.

Instructions:

- Set up an obstacle course representing a burning building (chairs, cones, ropes on the floor, etc.).
- Each team must guide a blindfolded member (the “rescuer”) through the obstacle course using ropes and knots to avoid obstacles.
- The rest of the team, stationed around the course, guides the rescuer using specific knot formations to create pathways and signals to indicate obstacles.
- The team that successfully navigates the course in the shortest time wins.

5. Knot-Based Stretcher Construction:

- **Objective:** Foster creativity, problem-solving, and teamwork while constructing a makeshift stretcher.

Instructions:

- Provide teams with ropes, poles, and cloths.
- Teams must construct a stretcher using the provided materials and secure the joints using clove hitches, bowlines, and square knots.
- Once the stretcher is built, teams compete to carry a team member (or a weighted object) safely across a designated distance.
- The team with the most stable and functional stretcher (that can carry the load without falling apart) wins.

Core Values

Discussing basic knot tying in the context of escaping a burning building can be highly relevant when honing leadership skills for young adults. Learning essential survival skills, such as knot tying, fosters a sense of self-reliance and confidence, crucial qualities for effective leaders.

- **Problem-Solving Abilities:** Understanding various knots and their applications demonstrates problem-solving skills. Leaders often face complex challenges and having the ability to think critically and solve problems is vital.
- **Crisis Management:** In emergency situations, leaders must stay calm and make quick decisions. Knowing how to tie knots for emergency situations can be invaluable, teaching young adults to handle stressful scenarios with composure and efficiency.
- **Teamwork and Communication:** Teaching knot tying in a group setting encourages teamwork. Leaders need to effectively communicate instructions and ensure everyone understands their roles – a skill applicable to any leadership scenario.
- **Attention to Detail:** Knot tying requires precision and attention to detail. Leaders must pay attention to the finer points of any situation, ensuring nothing is overlooked. This attention to detail is crucial for making informed decisions.
- **Building Trust:** Mastering practical skills like knot tying can enhance trust among team members. Leaders who possess diverse skills garner respect and trust from their peers, making it easier to lead and influence others.
- **Adaptability:** Learning different knots for various situations teaches adaptability. In leadership, being able to adapt to changing circumstances and make

quick decisions is essential for guiding a team through challenges.

- **Safety Awareness:** Understanding knots in the context of emergencies promotes safety consciousness. Leaders must prioritize the safety of their team members, making this knowledge directly applicable to responsible leadership.

In summary, integrating basic knot tying skills into leadership training for young adults equips them with problem-solving abilities, crisis management skills, teamwork, attention to detail, trust-building, adaptability, and safety awareness. These skills are foundational for effective leadership in various contexts, making the discussion about knot tying highly relevant when honing leadership skills for young adults.

Chapter 5

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

ROPE HERO ESSENTIALS

SUBJECT TITLE

GOAL

- To empower young adults with essential rope rescue skills to enhance their preparedness and response capabilities in fire safety situations.

2

SUBJECT OBJECTIVES

- Enable participants to demonstrate proficiency in basic knot tying
- Instill a strong understanding of safety protocols and risk assessments related to basic knot tying
- Foster teamwork and effective communication among participants during simulated rope rescue exercises.
- Equip participants with knowledge and skills to respond effectively to rope-related emergencies, ensuring a rapid and efficient response.
- Develop leadership qualities among participants by assigning roles and responsibilities within rope rescue teams.

3

LESSON PROPER

- UNDERSTANDING THE IMPORTANCE OF KNOT TYING
 - Discuss real-life situations where knot tying can be crucial during building evacuations.
 - Emphasize the role of knots in creating makeshift ladders, securing ropes, and ensuring safe descents.

4

Real-life situations where knot tying can be crucial during building evacuations.

- *Emergency Rappelling:*
- *Creating Harnesses:*
- *Securing Ropes for Descents:*
- *Building Emergency Ladders:*
- *Emergency Slinging and Tying:*
- *Securing Exit Points:*
- *Carrying and Dragging:*

5

LESSON PROPER

- TYPES OF BASIC KNOTS
 - Introduce essential knots such as the square knot, bowline knot, and clove hitch.
 - Demonstrate the step-by-step process of tying each knot, emphasizing clarity and simplicity.



LESSON PROPER

PRACTICE APPLICATION

- Explain scenarios where each type of knot is most suitable (e.g., creating a harness, securing a makeshift ladder).
- Conduct live demonstrations, encouraging participants to follow along and practice.

7

LESSON PROPER

PRACTICAL APPLICATIONS



8

LESSON PROPER

KNOT TYING PRACTICE

- Provide participants with ropes to practice the taught knots under supervision.
- Offer individual assistance to ensure correct techniques and knot security.

9

Materials Needed

- *Ropes:*
- *Knot Tying Diagrams:*
- *Practice Boards or Wooden Blocks:*
- *Knot Tying Tools:*
- *Safety Scissors or Knives:*
- *Marker Pens:*
- *Safety Equipment*
- *Instructional Handouts:*
- *Practice Space*

10

CORE VALUES

- *Problem-Solving Abilities*
- *Crisis Management*
- *Teamwork and Communication*
- *Attention to Detail*
- *Building Trust*
- *Adaptability*
- *Safety Awareness*

11

Chapter 6

Basic Leadership Training through Fire Safety

BlazeMobile Command: Youth Drivers Training



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 6...

Goal

The goal is to teach young adults how to operate a firetruck during firefighting operation and to equip them with the essential knowledge, skills, and confidence to effectively and safely handle a firetruck for them to actively contribute to fire emergency responses.

Objectives

By the end of the session, participants should be able to:

1. Identify and explain the key components of a firetruck, including the pump, hoses, nozzles, and other firefighting tools.
2. Demonstrate the proper start-up and shutdown procedures for the firetruck's water pump
3. Teach the techniques for laying hoses efficiently, ensuring proper deployment and connection to water sources.
4. Provide guidance on holding and aiming the fire nozzle for effective water stream control.
5. Introduce different firefighting methods, such as direct attack, indirect attack, and defensive firefighting.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Others
 - i. Firetruck (or simulation model)
 - ii. Hoses, Nozzles and Pump Panel
 - iii. Educational Diagrams and Charts
 - iv. Protective Gear
 - v. Training Facility of Safe Outdoor Space

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Firetruck Simulator Software
 - ii. Videos and Animations
 - iii. Interactive Apps
 - iv. Training Manuals and Guides

Total Time of Delivery:

25 to 30 Minutes

Cheat Sheet

Subject Overview

Purpose: The purpose of this module is to educate young adults about the operation of firetrucks during firefighting operations. Participants will learn the fundamental components of a firetruck, operational procedures, and firefighting techniques. The training aims to enhance their skills, boost their confidence, and prepare them for active involvement in firefighting emergencies within their communities.

General Guidance: The purpose of this module is to educate young adults about the operation of firetrucks during firefighting operations. Participants will learn the fundamental components of a firetruck, operational procedures, and firefighting techniques. The training aims to enhance their skills, boost their confidence, and prepare them for active involvement in firefighting emergencies within their communities.

Things to Consider: Tailor the content to suit diverse audiences, including different age groups and individuals with varying abilities. Assess participants' prior knowledge about firefighting to tailor the training accordingly. Ensure availability and functionality of necessary tools and equipment. Plan the training schedule effectively to cover all essential topics without rushing through the content. Incorporate interactive elements to keep participants engaged and motivated throughout the training.

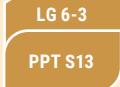
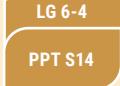
Subject Outline

Audio/ Visual Aids	Outline	Notes
	1. PREPARATORY 1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on Advance Firetruck Operation. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
	1.2 Provide an overview of the session and capture participants' interest.	Briefly introduce the topic: Today, we will explore the fundamental aspects of operating a fire truck during firefighting operations. Understanding these skills is crucial for effective emergency response. Get ready for an engaging and informative session!"

Cont...1

Audio/ Visual Aids	Outline	Notes
LG 6-1 PPT S2-3	1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: "Our goal is to equip you with the knowledge and techniques required to operate a fire truck efficiently. We will focus on pump operation, hose laying, nozzle direction, and essential firefighting methods." We aim to empower you with practical knowledge that you can apply in real-life situations."
2. MOTIVATION		
	2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts.	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!"
	2.2 Foster a sense of camaraderie and ease participants into the session	Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion.
	2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Conclude the preparatory phase with a motivating statement. Encourage active participation and questions from the participants. Emphasize the importance of these skills in real-life firefighting scenarios.
		With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.
3. LESSON PROPER		
LG 6-1 PPT S4-5	3.1 Understanding Firetruck Components <ul style="list-style-type: none"><li>• Discuss the key components of a fire truck, including the pump, hoses, nozzles, and their functions.	During demonstrations, encourage participants to practice operating the fire truck components under supervision. Provide constructive feedback to enhance their skills

Cheat Sheet

Audio/ Visual Aids	Outline	Notes
 LG 6-2 PPT S4-11	3. LESSON PROPER 3.2 Operating the Pump <ul style="list-style-type: none">Provide a detailed explanation of how to start, operate, and shut down the fire truck pump.Demonstrate the correct pressure settings for various firefighting situations.	Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts.
 LG 6-3 PPT S13	3.3 Laying and Connecting Hoses <ul style="list-style-type: none">Teach participants how to properly lay and connect hoses from the fire truck to water sources and fire nozzles.Emphasize the importance of efficient hose management to avoid kinks and tangles.	Encourage active participation and questions throughout the session.
 LG 6-4 PPT S14	3.4 Replacement of Busted Hose <ul style="list-style-type: none">Explain the steps for identifying and replacing damaged or busted hoses promptly.	
 LG 6-5 PPT S15	3.5 Directing the Fire Nozzle <ul style="list-style-type: none">Instruct participants on how to hold and maneuver the fire nozzle for different spray patterns (jet, fog, etc.).	
 LG 6-6 PPT S16	3.6 Firefighting Methods and Techniques <ul style="list-style-type: none">Introduce basic firefighting methods, such as the direct attack, indirect attack, and combination attack.Discuss strategies for different types of fires, including structural fires, forest fires, and vehicle fires.	
	4. GENERALIZATION 4.1 Recapitulation of Key Points <ul style="list-style-type: none">Summarize the essential skills learned, including pump operation, hose laying, nozzle direction, and firefighting techniques.Reinforce the significance of proper coordination and communication among firefighting team members.	Encourage participants to share their insights and lessons learned from the session. Summarize key points, highlighting the importance of regular practice and preparedness.

Cont...2

Audio/ Visual Aids	Outline	Notes
	<p>4.2 Real-Life Scenarios</p> <ul style="list-style-type: none">• Discuss real-life incidents where effective fire truck operation made a significant impact on controlling fires.• Highlight the importance of quick decision-making and teamwork during emergencies.	Relate the session to real-world applications, emphasizing the relevance of the learned skills.
5. CLOSING EVALUATION		
	<p>5.1 Q&A Session</p> <ul style="list-style-type: none">• Allow participants to ask questions and seek clarifications on fire truck operation techniques.	Conclude the session by expressing confidence in participants' abilities and encouraging them to continue learning about firefighting techniques. Remind them of the importance of these skills in ensuring the safety of their communities.
	<p>5.2 Feedback and Reflection</p> <ul style="list-style-type: none">• Invite participants to provide feedback on the session, focusing on what they found most valuable.• Encourage reflections on how they can apply this knowledge in real-life situations, especially in their local communities.	Express gratitude for participants' active participation and encourage them to share the knowledge with their families and communities.
		Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer.
Nothing Follows		

Understanding Firetruck Components

[6-1]

Key components of a fire truck, including the pump, hoses, nozzles, and their functions.

Fire trucks are meticulously designed vehicles equipped with specialized components to ensure effective firefighting. Understanding these components and their functions is vital for anyone involved in firefighting operations. Here's an overview of the key components of a fire truck:

1. Fire Truck Pump:

The pump is the heart of the fire truck. It is responsible for pressurizing and distributing water from the water source to the hoses and nozzles. The pump can vary in capacity, allowing firefighters to control the water flow based on the intensity of the fire. Its main functions include:

- Creating water pressure for firefighting.
- Ensuring a consistent and powerful water stream.



2. Hoses:

Fire hoses are flexible tubes that carry pressurized water from the fire truck to the fire site. These hoses are designed to withstand high water pressure and are available in different sizes and lengths. Their functions include:

- Transporting water from the pump to the nozzle.
- Allowing firefighters to reach various parts of the fire scene.



3. Nozzles:

The nozzle is attached to the end of a fire hose and shapes the water stream. Different nozzles can produce different spray patterns, such as a solid stream for reaching distant fires or a wide spray for covering a broader area. Nozzles serve several functions, including:

- Directing the water stream accurately.
- Adapting the spray pattern to the specific firefighting situation.



4. Water Tank:

Many fire trucks are equipped with water tanks, which store a significant amount of water for initial firefighting efforts. The tank's size varies based on the truck's design and purpose. The water tank's functions include:

- Providing an immediate water supply before



connecting to an external source.

- Enhancing the truck's mobility by carrying its water supply.

5. Ladders:

Fire trucks often have ladders of various types and lengths, such as extension ladders and aerial ladders. These ladders are essential for reaching high places, conducting search and rescue operations, and providing an elevated vantage point for firefighting efforts.



6. Suction Hose:

The suction hose allows the fire truck to draw water from an external source, such as a hydrant, river, or water reservoir. It is used when a direct connection to the water source is necessary, enabling the pump to maintain a continuous water supply.

7. Emergency Lighting and Equipment:

Fire trucks are equipped with emergency lighting, sirens, and other signaling devices to alert traffic and pedestrians during emergencies. Additionally, they carry various firefighting tools, medical equipment, and rescue gear to handle diverse emergency situations effectively.

Understanding these components and their functions is crucial for firefighters, ensuring they can operate the fire truck efficiently and respond effectively to different firefighting scenarios.

Operating the Pump [6-2]

Detailed explanation of how to start, operate, and shut down the fire truck pump.

Operating a fire truck pump is a fundamental skill for firefighters, as it ensures a reliable water supply during firefighting operations. Here's a step-by-step guide on how to start, operate, and shut down a fire truck pump:



1. Starting the Pump:

Check the Water Source: Ensure that the fire truck is connected to a reliable water source, such as a hydrant or a water tanker.

Inspect the Pump: Before starting, visually inspect the pump, hoses, and connections for any visible damages or leaks. **Engage the Pump:** Start the fire truck engine and engage the pump control panel. This might involve flipping a switch, pressing a button, or turning a dial,

depending on the specific pump design.

Prime the Pump: If the pump is not self-priming, it needs to be primed to remove air from the system. This is typically done using a primer or a vacuum system. Follow the manufacturer's instructions for priming the pump.

Monitor Gauges: Keep an eye on the pump pressure gauges. The intake pressure gauge shows the water supply pressure from the source, while the discharge pressure gauge shows the pressure of the water being pumped out.



2. Operating the Pump:

Adjust Pressure: Adjust the pump pressure according to the firefighting requirements. Different situations may require different pressure settings. For example, a direct attack on a fire might require higher pressure than a defensive strategy.

Control Water Flow: Use the throttle control to regulate the flow of water. Firefighters often communicate using radio or hand signals to coordinate water flow and direct the nozzle operators.

Coordinate with Team: Maintain communication with the team members to ensure that the water supply is steady, and hoses are properly charged.

Monitor Pump Operation: Keep an eye and ear out for any unusual sounds, vibrations, or pressure drops, which could indicate a problem with the pump system. Be prepared to shut down the pump if any issues arise.

3. Shutting Down the Pump:

Reduce Throttle: Gradually reduce the throttle to decrease water flow. Sudden changes in pressure can damage the hoses or nozzle.

Close Discharge Valves: Close all discharge valves systematically. This prevents water hammer, a sudden pressure surge that can damage the pump or hoses.

Relieve Pressure: Open a relief valve or discharge a small amount of water to relieve pressure from the system gradually.

Turn Off the Pump: Once pressure is relieved, turn off the pump following the manufacturer's.

This typically involves disengaging the pump control panel.

Inspect and Secure Equipment: After shutting down the pump, inspect all hoses, nozzles, and connections for damage. Secure the equipment properly for transport or the next operation.



Note: It's crucial to follow the manufacturer's guidelines and the fire department's standard operating procedures when operating a fire truck pump. Regular training and practice are essential to ensure that firefighters can effectively and safely operate the pump during emergencies.

Correct pressure settings for various firefighting situations.

In this segment, we will learn about the crucial aspect of setting the right pressure for different firefighting situations. Proper pressure ensures an effective water flow from the hose, essential for controlling fires. Let's focus on understanding the correct pressure settings for various scenarios:



1. Structural Firefighting:

Low Pressure (40-70 psi): Use low pressure when you need a wide and dispersed water spray. This setting is suitable for attacking fires in structures where you want to cover a broader area. It's effective for controlling smaller flames and preventing the fire from spreading.

2. Interior Attack:

Medium Pressure (100-150 psi): For interior firefighting, a medium pressure setting provides a focused and forceful stream. This pressure range allows firefighters to penetrate deep into the fire area while maintaining control over the nozzle. It's ideal for situations where precision and power are required.

3. Exterior Attack (Defensive Mode):

High Pressure (150-250 psi): When dealing with large-scale fires or protecting surrounding structures (defensive mode), high pressure is necessary. This setting creates a powerful stream capable of reaching significant heights and distances. It helps in creating firebreaks and preventing the fire from spreading further.

4. Vehicle Fires:

Medium to High Pressure (100-200 psi): Vehicle fires often involve combustible materials, requiring a concentrated and forceful stream. Adjust the pressure within this range based on the intensity of the fire. A combination of fog and straight stream might be used to effectively combat the fire, ensuring it's completely extinguished.

5. Grass and Wildland Fires:

Variable Pressure (50-150 psi): Wildland fires require versatile pressure adjustments based on the fire's behavior and terrain. Lower pressure is suitable for

creating firebreaks and controlling smaller flames, while higher pressure might be necessary to reach flames in trees or shrubs. Firefighters should be adept at swiftly adjusting the pressure to adapt to changing conditions.

Remember, the correct pressure setting is a balance between force and control. It's crucial for firefighters to be proficient in adjusting the pressure according to the situation, ensuring an efficient and effective response. Stay attentive during training drills, and always follow the guidance of experienced firefighters.



Laying and Connecting Hoses [6-3]

How to properly lay and connect hoses from the fire truck to water sources and fire nozzles.

One of the fundamental skills in firefighting is the proper laying and connection of hoses from the fire truck to water sources and fire nozzles. This crucial process ensures a continuous and reliable water supply, which is essential for controlling fires effectively. Here's how to do it right:

1. Survey the Scene:

Before laying hoses, assess the fire scene to determine the optimal placement of the fire truck. Consider the distance from the fire, obstacles, and the availability of water sources like hydrants or natural water bodies.

2. Select Appropriate Hoses:

Choose hoses of the correct length and diameter for the specific firefighting scenario. Different situations may require different hoses to ensure the right water pressure and flow rate.

3. Unload Hoses Carefully:

Gently unload hoses from the fire truck, avoiding kinks and tangles. Proper handling prevents damage and ensures a smooth water flow.

4. Lay Hoses Effectively:

Lay the hoses in a straight line from the fire truck to the water source or the location where the fire nozzle will be deployed. Avoid sharp bends or loops, as these can impede water flow and pressure.

5. Connect Hoses Securely:

Use appropriate hose couplings to connect hoses securely. Ensure a tight connection to prevent leakage, which can lead to water wastage and reduced firefighting efficiency.

6. Establish a Water Supply Chain:

If using hydrants, connect hoses to the hydrant using hydrant wrenches. Open hydrants slowly to avoid water hammer, a sudden surge of water pressure that can damage hoses and equipment.

7. Deploy Fire Nozzle Correctly:

Attach the fire nozzle to the last section of the hose line. Ensure the nozzle is tightly secured to prevent water leakage. Hold the nozzle securely to maintain control over the water stream.

8. Test the Water Flow:

Once hoses are laid and connected, test the water flow by partially opening the nozzle. Adjust the water pressure according to the firefighting needs – higher pressure for a focused, longer reach, and lower pressure for a broader spray pattern.

9. Regularly Inspect Hoses:

Regularly inspect hoses for signs of wear, such as cracks, bulges, or soft spots. Replace damaged hoses immediately to maintain the integrity of the water supply system.

10. Communicate Effectively:

Maintain clear communication among team members. Designate roles for laying hoses, connecting them, and operating the nozzle. Efficient teamwork ensures a smooth and rapid deployment of the water supply chain.

By mastering the art of laying and connecting hoses effectively, firefighters can establish a robust water supply, allowing them to combat fires with precision and control. Remember, proper training and regular practice are essential to hone these skills and ensure the safety of both firefighters and the communities they serve.

Importance of efficient hose management to avoid kinks and tangles.

Highlighting the significance of efficient hose management is crucial in firefighting operations. Proper hose handling ensures a seamless flow of water, allowing firefighters to respond swiftly and effectively to emergencies. Here's a rephrased emphasis:

"Efficient hose management is paramount to our firefighting efforts. Ensuring hoses are laid out smoothly and without kinks or tangles is not just a matter of convenience; it directly impacts our ability to combat fires effectively. A kinked or tangled hose can disrupt the water flow, causing delays that can be critical during an emergency. By mastering proper hose handling techniques, we guarantee a continuous and reliable water supply, enabling us to respond with precision and speed, ultimately saving lives and property."



Replacement of Busted Hose [6-4]

Steps for identifying and replacing damaged or busted hoses promptly.

Step Guide

Step 1: Assess the Situation

- **Stay Calm:** Maintain composure to think clearly and act decisively.
- **Safety First:** Ensure the safety of yourself and your team members. Assess the fire's intensity and potential hazards before approaching the damaged hose.



Step 2: Locate the Damage

- **Visual Inspection:** Look for visible signs of damage such as cracks, bulges, or holes along the hose.
- **Check Water Flow:** If the water flow is irregular or significantly reduced, it might indicate a hose leak or blockage.

Step 3: Communicate

- **Alert the Team:** Inform your team members about the damaged hose and its location.
- **Coordinate:** Coordinate with your team leader or officer to decide on the replacement plan.

Step 4: Shut Down the Water Supply

- **Close the Nozzle:** Shut off the nozzle to stop the water flow.
- **Control the Pump:** Communicate with the operator to shut down the pump, ensuring no water pressure in the damaged hose.

Step 5: Remove the Damaged Hose

- **Detach Connections:** Unscrew couplings carefully to detach the damaged hose from both the water source and the nozzle.
- **Proper Handling:** Handle the damaged hose carefully to avoid injury and prevent water splashing.

Step 6: Replace with a Spare Hose

- **Retrieve Spare Hose:** Get a spare hose from the fire truck or designated storage area.
- **Connect the New Hose:** Securely attach one end of the spare hose to the water source and the other end to the nozzle, ensuring tight fittings.

Step 7: Test the Replacement

- **Open the Nozzle:** Open the nozzle gradually to resume water flow through the new hose.
- **Check for Leaks:** Inspect connections for any signs of leaks. If leaks are found, tighten the couplings further.

Step 8: Resume Firefighting Operation

- **Resume Operation:** Once the replacement hose is securely in place and functioning correctly, resume firefighting operations as directed by your team leader.

Important Tips:

- **Regular Training:** Regular training ensures all team members know how to identify and replace damaged hoses swiftly. **Team Communication:** Effective communication within the team is vital to ensure everyone is aware of the damaged hose and the replacement process.
- **Safety Gear:** Always wear appropriate safety gear, including gloves and eye protection, when handling hoses and firefighting equipment.

By following these steps, firefighting teams can promptly identify, replace damaged hoses, and continue their firefighting operations effectively and safely.



Directing the Fire Nozzle [6-5]

Instruct participants on how to hold and maneuver the fire nozzle for different spray patterns (jet, fog, etc.).

During firefighting operations, understanding how to hold and maneuver the fire nozzle is crucial for effective water distribution. Different spray patterns serve specific purposes, and knowing how to switch between them can make a significant difference in combating fires. Here's how you can hold and maneuver the fire nozzle for various spray patterns:

1. Jet Spray Pattern:

- Hold the nozzle firmly with both hands.
- Keep the nozzle in a straight line with your body and the direction you want to target.
- For a jet spray (a concentrated, straight stream of water),



adjust the nozzle to create a tight, forceful stream.

- Aim the jet at the base of the fire. This pattern is ideal for penetrating the flames and reaching the core of the fire.

2. Fog Spray Pattern:

- Hold the nozzle with one hand on the nozzle body and the other hand on the bale handle.
- Angle the nozzle slightly upward, away from the ground, and open the bale handle partially to create a fog pattern.
- For a fog spray (a dispersed cloud of fine droplets), adjust the nozzle to widen the pattern.
- Use the fog pattern to create a barrier between you and the fire, especially when dealing with flammable liquids or gases.



3. Combination Spray Pattern:

- Hold the nozzle similarly to the jet spray position.
- Adjust the nozzle to create a combination spray, which is a mix of jet and fog patterns.
- This pattern provides a balance between reach and coverage. Use it when you need both penetration and a wider spray.



4. Wide-Angle Fog Pattern:

- Hold the nozzle as you would for a fog spray.
- Fully open the bale handle to create a wide-angle fog pattern.
- Use this pattern for maximum coverage, especially when dealing with large fires or when protecting a wide area.



5. Maneuvering the Nozzle:

- To change the direction of the spray, rotate your entire body, keeping the nozzle stable.
- Use short, controlled bursts of water to conserve water supply while maintaining effectiveness.
- Communicate with your team to coordinate the direction and pattern adjustments based on the fire's behavior.

Important Points to Remember:

- Practice smooth movements and avoid sudden jerks, ensuring a steady and consistent water flow.
- Regularly check the nozzle for clogs or debris that might affect the spray pattern.
- Familiarize yourself with the nozzle's adjustments before engaging in firefighting operations.

Remember, proper nozzle handling and spray pattern selection are essential skills in firefighting. Mastering

these techniques enhances your effectiveness in controlling and extinguishing fires safely and efficiently.

Firefighting Methods and Techniques^[6-6]

Basic firefighting methods, such as the direct attack, indirect attack, and combination attack.

Firefighting methods are crucial strategies employed by firefighters to effectively combat fires. Understanding these methods is essential for anyone involved in firefighting operations. Let's delve into the fundamental firefighting techniques: the Direct Attack, the Indirect Attack, and the Combination Attack.

1. Direct Attack:



The Direct Attack method is the most straightforward approach to firefighting. In this method, firefighters directly apply water or fire-suppressing agents onto the flames. The primary goal is to cool down the fire and extinguish it by removing heat. Firefighters aim the hose or nozzle directly at the base of the flames, where the fire is actively burning.

Key Points:

- **Precision:** Firefighters need to accurately target the base of the fire, where the fuel source is located.
- **Cooling Effect:** The water cools down the flames, reducing the temperature and preventing the fire from spreading further.
- **Teamwork:** Direct attacks require coordinated efforts among firefighting team members to control the hose, maintain water supply, and ensure safety.

2. Indirect Attack:



The Indirect Attack method is employed when the fire is too intense or dangerous to approach directly. Firefighters create a firebreak by removing vegetation, structures, or any other combustible materials in the fire's path. This method aims to control the fire's spread and prevent it from reaching more significant areas.

Key Points:

- **Safety:** Indirect attacks provide a safer distance from the flames, reducing the risk to firefighters.
- **Controlled Firebreak:** Creating a controlled burn or removing fuel sources helps contain the fire within a specific area.
- **Strategic Planning:** Firefighters must plan the firebreak carefully, considering wind direction, terrain, and the fire's behavior.

3. Combination Attack:

The Combination Attack method combines elements of both direct and indirect approaches. Firefighters strategically create a firebreak while also applying water or fire-suppressing agents directly to specific areas. This method is versatile, allowing firefighters to adapt to changing fire conditions effectively.

Key Points:

- **Versatility:** Combination attacks provide flexibility, allowing firefighters to switch between direct and indirect methods based on the fire's behavior.
- **Optimal Resource Utilization:** Firefighters can use resources efficiently by combining different techniques for maximum effectiveness.
- **Constant Assessment:** Firefighters must continually assess the fire's behavior and adjust their approach accordingly, ensuring the most suitable method is applied.

Understanding these basic firefighting methods equips firefighters with the knowledge needed to make quick, informed decisions during emergencies. By employing these techniques strategically, firefighters can efficiently control and extinguish fires, minimizing damage and ensuring the safety of both responders and the community. Strategies for different types of fires, including structural fires, forest fires, and vehicle fires.

Strategies for Different Types of Fires:

1. Structural Fires:

Structural fires, occurring in buildings or similar

structures, demand strategic approaches to minimize damage and ensure the safety of occupants.

- **Rapid Entry and Search:** Firefighters swiftly enter the building, prioritizing rescue operations if occupants are inside. They search rooms, aiding trapped individuals.
- **Fire Containment:** Focus on confining the fire to its origin, preventing its spread to other parts of the building. This can be achieved through door closures and ventilation control.
- **Vertical Ventilation:** For multi-story buildings, ventilate the structure vertically, releasing smoke and superheated gases, improving visibility for firefighters inside. **Attack and Extinguishment:** Employ an effective attack line to suppress the fire. Techniques include direct attack (aiming water at the flames) or indirect attack (aiming at the ceiling to cool the superheated gases).
- **Salvage and Overhaul:** After extinguishing the fire, salvage valuable items from water damage and conduct overhaul operations to check for hidden flames and prevent rekindling.

2. Forest Fires:

Forest fires, often expansive and fast-spreading, require specialized tactics to contain and control.

- **Firebreaks:** Establish firebreaks by clearing vegetation to create barriers, preventing the fire's advance.
- **Backburning:** Set controlled fires from the inner side of the firebreaks, eliminating combustibles and reducing the main fire's intensity.
- **Aerial Water Drops:** Utilize helicopters or planes to drop water or fire retardants over the flames, slowing down the fire's progression.
- **Control Lines:** Firefighters create control lines using tools like bulldozers, removing flammable materials, and creating natural or man-made barriers.
- **Monitoring and Patrol:** After containment, monitor the area for hotspots and patrol the perimeter to prevent flare-ups.

3. Vehicle Fires:

Vehicle fires pose unique challenges due to the presence of fuel and potential hazardous materials.

- **Safety First:** Prioritize safety, ensuring occupants are evacuated to a safe distance. Keep bystanders away from the vehicle.
- **Isolate the Area:** Establish a safety cordon to prevent the fire's spread and protect nearby vehicles and structures. **Fire Suppression:** Use specialized foam or water to extinguish the fire, aiming at the base of the flames. Cool adjacent vehicles to prevent the fire's spread.
- **Tackle Hazardous Materials:** Identify the vehicle's cargo and inform responders of any hazardous materials, allowing them to take appropriate precautions. **Prevent Re-ignition:** Ensure the fire is fully extinguished, preventing re-ignition. Conduct thorough cooling and damping operations.

Fire Scene Scenario for Young Adults' Firetruck Operation

Scenario Description:

In this simulated fire scenario, participants will respond to a controlled fire incident in a residential area. The firetruck, equipped with a pump, hoses, and various nozzles, is stationed nearby. The scenario involves a small outdoor fire near a house, with the fire spreading to nearby bushes. Participants are divided into teams, each responsible for specific tasks, including operating the firetruck's pump, laying hoses, replacing a busted hose, and using different jet streams to control the fire.

Facilitator's Note [1/3]

Discussing these strategies emphasizes the importance of tailored approaches to various fire types. Understanding these methods equips responders with the knowledge needed for effective and safe firefighting, ensuring both their safety and the protection of property and lives.

Tasks:

Team A: Pump Operation

Task: Start and operate the firetruck's pump to supply water to the hoses.

Evaluation Criteria:

- Proper startup and operation of the pump.
- Ability to maintain consistent water pressure.

Team B: Laying of Hose

Task: Lay hoses from the firetruck to the fire scene, ensuring proper alignment and connection.

Evaluation Criteria:

- Correct unfolding and positioning of hoses.
- Secure connection of hoses without kinks or tangles.

Team C: Changing Busted Hose

Task: Identify and replace a section of the hose that has been intentionally damaged (simulating a busted hose during firefighting).

Evaluation Criteria:

- Quick identification of the damaged section.
- Efficient replacement of the hose segment without water loss.

Team D: Using Different Jet Streams

Task : Use different jet streams (solid stream, fog pattern) to control the fire effectively.

Evaluation Criteria:

- Proper selection of jet streams based on the fire's intensity.
- Effective use of streams to control and extinguish the fire.

Evaluation Checklist:

Pump Operation:

- Successfully started and operated the pump.
- Maintained consistent water pressure.

Laying of Hose:

- Correctly unfolded and positioned the hoses.
- Ensured secure connections without kinks or tangles.

Changing Busted Hose:

- Identified the damaged section promptly.
- Replaced the hose segment efficiently without water loss.

Using Different Jet Streams:

- Selected appropriate jet streams based on fire intensity.
- Effectively used streams to control and extinguish the fire.

Fire Scene Scenario for Young Adults' Firetruck Operation with Bucket Relay

Scenario Description:

A small fire has broken out in a wooded area near a residential neighborhood. The participants, acting as a team of young adult firefighters, are tasked with operating a firetruck and employing a bucket relay system to extinguish the fire and prevent it from spreading to nearby homes.

Instructions for Participants:

- Operate the Firetruck:** Participants need to start the firetruck, position it strategically for optimal reach, and ensure the water pump is functioning correctly.
- Bucket Relay Operation:** Participants will form a bucket relay line, filling buckets with water from a nearby water source and passing them along the line to throw on the fire.
- Coordinate Efforts:** Proper communication and coordination are vital. Participants should work together, aiming to douse the flames effectively.
- Ensure Safety:** Participants must wear appropriate protective gear, maintain a safe distance from the fire, and follow all safety protocols.

Evaluation Checklist:

Firetruck Operation:

- Successfully started the firetruck.
- Positioned the firetruck strategically for effective firefighting.
- Demonstrated proper use of the water pump.
- Maintained a steady and controlled water flow.

Bucket Relay Operation:

- Formed an organized bucket relay line.
- Filled buckets efficiently and passed them along the line without delays.
- Threw water accurately onto the fire, targeting the base of the flames.
- Demonstrated teamwork and coordination during the

Facilitator's Note [2/3]

This simulation aims to assess participants' skills in operating a firetruck under controlled conditions. Encourage communication and teamwork among team members. Safety protocols must be followed at all times. Provide constructive feedback to enhance participants' firefighting abilities and ensure their understanding of different firefighting techniques.

bucket relay operation.

Communication and Coordination:

- Effectively communicated within the team, indicating when to pass buckets and when to start/stop water flow.
- Demonstrated synchronized efforts between the firetruck operator and the bucket relay team.

Safety Protocols:

- Wore appropriate protective gear, including helmets and gloves.
- Maintained a safe distance from the fire, avoiding risky situations.
- Followed all safety guidelines and instructions provided by the facilitator.

Facilitator's Note [3/3]

Evaluate participants based on their ability to work as a team, follow instructions, and execute the firefighting techniques effectively. Encourage a debriefing session after the activity to discuss lessons learned and areas for improvement. The checklist serves as a guideline, but also observe participants' overall attitude, communication, and cooperation during the exercise.

Overall Performance:

- Acted efficiently and calmly under pressure.
- Demonstrated problem-solving skills and adaptability in handling the fire scenario.
- Showed a good understanding of the roles and responsibilities during the firefighting operation.

Core Values

Studying firetruck operations can serve as a metaphorical framework for honing leadership skills among young adults. Firefighters exemplify crucial leadership qualities such as teamwork, communication, decision-making, and adaptability.

Teamwork and Collaboration: Firefighters operate as a team, relying on each other's expertise and coordination. Similarly, young leaders learn to work collaboratively, understanding the strengths of team members and leveraging them effectively.

Effective Communication: Firefighters must convey information clearly and concisely, which is a fundamental leadership skill. Young adults can learn how precise communication ensures tasks are completed efficiently and everyone understands their roles.

Decision-making under Pressure: Firefighters make critical decisions swiftly in high-pressure situations. This mirrors the challenges young leaders might face, teaching them to make informed decisions promptly, a

skill invaluable in various contexts.

Adaptability and Crisis Management: Fires are unpredictable, demanding adaptability. Leaders must learn to manage unexpected challenges, adapting their strategies while maintaining composure. This resilience is vital for young adults in leadership roles.

Accountability and Responsibility: Firefighters are responsible for the safety of others and their team. Learning this responsibility can instill a sense of accountability in young leaders, making them aware of the impact of their decisions on others.

Resource Management: Firefighters efficiently allocate resources like water and manpower. Translating this into leadership, young adults learn resource management—how to use available resources effectively and distribute responsibilities for optimal outcomes.

Empathy and Support: Firefighters often deal with distressed individuals. Learning how firefighters provide emotional support can teach young leaders empathy and understanding, vital for creating a supportive team environment.

In summary, the discussion of firetruck operations in the context of leadership provides a tangible, real-world example for young adults. It demonstrates the practical application of essential leadership skills and emphasizes their importance in various situations, preparing them for leadership roles in the future.

Chapter 6

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

BlazeMobile Command: Youth Drivers Training

SUBJECT TITLE

GOAL

- The goal is to teach young adults how to operate a firetruck during firefighting operation and to equip them with the essential knowledge, skills, and confidence to effectively and safely handle a firetruck for them to actively contribute to fire emergency responses

2

SUBJECT OBJECTIVES

- Identify and explain the key components of a firetruck, including the pump, hoses, nozzles, and other firefighting tools.
- Demonstrate the proper start-up and shutdown procedures for the firetruck's water pump.
- Teach the techniques for laying hoses efficiently, ensuring proper deployment and connection to water sources.
- Provide guidance on holding and aiming the fire nozzle for effective water stream control.
- Introduce different firefighting methods, such as direct attack, indirect attack, and defensive firefighting.

3

•UNDERSTANDING FIRETRUCK COMPONENTS

- Discuss the key components of a fire truck, including the pump, hoses, nozzles, and their functions

4

FIRETRUCK PUMP



5

FIRETRUCK HOSES



6

WATER TANK

7

FIRE NOZZLE

8

FIRE LADDER

9

SUCTION HOSE

10

EMERGENCY LIGHTING & EQUIPMENT

11

OPERATING THE PUMP

Provide a detailed explanation of how to start, operate, and shut down the fire truck pump. Demonstrate the correct pressure settings for various firefighting situations.



12

LAYING AND CONNECTING HOSES

Teach participants how to properly lay and connect hoses from the fire truck to water sources and fire nozzles. Emphasize the importance of efficient hose management to avoid kinks and tangles.

13

**REPLACEMENT OF BUSTED HOSE**

Explain the steps for identifying and replacing damaged or busted hoses promptly..



14

DIRECTING THE FIRE NOZZLE

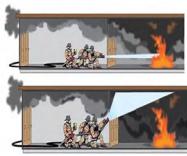
Instruct participants on how to hold and maneuver the fire nozzle for different spray patterns (jet, fog, etc.).



15

FIREFIGHTING METHODS AND TECHNIQUES

Introduce basic firefighting methods, such as the direct attack, indirect attack, and combination attack. Discuss strategies for different types of fires, including structural fires, forest fires, and vehicle fires.



16

CORE VALUES

Teamwork and Collaboration
Effective Communication Decision-making under Pressure
Adaptability and Crisis Management
Accountability and Responsibility
Resource Management
Empathy and Support

17

Chapter 7

Basic Leadership Training through Fire Safety

Hazmat Awareness During Fire Incident



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 7...

Goal

To equip the participants with essential knowledge and skills to recognize, respond to, and mitigate hazardous materials incident effectively and safely by increasing their awareness and understanding of hazardous materials, the program aims to enhance their ability to protect themselves and their communities during emergencies.

Objectives

By the end of the session, participants should be able to:

1. To raise awareness among young adults about different types of hazardous materials, their properties, and potential risks associated with exposure.
2. To educate participants about common situations where hazardous materials are present, both in households and community environments.
3. To enable participants to recognize hazardous materials labels, symbols, and placards commonly used in transportation and storage.
4. To educate young adults about safe handling, storage, and disposal practices for household chemicals and hazardous materials.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Others
 - i. Training Videos
 - ii. Hazmat Basic PPE
 - iii. Simulated Hazmat Placards

B. Alternative Tools

1. Flip Cards
2. Others
 - i. Interactive Apps
 - ii. Online Resources
 - iii. Role-Play Scenarios

Total Time of Delivery:

2 Hours

Cheat Sheet

Subject Overview

Purpose: The purpose of this Hazmat Awareness program is to educate young adults about hazardous materials, enabling them to recognize, respond to, and mitigate Hazmat incidents. By instilling awareness and safety practices, the program aims to empower participants to protect themselves and assist others during Hazmat emergencies.

General Guidance: In this subject the lecturer/facilitator must encourage active participation through discussions, group activities, and hands-on demonstrations. Emphasize the importance of safety protocols and the use of personal protective equipment and relate Hazmat scenarios to everyday situations to enhance understanding and relevance. Foster an open environment where participants can ask questions and seek clarification.

Things to Consider: Tailor the content to suit diverse audiences, including different age groups and individuals with varying abilities. Be culturally sensitive, considering cultural practices and beliefs related to fire safety and evacuation. Ensure that the educational materials and activities are accessible to individuals with disabilities. Present realistic fire emergency scenarios to help participants understand the seriousness of the topic. Provide participants with additional resources, such as brochures and websites, for further learning and reference.

Subject Outline

Visual Aids	Outline	Notes
PPT COVER	1. PREPARATORY	
	1.1 Establish a warm and welcoming atmosphere, ensuring participants feel comfortable and engaged.	Begin the session with a friendly greeting such as, "Good [morning/afternoon] everyone! I hope you're all feeling well today. Welcome to our session on Hazmat Awareness during fire incidents. I'm thrilled to have each of you here." Use a friendly tone and maintain eye contact to convey genuine enthusiasm.
	1.2 Provide an overview of the session and capture participants' interest.	Briefly introduce the topic: Today, we will focus on Hazmat Awareness, specifically in the context of fires. Understanding hazardous materials during fire incidents is crucial for your safety and the safety of others." Get ready for an engaging and informative session!"

Cont...1

Visual Aids	Outline	Notes
LG7-1 PPT S2-3	1.3 Outline learning objectives and what participants can expect from the session	Clearly state the session goals: "Our goal is to provide you with awareness about hazardous materials, their risks during fires, and how to respond safely and effectively in such situations." We aim to empower you with practical knowledge that you can apply in real-life situations.
2. MOTIVATION		
	2.1 Create an interactive environment where participants feel encouraged to ask questions and share their thoughts.	Set the expectation for active participation: "Feel free to ask questions at any time. Your participation enriches our discussion. There are no wrong questions here; we're all here to learn from each other. Let's make this session engaging and interactive!"
	2.2 Foster a sense of camaraderie and ease participants into the session	Conduct a simple icebreaker activity related to fire safety. For example, ask participants to share a fire safety tip they know or a personal experience related to fire safety. This activity encourages participation and sets a positive tone for the discussion.
	2.3 Transition smoothly into the main discussion while maintaining the positive atmosphere	Conclude the preparatory phase with a motivating statement. With this, smoothly transition into the main discussion, ensuring participants are attentive and engaged.
3. LESSON PROPER		
LG7-1 PPT S4-6	3.1 Understanding Hazardous Materials (Hazmat) <ul style="list-style-type: none">Define hazardous materials and their various forms, such as chemicals, gases, or flammable substances.Discuss common hazardous materials found in households and communities.. 3.2 Hazmat Risks During Fire <ul style="list-style-type: none">Explain how hazardous materials can react or	Use multimedia presentations, demonstrations, and group discussions to reinforce key concepts. Encourage active participation and questions throughout the session. Monitor participants' progress during the practice session. Provide positive reinforcement and corrective guidance as needed, ensuring everyone can confidently tie the knots.

Cheat Sheet

Visual Aids	Outline	Notes
LG7-3 PPT S12-13	3. LESSON PROPER <ul style="list-style-type: none">• change when exposed to fire, posing additional risks.• Discuss the dangers of inhaling toxic fumes and the importance of proper protective equipment. 3.3 Identifying Hazardous Materials <ul style="list-style-type: none">• Provide guidance on recognizing hazardous materials labels and symbols.• Discuss the importance of communication with emergency 3.4 Safe Evacuation Protocols <ul style="list-style-type: none">• Outline evacuation procedures specific to Hazmat incidents, emphasizing the importance of designated evacuation routes.• Discuss safe distances and containment measures to avoid exposure. 3.5 Basic First Aid for Hazmat Exposure <ul style="list-style-type: none">• Provide instructions on basic first aid techniques for minor Hazmat-related injuries, such as chemical splashes.• Emphasize the significance of seeking medical help for serious exposures.	
LG7-4 PPT S14-17		
LG7-5 PPT S18-19		
	4. GENERALIZATION <ul style="list-style-type: none">4.1 Recapitulation of Key Points<ul style="list-style-type: none">• Summarize the essential aspects of Hazmat awareness during fires.• Reinforce the importance of staying informed and alert during emergencies involving hazardous materials.4.2 Real-Life Scenarios<ul style="list-style-type: none">• Discuss real-life incidents where Hazmat awareness played a crucial role in minimizing risks and ensuring safety.• Encourage participants to share any experiences or knowledge they have about Hazmat incidents.	<p>Encourage participants to share their insights and lessons learned from the session.</p> <p>Summarize key points, highlighting the importance of regular practice and preparedness.</p> <p>Relate the session to real-world applications, emphasizing the relevance of the learned skills.</p>

Cont...2

Visual Aids	Outline	Notes
5. CLOSING EVALUATION		
	<p>5.1 Q&A Session</p> <ul style="list-style-type: none">• Allow participants to ask questions and seek clarifications related to Hazmat awareness during fires. <p>5.2 Feedback and Reflection</p> <ul style="list-style-type: none">• Invite participants to provide feedback on the session, focusing on what they found most enlightening or challenging.• Encourage reflections on how they can apply Hazmat awareness in their communities to promote safety and preparedness.	<p>Conclude the session by emphasizing the importance of ongoing awareness about hazardous materials, highlighting the role of proactive measures in ensuring personal and community safety.</p> <p>Emphasize the role of proactive prevention and preparedness in ensuring the safety of themselves and their communities.</p> <p>Express gratitude for participants' active participation and encourage them to share the knowledge with their families and communities.</p>
		Tailor the talking points and activities based on the participants' engagement level and adjust the pace of the session accordingly. The session's effectiveness lies in the interactive and engaging approach used by the instructor/lecturer

Nothing Follows

Understanding Hazardous Materials (Hazmat) [7-1]



Hazardous materials and their various forms, such as chemicals, gases, or flammable substances.

Hazardous materials, often abbreviated as Hazmat, refer to substances or materials that, due to their chemical, physical, biological, or radioactive nature, pose a risk to the environment, human health, or property. These materials can be in various forms, including chemicals, gases, or flammable substances, and can cause harm upon exposure, contact, or inhalation. Hazardous materials are categorized based on their specific properties, and their handling, transportation, and disposal are regulated to prevent accidents and environmental pollution.

Various Forms of Hazardous Materials:

Chemicals: Hazardous chemicals include substances such as acids, bases, corrosives, and toxins. These chemicals can cause chemical burns, respiratory issues, or poisoning upon exposure.

Gases: Hazardous gases encompass substances like chlorine, ammonia, and carbon monoxide. Gaseous hazardous materials can lead to respiratory problems, asphyxiation, or explosions in certain conditions.

Flammable Substances: Flammable materials, like gasoline, solvents, and certain gases, can easily catch fire or ignite at specific temperatures or in the presence of a spark. They pose a risk of fires and explosions.

Radioactive Materials: Radioactive substances emit ionizing radiation, which can damage living tissues and



genetic material. Prolonged exposure to radioactive materials can cause cancer and other health issues.



Biological Hazards: Biological hazardous materials include microorganisms (viruses, bacteria, fungi) and toxins produced by living organisms. These materials can cause diseases or infections in humans and animals.

Explosives: Explosive materials, such as dynamite and fireworks, have the potential to release significant amounts of energy in a short time, causing damage to structures and endangering lives.

Oxidizers: Oxidizing substances provide oxygen and can enhance the combustion of other materials. They increase the intensity of fires and can lead to explosions when in contact with flammable substances.

Toxic Substances: Toxic materials, like pesticides and certain industrial chemicals, can cause harm or death upon ingestion, inhalation, or skin contact. Chronic exposure to toxins can result in long-term health issues.

Understanding these various forms of hazardous materials is crucial for proper handling, storage, transportation, and emergency response to prevent accidents and protect both human health and the environment.

Discuss common hazardous materials found in households and communities.

In our everyday lives, we encounter various hazardous materials that, if not handled properly, can pose serious risks to our health and the environment. Understanding these common hazardous materials is essential for practicing safety and preventing accidents. Let's explore some of the materials often found in households and communities:

1. Cleaning Products:



Bleach: Used as a disinfectant and stain remover, bleach can release harmful fumes and cause skin irritation.

Ammonia: Found in glass and window cleaners, it can be corrosive and harmful when inhaled.

Drain Cleaners: Typically contain strong acids or bases that can cause severe burns on contact.

2. Pesticides:



Insecticides: Used to kill insects, they often contain toxic chemicals that can harm humans and pets.

Herbicides: Used to kill weeds, these chemicals can contaminate soil and water if not used properly.

Rodenticides: Designed to kill rodents, they can also harm other animals and even humans if ingested.

3. Paints and Solvents:

Paint Thinners: Used to thin paint and clean brushes, they contain volatile organic compounds (VOCs) that can cause respiratory problems.



Varnishes: Emit harmful fumes during application and drying.

Adhesives: Many adhesives, especially those used in construction, emit toxic fumes.

4. Electronic Waste (E-waste):

Batteries: Alkaline, lithium, and rechargeable batteries contain heavy metals like lead, cadmium, and mercury, which can contaminate soil and water.



Obsolete Electronics: Devices like old computers, TVs, and cell phones contain hazardous components such as lead, mercury, and brominated flame retardants.

5. Medications:

Expired or Unwanted Medications: Improper disposal of medications can contaminate water supplies.



Chemotherapy Drugs: These drugs, used for cancer treatment, can be hazardous if not handled and disposed of properly.

6. Household Gases:

Natural Gas: A flammable gas used for cooking and heating. Leaks can lead to explosions.



Carbon Monoxide: A colorless, odorless gas produced by incomplete combustion. Exposure can be fatal.

7. Motor Vehicle Products:

Motor Oil: Contains harmful chemicals and should be recycled or disposed of properly.



Antifreeze: Contains ethylene glycol, which is toxic to humans and animals.

8. Mercury-containing Items:

Thermometers and Thermostats: These items contain mercury, which can be toxic if released into the environment.



9. Sharp Objects and Biohazardous Waste:

Needles and Syringes: Used medical sharps can transmit diseases if not disposed of safely.



Human or Animal Waste: Contains pathogens that can cause diseases.

Understanding these common hazardous materials is crucial for proper handling, storage, and disposal. By practicing caution and following safety guidelines, we can minimize the risks associated with these materials, ensuring the safety of our households and communities.

Hazmat Risks During Fire [7-2]

How hazardous materials can react or change when exposed to fire, posing additional risks.

When hazardous materials are exposed to fire, they can undergo various reactions and changes, often posing additional risks to both the environment and human safety. Understanding these reactions is crucial in Hazmat awareness. Here's an explanation in a simplified format suitable for young adults.

Chemical Reactions and Hazards During Fires:

1. Combustion:

Common Materials: Combustible chemicals like fuels, solvents, and gases.

Reaction: Combustible materials catch fire and burn, releasing heat, smoke, and sometimes toxic gases.

Additional Risks: Rapid spread of fire, heat-related injuries, and inhalation of toxic smoke.



2. Explosion:

Common Materials: Explosive substances like compressed gases or volatile chemicals.

Reaction: High heat can cause rapid expansion of gases, leading to an explosion.

Additional Risks: Structural damage, flying debris, and secondary fires from the explosion.

3. Toxic Fumes:



Common Materials: Chemicals like pesticides, industrial solvents, and certain metals.

Reaction: Heat can vaporize chemicals, releasing toxic fumes and gases.

Additional Risks: Inhalation of toxic gases can cause respiratory issues, poisoning, or even death.

4. Corrosive Reactions:

Common Materials: Acids, bases, and corrosive chemicals.

Reaction: Heat can intensify corrosive reactions, leading to the release of corrosive substances.

Additional Risks: Burns on skin, damage to eyes, and corrosion of equipment or infrastructure.



5. Radiation Release:

Common Materials: Radioactive substances used in industries, labs, or medical facilities.

Reaction: Heat can damage containers holding radioactive materials, leading to radiation leaks.

Additional Risks: Exposure to radiation can cause severe health issues, including radiation sickness and cancer.



6. Environmental Contamination:

Common Materials: Hazardous chemicals, oils, and pollutants.

Reaction: Fire can cause spillage and contamination of soil, water bodies, and air.

Additional Risks: Environmental damage, affecting ecosystems, wildlife, and local communities.



Precautions:

- **Proper Storage:** Store hazardous materials in designated areas following safety guidelines.
- **Emergency Response:** Train personnel for proper Hazmat response, including firefighting techniques and evacuation procedures.
- **Public Awareness:** Educate the community about potential Hazmat risks and safety measures.

Understanding these reactions emphasizes the importance of preventive measures, proper storage, and swift emergency response in dealing with hazardous materials during fires.



Dangers of inhaling toxic fumes and the importance of proper protective equipment.

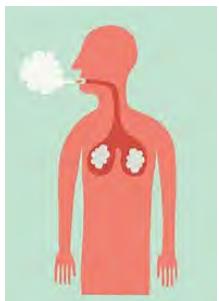
Inhaling Toxic Fumes: A Silent Threat

Imagine this scenario: You're at home, and suddenly, you smell something strange. It's a mix of acrid chemicals and an unfamiliar odor. Your first instinct might be to ignore it, but here's why you should never underestimate that smell. It could be an indication of a hazardous materials (Hazmat) incident nearby.



Understanding the Dangers:

Toxic fumes are one of the most perilous aspects of Hazmat incidents. These fumes can be released from various sources, such as chemical spills, industrial accidents, or even fires involving hazardous materials. When inhaled, they can pose a severe risk to your health.



Immediate Health Effects:

Respiratory Distress: Inhalng toxic fumes can lead to immediate respiratory problems. You might experience difficulty breathing, coughing, or choking.

Irritation: Toxic fumes can irritate your eyes, nose, and throat. You may feel a burning sensation or watery eyes.

Nausea and Dizziness: Exposure to certain chemicals can cause nausea, vomiting, and dizziness.

Long-term Health Risks:

In some cases, inhaling toxic fumes can have long-term health consequences:

Chronic Respiratory Issues: Prolonged exposure to hazardous fumes can result in chronic respiratory conditions like asthma or bronchitis.

Organ Damage: Some toxic chemicals can harm your internal organs, leading to serious health conditions over time.

The Importance of Proper Protective Equipment:

Now, let's talk about how you can protect yourself in the event of a Hazmat incident. Proper protective equipment is your first line of defense. Here's why it's crucial:



Prevention of Inhalation: The right protective gear, such as masks or respirators, can prevent you from inhaling toxic fumes. These devices filter the air, ensuring you breathe safely.

Eye Protection: Goggles or face shields safeguard your eyes from chemical splashes and irritants.

Skin Protection: Hazmat suits and gloves provide a barrier between your skin and hazardous substances, preventing direct contact.

Donning Protective Equipment:

It's not enough to have the gear; you must know how to use it correctly:

Fit Matters: Ensure that your protective equipment fits

snugly but comfortably. A proper seal is crucial for masks and respirators.

Training: Learn how to put on and remove protective gear without contaminating yourself.

Regular Inspection: Check your equipment for wear and tear regularly. Damaged gear won't provide adequate protection.

Final Thoughts:

Inhaling toxic fumes is a grave danger during Hazmat incidents. Understanding these risks and the importance of protective equipment can mean the difference between a safe escape and a health emergency. Remember, safety should always come first, and proper precautions can save lives.

Identifying Hazardous Materials [7-3]

Guidance on recognizing hazardous materials labels and symbols.

Recognizing hazardous materials labels and symbols is crucial for personal safety and emergency response. Here's a comprehensive guide:



Recognizing Hazardous Materials Labels and Symbols:

1. Understand Label Components:

Product Name: Indicates the name of the hazardous material.

Manufacturer Information: Specifies the manufacturer or distributor.

Hazard Statements: Describes the nature of hazards, e.g., "May cause respiratory irritation."

Precautionary Statements: Provides measures to minimize risks, e.g., "Wear protective gloves."

Pictograms: Universal symbols indicating specific hazards.



2. Know Common Pictograms:

- **Flame:** Indicates substances prone to catching fire.
- **Health Hazard:** Represents materials that can cause health issues, like irritation or carcinogenicity.



- **Exclamation Mark:** Indicates less severe health hazards or irritants.
- **Gas Cylinder:** Signifies compressed gases.
- **Corrosion:** Indicates materials that can corrode or destroy living tissues.
- **Exploding Bomb:** Represents explosives or self-reactive substances.
- **Environment:** Denotes environmental hazards, such as aquatic toxicity.



3. Learn Hazardous Materials Numbering System:

UN Number: A four-digit number assigned to hazardous materials for identification.

CAS Number: Chemical Abstracts Service Number, a unique identifier for chemical compounds.

4. Specific Symbols:

Radioactive Material Symbol: A tri-blade symbol indicating radioactive substances.

Biohazard Symbol: Signifies biological hazards, often found in medical or laboratory settings.

Skull and Crossbones: Indicates substances that are acutely toxic or fatal.

5. Recognize NFPA Diamond Labels:

- Red: Indicates flammability (0-4 scale).
- Yellow: Indicates reactivity/stability (0-4 scale).
- Blue: Indicates health hazards (0-4 scale).
- White: Provides special information, such as specific hazards or protective equipment requirements.

6. Use Resources:

Chemical Databases: Utilize online databases like ChemIDplus or PubChem to search for specific chemicals and their properties.

Safety Data Sheets (SDS): Access SDS for detailed information about hazardous materials used in workplaces.

7. Training and Education:

Training Programs: Attend Hazmat awareness and safety training sessions.

Visual Materials: Use posters, videos, and interactive apps for visual learning.

8. Common Places to Find Labels:

Household Products: Cleaning agents, paints, and pesticides often have hazard labels.

Workplaces: Manufacturing plants, laboratories, and construction sites use hazardous materials with proper labeling.

9. Emergency Response:

Color Codes: Emergency responders often use color codes to quickly identify hazardous materials in incidents.

10. Continuous Learning:

Stay Updated: Hazardous materials and their symbols may change, so staying informed is crucial.

Remember, recognizing hazardous materials labels and symbols is a skill that improves with practice and education. Encourage regular review and application to enhance awareness and safety.

Importance of communication with emergency responders about the presence of hazardous materials.

In the realm of emergency response, effective communication is paramount, especially when dealing with hazardous materials (Hazmat) incidents. When there's a presence of hazardous materials, clear and accurate communication with emergency responders can make the difference between a managed incident and a catastrophe. Here's why communicating this information is of utmost importance:

1. Ensures Proper Preparation:

- Emergency responders need specific details about the hazardous materials involved. This information helps them prepare the appropriate resources, equipment, and personnel to handle the situation safely and effectively.
- Adequate preparation prevents delays and ensures a swift response, crucial in containing Hazmat incidents before they escalate.

2. Protects First Responders:

- Knowledge of the hazardous materials on-site allows responders to wear the correct personal protective equipment (PPE). Wearing the right gear shields them from exposure and potential harm, enabling them to focus on managing the situation.
- Informed responders can implement decontamination procedures promptly, reducing the risk of secondary

contamination.

3. Prevents Uncontrolled Reactions:

- Certain hazardous materials can react violently with substances commonly found in emergency response environments, such as water. Accurate information helps responders prevent accidental reactions, avoiding explosions or toxic gas releases.
- Understanding the properties of the materials involved allows responders to strategize containment and neutralization techniques effectively.

4. Safeguards the Community:

- Timely and precise communication helps in establishing evacuation zones and implementing protective measures for nearby communities. This proactive approach safeguards residents and businesses from exposure to hazardous substances.
- Clear communication ensures that the community is well-informed about the situation, reducing panic and allowing for orderly evacuations if necessary.

5. Facilitates Coordination:

- Emergency responders often come from various agencies and departments. Accurate information about the hazardous materials fosters seamless coordination among these entities.
- Coordinated efforts prevent duplication of tasks, optimize resource allocation, and enhance the overall efficiency of the response operation.

6. Enables Informed Decision-Making:

- Detailed information allows emergency responders to make informed decisions regarding containment strategies, evacuation plans, and the need for specialized Hazmat teams.
- Informed decisions lead to a more targeted and effective response, minimizing the impact of the incident on both human lives and the environment.

In essence, communication is the linchpin of successful Hazmat incident management. Whether it's a small chemical spill or a large-scale industrial accident, sharing accurate information with emergency responders is the foundation upon which a safe and efficient response is built. This collaboration between those on-site and those coming to assist forms the backbone of community safety in the face of hazardous materials incidents.

Safe Evacuation Protocols^[7-4]

Evacuation procedures specific to Hazmat incidents, emphasizing the importance of designated evacuation routes.

In the event of a Hazmat incident, where hazardous materials pose risks to individuals and the environment, a well-organized and practiced evacuation plan is essential. Evacuation procedures specific to Hazmat incidents focus on the meticulous utilization of designated evacuation routes, ensuring the safety of all involved. Let's delve into the critical aspects of these procedures.



1. Immediate Alertness and Awareness:

- Recognition of Hazmat Signs: Understand the signs and warnings indicating a Hazmat incident. This knowledge is crucial for immediate response.
- Stay Informed: Remain updated about the type of hazardous materials involved, their risks, and recommended protective measures.



2. Designated Evacuation Routes:

- Pre-established Routes: Establish clear and marked evacuation routes well in advance, considering the location of hazardous materials and potential wind patterns.
- Primary and Secondary Routes: Designate primary routes for normal situations and secondary routes for contingencies like blocked pathways or changing wind directions.
- Avoiding Contaminated Areas: Routes should be planned to avoid contaminated or potentially contaminated areas, ensuring the safety of evacuees from chemical exposure.



3. Safe Points and Assembly Areas:

- Identify Safe Points: Determine safe points where individuals can gather temporarily before evacuation.
- Assembly Areas: Establish assembly areas at a safe distance from the incident site, ensuring no one remains in the immediate vicinity of the hazardous materials.



4. Clear Communication Protocols:

- Emergency Alerts: Employ various communication methods (alarms, notifications, loudspeakers) to alert individuals about the Hazmat incident and the need for evacuation.

- Designated Leaders: Appoint leaders responsible for guiding groups along designated routes. These leaders should be trained to handle emergencies.

5. Personal Protective Equipment (PPE) Considerations:

- PPE Usage: Emphasize the importance of wearing appropriate PPE, if available, during evacuation, especially if individuals need to pass through potentially contaminated areas.
- Assistance for Vulnerable Individuals: Provide assistance and designated personnel to help vulnerable individuals, ensuring they wear necessary protective gear.

6. Practice and Drills:

- Regular Drills: Conduct regular evacuation drills to familiarize occupants with the designated routes and assembly areas.
- Mock Scenarios: Simulate Hazmat incidents during drills, allowing participants to practice evacuation under different conditions.

7. Post-Evacuation Protocols:

- Medical Evaluation: Advise individuals to undergo medical evaluation post-evacuation, especially if they were in proximity to the Hazmat incident.
- Monitoring and Communication: Establish a system for monitoring the health of evacuees and maintaining communication with them to relay important updates.

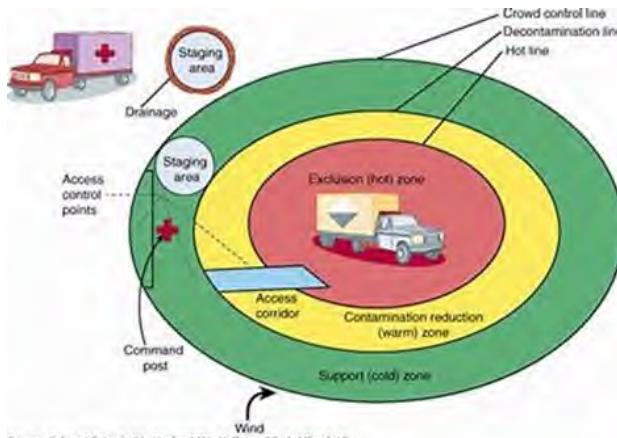
Conclusion:

In Hazmat incidents, the effectiveness of evacuation procedures hinges on meticulous planning, clear communication, and the strategic use of designated routes. By adhering to these protocols, individuals can evacuate safely, mitigating the risks associated with hazardous materials and ensuring the protection of lives and well-being.

Safe distances and containment measures to avoid exposure.

In the realm of hazardous materials (Hazmat) incidents, understanding safe distances and effective containment measures is paramount for personal safety and the well-being of the community. Hazmat incidents can involve various substances, each with unique properties and risks.

Here's a breakdown of safe distances and containment measures to avoid exposure:



Safe Distances:

Identifying the Danger Zone:

- The “danger zone” refers to the area immediately surrounding the Hazmat incident.
- Establish a perimeter based on the type of hazardous material involved, wind direction, and topography.
- Emergency responders use specialized tools and software to calculate safe distances based on the chemical properties of the substance.

Emergency Response Guidebook (ERG):

The ERG provides guidance on initial isolation and protective action distances.

It categorizes materials and offers recommendations for safe distances to protect people from potential harm.



Types of Distances:

Hot Zone: The immediate area where the Hazmat material has been released. Only properly equipped and trained personnel should enter this zone.

Warm Zone: A buffer zone where decontamination and initial medical treatment occur. Limited entry is allowed, with appropriate protective gear.



Cold Zone: The safe zone where the general public and emergency responders not directly involved in the operation can stay.



Containment Measures:

Primary Containment:

- Ensure that hazardous materials are stored in appropriate containers designed to prevent leaks and spills.
- Regular inspections and maintenance of storage facilities are essential to prevent accidental releases.

Secondary Containment:

- Use secondary containment systems, such as berms and trays, to contain potential spills from primary containers.
- Secondary containment is particularly crucial for bulk storage areas and chemical tanks.

Leak Control Devices:

- Install leak control devices, like leak detection sensors and automatic shut-off valves, to minimize the volume of spilled material in case of a breach.
- Properly maintained equipment can prevent larger spills and limit the extent of the Hazmat incident.

Chemical Absorbents and Neutralizers:

- Have absorbent materials and neutralizing agents on-site to contain and neutralize spills promptly.
- Quick action can prevent the spread of hazardous substances and minimize environmental damage.

Professional Hazmat Teams:

- Trained Hazmat response teams equipped with specialized tools and personal protective equipment can swiftly contain and mitigate Hazmat incidents.
- These teams are essential in managing large-scale incidents involving dangerous chemicals.

Facilitator's Note [1/2]

Understanding safe distances and containment measures is crucial for anyone living in proximity to industrial areas or transportation routes where Hazmat materials are present. Emphasize the importance of following official guidance, respecting evacuation orders, and reporting any suspicious substances to authorities promptly. Preparedness and awareness save lives in Hazmat incidents.

Basic First Aid for Hazmat Exposure [7-5]

Basic first aid techniques for minor Hazmat-related injuries, such as chemical splashes.

1. Assess the Situation:

Ensure your safety and wear appropriate personal protective equipment (PPE) like gloves and goggles before approaching the injured person.

Quickly evaluate the injured person and the extent of the chemical splash.

2. Remove Contaminated Clothing:

If the chemical has splashed onto the person's clothing, help them remove it immediately.

Cut or carefully remove the clothing to avoid spreading the chemical to other parts of the body.



3. Rinse with Water:

Immediately rinse the affected area with copious amounts of water. Use a safety shower or eyewash station if available.

Rinse continuously for at least 15–20 minutes. Ensure the water flushes away from unaffected areas to prevent contamination.

4. Avoid Neutralizing Agents:

Do not attempt to neutralize the chemical with other substances unless specific instructions are available. Mixing chemicals can cause dangerous reactions.

5. Protect Yourself:

While assisting the injured person, make sure you are not exposing yourself to the chemical. Use appropriate protective equipment and maintain a safe distance.

6. Seek Medical Attention:

Even if the chemical splash seems minor, it is crucial to seek medical attention. Some chemicals may cause delayed reactions or damage beneath the skin surface.

7. Prevent Shock:

Keep the person calm and encourage them to sit down.

If the person shows signs of shock (pale skin, rapid breathing, confusion), keep them lying down with their legs elevated slightly and cover them with a blanket.

8. Do Not Rub or Wipe:

Avoid rubbing or wiping the affected area, as it can worsen the injury by spreading the chemical.

9. Provide Reassurance:

Reassure the injured person while waiting for medical professionals. Keep them calm and provide comfort.

10. Documentation:

Document the type of chemical exposure, time, and any immediate first aid given. This information is crucial for medical professionals.

Significance of seeking medical help for serious exposures.

During our discussion on Hazmat awareness, it's crucial to understand that not all exposures to hazardous materials can be handled with simple first aid or by washing the affected area. Serious exposures can have severe consequences on your health, often leading to complications if not treated promptly and properly. Seeking immediate medical help in such situations is paramount. Here's why:

1. Early Intervention Saves Lives:

- Serious exposures can lead to adverse reactions and health complications, which might not be immediately visible.
- Medical professionals are trained to assess the extent of exposure, administer appropriate treatments, and monitor your condition, ensuring the best chance for a full recovery.

2. Specialized Treatment:

- Medical facilities have access to specialized treatments and antidotes designed to counteract the effects of specific hazardous materials.
- Prompt medical attention increases the efficacy of these treatments, reducing the severity of the exposure's impact on your health.

3. Preventing Further Damage:

- Certain hazardous substances can continue to harm your body even after initial exposure. Medical professionals can prevent further damage by administering appropriate medical interventions and monitoring your condition closely.

4. Comprehensive Assessment:

- Medical professionals can conduct comprehensive assessments to identify any internal or systemic damage caused by the exposure.
- They can also evaluate the need for additional medical tests and treatments, ensuring a thorough understanding of your health status.

5. Supportive Care:

- In cases of serious exposures, you may require supportive care such as intravenous fluids, oxygen therapy, or other medical interventions.
- Medical facilities are equipped to provide these supportive measures, stabilizing your condition and aiding the recovery process.

Team Building Activities

1. Hazmat Scenario Simulation:

- **Objective:** Enhance understanding of hazmat materials and emergency response procedures.
- **Activity:** Divide participants into teams and present them with different hazmat scenarios from the Emergency Response Guidebook. Each team must analyze the scenario, identify the hazardous materials involved, and propose a safe and effective emergency response plan. Encourage teams to discuss and debate their strategies. Afterward, teams can present their plans, fostering discussion and learning among participants.

2. Hazmat Identification Relay:

- **Objective:** Improve knowledge of hazmat labels and placards.
- **Activity:** Set up a relay race where participants must correctly identify hazmat labels and placards. Create stations with images of different labels and placards found in the Emergency Response Guidebook. Each team member runs to the station, identifies the hazmat symbol, and explains the associated risks and precautions. Correct answers allow the next team member to go. The team finishing first with all correct answers wins the relay.

3. Emergency Response Tabletop Exercise:

- **Objective:** Enhance teamwork and decision-making skills in hazmat incidents.
- **Activity:** Conduct a tabletop exercise based on a hazmat incident scenario outlined in the Emergency Response Guidebook. Provide each team with the scenario and related information. Teams must collaboratively discuss and develop an emergency response plan, considering evacuation routes, communication methods, and coordination with emergency services. After the exercise, teams present their plans, allowing participants to learn from different strategies.

4. Hazmat Awareness Quiz Competition:

- **Objective:** Reinforce knowledge of hazmat awareness concepts and information from the Emergency Response Guidebook.
- **Activity:** Organize a quiz competition with questions related to hazmat materials, symbols, emergency response procedures, and the content of the Emergency Response Guidebook. Divide participants into teams and ask a series of multiple-choice or

Facilitator's Note [2/2]

Emphasize to the participants that when dealing with hazardous materials, their safety and well-being are of utmost importance. Encourage them to recognize the signs of serious exposure, which can include difficulty breathing, severe skin reactions, persistent coughing, dizziness, or altered consciousness. Stress the importance of not underestimating the potential harm these exposures can cause and the critical need for seeking immediate medical attention. Encourage participants to share this information with their friends and family, promoting a culture of safety and awareness within their communities.

short-answer questions. Award points for correct answers and encourage discussions after each question to promote learning. The team with the highest score at the end of the quiz wins a prize, promoting healthy competition.

5. Hazmat Emergency Response Drill:

- **Objective:** Apply hazmat awareness knowledge in a practical emergency response scenario.
- **Activity:** Stage a simulated hazmat emergency using safe props and materials. Each team acts as an emergency response unit and must implement the procedures outlined in the Emergency Response Guidebook to mitigate the hazmat incident. Teams will coordinate evacuations, assess the situation, and decide on appropriate protective measures and first aid. After the drill, hold a debriefing session to discuss the effectiveness of each team's response and identify areas for improvement.

Core Values

Hazmat awareness during fires in the context of honing leadership skills for young adults is highly relevant.

- Firstly, understanding hazmat (hazardous materials) during fires is crucial for leaders, as it demonstrates the importance of **situational awareness**. Leaders must grasp the risks involved, enabling them to make informed decisions swiftly, which is a fundamental leadership skill.
- Secondly, addressing hazmat awareness fosters **empathy and compassion**, essential traits in leadership. Young leaders learn to prioritize the safety and well-being of others, showcasing their ability to lead with a strong sense of responsibility.
- Additionally, hazmat incidents require **effective communication and coordination** among team members. Leaders, especially young adults, develop their communication skills by conveying complex information clearly, ensuring everyone comprehends the situation and follows safety protocols.
- Furthermore, hazmat incidents demand **critical thinking and problem-solving skills**. Leaders need to assess the situation, evaluate risks, and devise strategic plans promptly. This challenges young adults to think on their feet, enhancing their decision-making abilities, a hallmark of effective leadership.
- Moreover, dealing with hazmat situations teaches

resilience and adaptability. Leaders must stay composed under pressure, demonstrating emotional intelligence. Young adults learn to manage stress and maintain a level-headed approach, qualities indispensable for leadership roles in any field.

In summary, discussing hazmat awareness during fires provides a multifaceted learning experience for young adults. It hones their situational awareness, communication, decision-making, and emotional intelligence, shaping them into well-rounded leaders capable of handling challenging situations with confidence and competence.

Chapter 7

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

Hazmat Awareness During Fire Incident

SUBJECT TITLE

GOAL

To equip the participants with essential knowledge and skills to recognize, respond to, and mitigate hazardous materials incident effectively and safely by increasing their awareness and understanding of hazardous materials, the program aims to enhance their ability to protect themselves and their communities during emergencies.

2

SUBJECT OBJECTIVES

- To raise awareness among young adults about different types of hazardous materials, their properties, and potential risks associated with exposure.
- To educate participants about common situations where hazardous materials are present, both in households and community environments.
- To enable participants to recognize hazardous materials labels, symbols, and placards commonly used in transportation and storage.
- To educate young adults about safe handling, storage, and disposal practices for household chemicals and hazardous materials.

3

LESSON PROPER

- UNDERSTANDING HAZARDOUS MATERIALS
 - Define hazardous materials and their various forms, such as chemicals, gases, or flammable substances.
 - Discuss common hazardous materials found in households and communities.



4

VARIOUS FORMS OF HAZMAT

- Chemicals:
- Gases:
- Flammable Substances
- Radioactive Materials
- Biological Hazards
- Explosives
- Oxidizers
- Toxic Substances



5

Common hazardous materials found in households and communities

- Cleaning Products:
- Pesticides:
- Paints and Solvents:
- Electronic Waste (E-waste):
- Medications:
- Household Gases:
- Motor Vehicle Products:
- Mercury-containing Items:
- Sharp Objects and Biohazardous Waste:



6

LESSON PROPER

- HAZMAT RISKS DURING FIRE**
 - Explain how hazardous materials can react or change when exposed to fire, posing additional risks.
 - Discuss the dangers of inhaling toxic fumes and the importance of proper protective equipment.

7

HAZMAT RISK DURING FIRE

- Combustion:**
- Explosion:**
- Toxic Fumes:**
- Corrosive Reactions:**
- Radiation Release:**
- Environmental Contamination:**



8

Immediate Health Effects

- Respiratory Distress**
- Irritation**
- Nausea and Dizziness**



9

Long-term Health Risks:

- Chronic Respiratory Issues**
- Organ Damage**



10

PROPER PPE



11

LESSON PROPER

- IDENTIFYING HAZARDOUS MATERIALS**
 - Provide guidance on recognizing hazardous materials labels and symbols.
 - Discuss the importance of communication with emergency responders about the presence of hazardous materials.



Recognizing Hazardous Materials Labels and Symbols:

- Understand Label Components:**
- Know Common Pictograms:**
- Learn Hazardous Materials Numbering System**
- Specific Symbols:**
- Recognize NFPA Diamond Labels:**
- Use Resources:**
 - Chemical Databases
 - Safety Data Sheets (SDS)

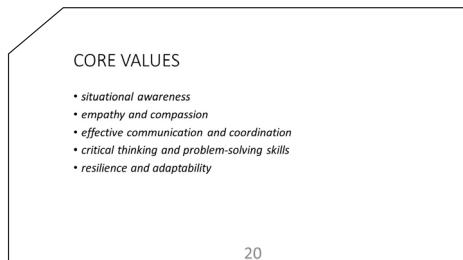
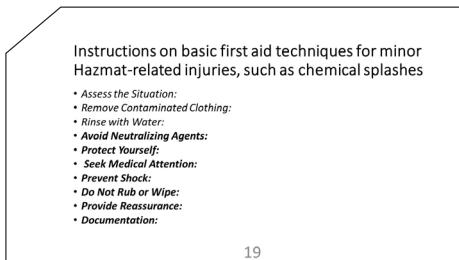
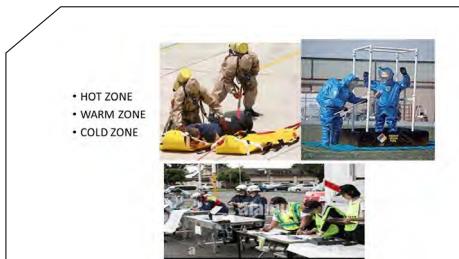
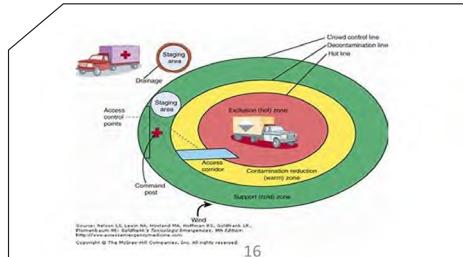
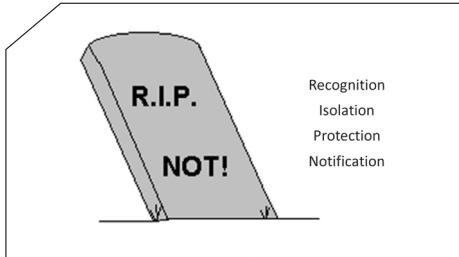


13

LESSON PROPER

- SAFE EVACUATION PROTOCOLS**
 - Outline evacuation procedures specific to Hazmat incidents, emphasizing the importance of designated evacuation routes.
 - Discuss safe distances and containment measures to avoid exposure.

14



Chapter 8

Basic Leadership Training through Fire Safety

Emergency Evacuations and the Social Herd Behavior Incident



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 8...

Goal

For participants to gain a better understanding of the reasons why evacuations go wrong and apply these lessons to create effective evacuation plans and properly implement them.

Objectives

By the end of the session, participants should be able to:

1. Understand herd mentality and how it affects evacuation plans
2. Identify the different circumstances that would warrant an evacuation
3. Identify the (3) different types of evacuation
4. Formulate proper evacuation procedures for a variety of campus emergencies
5. Execute proper technique when conducting mock/actual evacuations within the campus
6. Do no further harm

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Visual Examples
 - i. Building Layout Plan (Specific Area of Activity)
 - ii. Fire Evacuation Plan Sample
 - iii. Evacuation Checklist

B. Alternative Tools

1. PowerPoint Handouts
2. Visual Examples
 - i. Various Fire Fighting Tools
 - ii. Lighters
 - iii. Piece of Crumpled Scratch Paper
 - iv. Any useable means of making an example

Total Time of Delivery:

1 – 1.5 Hours

Cheat Sheet

Subject Overview

Purpose: This subject allows participants to understand the considerations involved in the process of planning for and executing evacuations. This subject puts evacuations into the context of how large groups exercise herd mentality in emergency situations and how drills, plans, and trainings are done to accommodate that. The subject prepares participants for the eventual planning of their evacuation procedures for their specific areas.

General Guidance: The topics in this subject are highly situational. Therefore, the lecturer/Facilitator must make sure to take note of the different considerations that may apply when delivering the lesson. He should use simple terms or make use of colloquial terms when applicable. He should enthusiastically deliver the lesson and encourage participants to ask questions in order to maintain their interest throughout.

Things to Consider: The participants are young adults, roughly around the age of 18 to 24. Care and effort must be considered when it comes to delivering the subject. In this subject, direct interaction with the participants is advised, such as moving around the lecture venue and making jokes. Sensitivity should be kept in mind in making or citing examples, especially in matters that might involve personal details. Stay on the topic and the schedule as much as possible.

Subject Outline

Visual Aids	Outline	Notes
1. PREPARATORY		
PPT COVER	1.1 Greet the participants and start by introducing your name and your teammates.	Begin the activity with a friendly greeting.
LG8-1 PPT S2-3	1.2 Engage the participants by asking them about their specific communities: <ul style="list-style-type: none">• Have you ever been involved in fire drills?• How did you treat them?• Have you ever been explicitly taught how to evacuate under different circumstances? 1.3 Present subject objectives.	Allow participants to share their experiences when conducting pre-planned drills vs actual evacuations. Refer to Goals and Subject Objectives

Cont.

Visual Aids	Outline	Notes
 LG8-1  PPT S4-9	<h2>2. MOTIVATION</h2> <p>2.1 When evacuations go wrong?</p> <p>Start by showing video clips/slides of 3 situations involving botched evacuations and their results.</p>	<p>Please narrate each scenario so that participants can understand the context.</p>
	<p>AVP Clip/Slides 1 – Panicked Evacuations</p> <p>Ask Participants what they think went wrong in each scenario.</p>	<p>Allow 1-2 answers, let participants speculate.</p>
 LG8-1  PPT S10-12	<h2>3. LESSON PROPER</h2> <p>3.1 Start by discussing the topic</p> <ul style="list-style-type: none"> <li>• What are emergency evacuations? <li>• Why emergencies go wrong <li>• The Importance of Planning 	<p>Talk about emergency evacuations. You can use the previous scenarios to anchor your discussion on why evacuations went wrong.</p>
 LG8-2  PPT S13-35	<p>3.2 Understanding How Evacuations Work</p> <ul style="list-style-type: none"> <li>• 3 Factors to Consider During Evacuations <ul style="list-style-type: none"> <li>A. Type of Emergency <li>B. Type of Evacuation <ul style="list-style-type: none"> <li>• Simultaneous <li>• Phased <li>• Silent <li>C. Number of People <li>• Warranting Circumstances <ul style="list-style-type: none"> <li>A. Fire and Severe Weather <li>B. Violent Incident <li>C. Earthquake and other Hazards 	<p>Discuss the following topic by relating the discussion to situations that may be found in your locality or the actual area of the activity.</p>
 LG8-3  PPT S36-46	<p>3.3 Planning your Evacuations</p> <ul style="list-style-type: none"> <li>• How to create an evacuation plan <li>Emergency Exits <li>Fire Alarms <li>Emergency Lights <li>Fire Extinguishers and hose Cabinets <li>Mustering Points <li>• Safety Officer/ Evacuation Staff <li>• Drills, Training and Review 	<p>Activity I - Sizing Up</p>
	<p>Activity II - Creating Evacuation Plans</p>	

Cheat Sheet

Visual Aids	Outline	Notes
LG8-4 PPT 47-52	3.4 General Procedures for Evacuations	
LG8-5 PPT 53-56	3.5 Understanding Herd Mentality and Impacts on Evacuations	
	Activity III – Drill Demonstration	

4. GENERALIZATION

PPT S54-55

- 4.1 Summarize the lesson and provide a generalization of the things the participants have to remember.

5. CLOSING EVALUATION

PPT S56-58

- 5.1 Review the objectives by asking the questions;
- Should all evacuations be treated similarly?
 - What are the different types of emergencies?
 - How should evacuations be done for:
Fire
Earthquake
Violent Incidents
 - How can an individual affect how evacuations are done?

5.2 Ask if there are questions or clarification

5.3 End the subject.

When Evacuations Go Wrong (Case studies from history) [8-1]



Above: Man looks at the body of his wife after the Philsports Stadium Stampede, February 4, 2006. Source: Google

Evacuation drills have become commonplace for schools, offices, condominiums, and even some residential communities. To the point that some employees have taken it for granted. Rowdy students even take the opportunity of a fire drill to skip class or catch up with friends from different courses. These seem routinary and unimportant to many, but what happens when evacuations go wrong?

No one thinks about it, but how would people react if the worst actually happened and there was a fire, massive earthquake, or even a violent incident at your building?

Classical examples like the Ozone disco, from abroad like the Itaewon crush, or more recently here at home during the (**Facilitator can insert a local event where evacuation went poorly**) show us the consequences of having inadequate evacuation plans in place. In all cases, the victims were in a state of panic and were not able to follow proper evacuation procedures, with disastrous results. Knowing how to get yourself and your family to safety during emergencies

Ozone Disco (how did it happen?) (AP1996)

The fire broke out just before midnight on March 18, 1996. It was estimated that there were around 350 patrons and 40 club employees inside, though it had been approved for occupancy for only 35 (**overcrowding and thus panic**). Reports later found that the club's emergency exit was blocked by a new building next door and that there needed to be a proper fire exit installed (**lack of sufficient exits**).

It was also reported that the exit had been locked from the outside by the club's security guards, who had thought that a riot had taken place (**lack of communication, no evacuation protocol**). The final death toll was 162, with a further 95 injured.

Seoul Halloween Crowd Crush – Itaewon Crush (*how did it happen?* (Jeong-Won 2022))

Itaewon district, Seoul, is known for its nightlife gatherings, restaurants, and bars. The street where the crash occurred is about 45 meters long and 3.2 meters wide. It had an iron temporary wall that reduced its width. Authorities had been concerned since, at the latest, 2020 about the crowding issue but did not act on these concerns. (**complacency**)

On the evening of October 29, 2022, approximately 100,000 people, mostly in their teens and twenties, attended Halloween festivities in the area. The event happened right after the COVID-19 lockdowns, so people were eager to go out and have fun. (**no prior planning**)

The crush started when a group of men began pushing others until people started falling over; however, since most stores were already closed, the fences were closed up, making the passageways narrower. (**inadequate exits**) The first call for help was made at 6:34 p.m., but callers still did not know what actually happened, only that people were crying and screaming. (**confusion and panic**) The first E.M.S. teams arrived at 10:15 p.m. (**delayed response**). In total, around 850 EMS personnel responded but were unable to reach the victims because of a lack of a way to disperse the crowds (**no protocols**) properly, only being able to reach victims by 12:10 a.m. (**difficulty with access**) what they found were bodies stacked on top of each other 4–5 people deep, with the official death toll at 157, mostly students.

TRIVIA

Confusion Kills. Did you know in total it took a total of 106 calls to E.M.S. before authorities were fully aware of the scale of the Itaewon crush? It also took 5 ½ hours before the first responders were able to reach them. (Whan 2022)

Facilitator's Note [1/8]

The Facilitator may narrate these case studies to participants for the context of each scenario to give them a better background of it. (try to speak as if telling a story; you can even talk in first person perspective as if you were there when it happened) Further, engage participants by trying to ask them what went wrong as a prelude to our subject (Note some images may be sensitive; be sure to inform your audience)

3.1 Emergency Evacuations [8-1]

Emergency Evacuations

It is defined as the urgent and immediate egress of people away from an area that contains an imminent threat, an ongoing threat, or hazard to lives and property to a safer location ([ready.gov](#)) with the primary goal of ensuring their wellbeing.



The types of evacuations can differ depending on the threat; they can be small-scale (i.e., a building in the event of a fire) or large-scale (i.e., an entire campus or town in the event of a natural disaster or violence.)

Why Evacuations Go Wrong



I. Does not Account for Multiple Scenarios

People Did Not Know What to Do

The common practice for making evacuation plans is to refer to a generic template where organizers fill in the blanks. Although this is better than not having an emergency plan at all, generic templates do not account for particular circumstances that may be found in your areas.

Some areas don't have plans at all.



II. Poor Communication about Roles

Did not Know Who is in Charge

During Emergencies, communication breaks down, and people start assuming who is in charge of the evacuation. This is dangerous because the wrong people begin giving directions or when multiple people give different (and often conflicting) instructions.

This is one of the major factors which causes panic.



III. Not Identifying the Real Risks

Did not Anticipate what Happened

Even when you have made your evacuation plans, these must be tested against the real risk that may be encountered in your area, like doors that are typically locked or access ways that are blocked or used for storage.

Having drills that are always scripted to succeed does not help improve plans.

IV. Not Practiced Beforehand

We Have Plans, but We Never Tried them out.

Evacuation plans must be tested regularly in realistic scenarios. Practicing and going through the motions is how you find and correct mistakes.

Practicing drills with occupants will also allow you to find any vulnerable members who are unable to evacuate quickly.



The Importance of Planning and Foresight

Having emergency evacuation plans in place ahead of time is

important because it makes sure that everyone knows what to do and where to go in case of an emergency. Emergency evacuation routes are clearly marked, exits are identified with meeting points for everyone to regroup, and people are designated to be in charge of the evacuation. (Visit-US.com)

Planning will also **provide people with the most effective tools to evacuate a building safely. Additionally, they must be able to do** so calmly, as this will prevent disorganization and panic in such situations. (redcross.org)

3.2 Factors to Consider During an Evacuation [8-2]

Not all emergencies warrant a simultaneous evacuation.

The way you move people to safety depends mainly on:

- (1) the Type of Emergency,
- (2) Type of Evacuation Needed,
- (3) The population needed to be evacuated.

II. Types of Emergency

Not all situations will require a total evacuation.

An evacuation tends to cause alarm and panic, especially if occupants need to be correctly informed of the reason behind the evacuation. We have a measured response for each probable scenario.



Before evacuating, make sure that you carefully assess the need to evacuate.

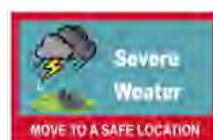


II. Types of Evacuation

Since not all scenarios that would need an evacuation are the same, so, for our plans to be applicable, they need to be flexible. Keeping this in mind, there are three main categories of evacuations. (Training Express 2023)

We can classify evacuations into **three main types:**

- 1.) Simultaneous Evacuation
- 2.) Phased Evacuation
- 3.) Silent Evacuation



1. Simultaneous Evacuation

It is the most common type of evacuation done. Involves getting everyone out of the building to the exit at the same time. But remember that it requires the **MOST** human resources to execute, and it is very easy for crowds of people

to grow out of control in emergencies, making evacuation unsafe.

How do you perform a Simultaneous Evacuation?

Upon identifying a scenario where a simultaneous evacuation is needed and the fire alarm or other signaling device is triggered.

1. Alert 911 and call for help. Instruct them on the location and nature of the incident
2. A safety marshal or other evacuation staff should open emergency exits and lead people to safety using the pre-identified evacuation routes toward the mustering points.
3. Safety officers should sweep evacuated areas to make sure no one has been left behind.
4. Evacuation staff need to be visible and take control of the situation; this lessens the chance of crowding and panic
5. Secure all exits to prevent people from going back in
6. A head Count is done after reaching the mustering point

2. Phased evacuation

Occupants are evacuated in sections according to priority and level of danger, and is done in areas where occupants are unable to move freely, such as in a multi-story classroom building.

Phased Evacuations are done either horizontally or vertically.

Vertical Phased Evacuation

In vertical evacuation, people evacuate stairways and requires everyone who is able to evacuate to leave as quickly as possible. Depending on the number of occupants, this evacuation is done floor by floor, where the floor where the incident occurred will be the first to evacuate. Since fires spread horizontally as well as vertically upwards, the possibility of people being trapped on upper floors is high. This is why occupants of the floor immediately above are second to evacuate

This is done in **crowded buildings** to prevent panic and pushing near stairways.



How do you perform a Vertical Phased Evacuation?

Upon identifying a scenario where a phased evacuation is needed and the fire alarm or other signaling device is triggered.

1. Alert 911 and call for help. Report the location and nature of the incident.
2. Communicate with other evacuation staff on the location of the fire incident.
3. A safety marshal or other evacuation staff should open emergency exits on the affected floor and lead people to safety using the pre-identified evacuation routes toward the mustering points.
4. The same is done for the floor immediately above and below the fire and should be managed by evacuation staff to prevent overcrowding.
5. Safety officers should sweep evacuated areas to make sure no one has been left behind.
6. Evacuation staff need to be visible and take control of the situation. This lessens the chance of crowding and panic
7. Secure all exits to prevent people from going back in
8. A head count is done after reaching the mustering point

Horizontal Phased Evacuation

Horizontal evacuation is evacuating to a “safer” location on the same floor. This place of refuge is generally found in an area that is resistant to fire or protected from collapse in case of severe weather. These areas can provide a safe location until help arrives or until a total evacuation is necessary.

This is done for **large campuses** where not everyone needs to evacuate and where a simultaneous evacuation of occupants in all buildings will overcrowd access.

The same evacuation can also be used for communities near natural hazards, such as an overflowing river.



How do you perform a Horizontal Phased Evacuation?

Upon identifying a scenario where a phased evacuation is needed and the fire alarm or other signaling device is triggered.

1. Alert 911 and call for help. Inform them of the location and nature of the incident
2. Communicate with other evacuation staff on the location of the incident.
3. A safety marshal or other evacuation staff should open emergency exits of affected areas and lead people to safety using the pre-identified evacuation routes toward the mustering points or places of refuge.
4. Safety officers should sweep evacuated areas to make sure no one has been left behind.
5. Evacuation staff need to be visible and take control of the situation. This lessens the chance of crowding and panic

Facilitator's Note [2/8]

The Facilitator should give scenarios using these types of evacuations that are relatable to the target audience.



- 6. Secure all exits to prevent people from going back in
- 7. A head Count is done after reaching the mustering point

3. Silent Evacuation

A silent evacuation or a silent alarm evacuation is unlike the usual alarm. During this evacuation, most people are not made aware that there is an ongoing evacuation. Instead, the warning is disseminated as a coded alert that only staff are made aware of.

DONE in areas where there is a likelihood of mass panic and movement that could lead to more harm.

For example, A bomb threat scenario or a mass shooting/violent incident

How do you perform a Silent Alarm Evacuation?

Upon identifying a scenario where a phased evacuation is needed, **NOT ACTIVATE THE FIRE ALARM.**

1. Communicate with other members of the evacuation staff by using one of the previously assigned coded signals (this is dependent on your previously planned signals)
2. Alert 911 and call for help. Inform them of the location and nature of the incident
3. Members of the evacuations staff should open
4. A safety marshal or other evacuation staff should proceed with the evacuation by discreetly directing people to move through safe exits and towards mustering points
5. Safety officers should sweep evacuated areas to make sure no one has been left behind.
6. Evacuation staff need to be visible and take control of the situation. This lessens the chance of crowding and panic
7. Secure all exits to prevent people from going back in
8. A head Count is done after reaching the mustering point

Why Silent Evacuations?

In places where there are large numbers of people to be evacuated, a sudden general alarm might cause panic, leading to a rush toward exits. Rushing exits can have many consequences, such as pushing or crushing of individuals when single exits become overcrowded or fall when people start pushing down stairways. Having a silent alarm allows trained staff to manage evacuations in phases rather than all at once.

The second reason for silent evacuations is when the alarm

might cause people to run toward the threat instead of away from it inadvertently. This is true when the threat is not fire-related but rather violence or terrorism.

III. People Involved

When planning evacuations, you need to take into account the number of people as well as their demographic. Are they young and able to move quickly? Or are they old and need assistance? Are they restless and easy to scare, or are they easily managed? All these factors will contribute to how you will plan your evacuations.

Warranting Circumstances for Evacuations

The type of evacuation performed should depend on the type of emergency being encountered. While the majority of evacuation drills revolve around fire and earthquakes, other situations may require evacuation as well.

In the Event of a Fire

During a fire, firefighting is always secondary to fire safety. Upon discovering a fire, a simultaneous or phased evacuation should be performed depending on the number of occupants and the availability of exits.

During evacuations, take into account the occupants of the building. Prioritize evacuation of people who are able to exit on their own.



Severe Weather

Severe weather, like storms or flooding, can also put people at risk; in these cases, a phased evacuation should be performed, prioritizing those immediately in danger. Pre-identified areas of refuge should be prepared to receive the onrush of people until help arrives.



Violent Incidents or Terrorism

In situations where there is a present danger and a simultaneous evacuation will do more harm than good, silent evacuations should be performed. In these scenarios, evacuation staff need to know the location of the threat to move people away instead of towards the danger.



Prepare to **AVOID**, **DENY** and **DEFEND**

AVOID the danger by quickly putting DISTANCE and BARRIERS between you and the danger

DENY access to the attacker by locking doors, turning off lights

Prepare to **DEFEND** yourself and be committed to your actions.

Earthquakes and other Hazards

During these scenarios, a simultaneous evacuation should be done, prioritizing those at most risk and in the following order:



AMBULATORY

NON-AMBULATORY

FIXED IN PLACE

EXIT ROUTES SHOULD BE WELL-LIT AND MARKED, AND BE PREPARED FOR AFTERSHOCKS

A member of the team should be designated to guide all **AMBULATORY** students to an area of refuge.

3.3 Planning your Evacuations [8-3]

Facilitator's Note [3/8]

Activity I. – Sizing Up: This activity will allow participants to conduct a quick assessment of their current area (please refer to the activates section) (10 minutes)

Step 1: Create your Evacuation Strategy

Planners need to consider how they will conduct evacuations for different scenarios based on your risk assessment of hazards and vulnerabilities within your area. This will dictate what procedures will be applicable.

What Hazards do I have?

Stored fuels, electrical lines, limited exits. Planners need to know the risk factors in their areas and create evacuation plans taking this into account.

Availability of Fire Protection Equipment

Assess the availability and location of fire exits, fire alarms, fire extinguishers, fire hose cabinets, and other fire protection equipment.

Step 2: Identification of Escape Routes and Mustering Points

Planners need to identify available escape routes and mustering points. The plan should be laid out on a fire evacuation plan indicating emergency exits and locations of fire alarms and extinguishers. In addition, the evacuation strategy should also be listed. This fire evacuation plan should be posted along corridors and in enclosed rooms. **There should always be more than one exit route available.**

Mustering Points

When designating mustering points, planners should consider accessways for responding to emergency vehicles. Mustering points are located in an open space away from trees, powerlines, or other structures and away from access roads.



Access Roads

Part of planning for evacuations is ensuring that access ways remain open for responding emergency vehicles. The planner should designate entry and exit points that are available to fire trucks and ambulances. These should be cleared of cars and people.

How to designate a “Fire Lane”

Fire lanes need to be located not farther than 150 feet away from a building and have a width of 20 feet and a vertical clearance of 14 feet. These dimensions will allow fire trucks and ambulances to get close to the scene. (*American Legal 2018*)

Fire lanes should also have access to an ingress and egress path. This will prevent the need for maneuvering in and out, which slows down response.

Step 3: Form the Team

As part of the planning process, a team should be created to take charge of practicing and reviewing existing evacuation plans. Although other individuals may assist during evacuations, team members will be given definite roles to ensure that all critical tasks are performed during actual emergencies.

Who will manage the evacuation?

In these cases, it will be up to the organization to create the team for evacuations. The team should have a Safety officer acting as a team leader, with three or more members depending on the size of the area covered.

The Evacuation Team Leader is responsible for:

- Conducting routine evacuation drills

Facilitator's Note [4/8]

The Facilitator may share the experiences of firefighters when responding to a fire where heavy traffic and crowds hampered the response time.

- Inspecting exit routes and emergency exits
- Check fire alarms and other signaling devices
- Take charge of evacuations during actual emergencies
- Conducts headcount of occupants at the mustering points

The Evacuation Team Members are responsible for the following:

- Inspecting assigned areas for evacuation risks
- Coordinate with team leader and other members during emergencies
- Assist in facilitating evacuation drills
- Conduct a sweep of evacuated areas during emergencies
- Guides people to designated exits
- Creates and maintains accessways for responding to emergency vehicles

Facilitator's Note [5/8]

Please note that although specific individuals will be designated as members of the evacuation team, any individual can assist in the evacuation procedures during emergencies. The members are selected to ensure that all tasks are completed before, during, and after an evacuation.

Step 4: Positioning Fire Protection Equipment

During this stage, planners need to assess the area for required fire protection equipment such as smoke and fire alarms, fire extinguishers, emergency lights, fire hose cabinets, and signages.

Facilitator's Note [6/8]

The Facilitator should recap the different fire protection equipment and their recommended quantity and distribution. Participants will be able to create fire protection plans as an output and submit them to their organizations for adoption at a later date.

Step 5: Schedule Drills, Training, and Review of Plans

Evacuation drills should be done at least every six months to allow occupants to practice evacuation procedures. Planners should create a schedule of drills and training. Likewise, emergency evacuation plans need to be reviewed every year.

3.4 Reacting to Fire Emergencies [8-4]

Facilitator's Note [7/8]

Activity II. – Creating Evacuation Plans: This activity will allow participants to formulate a fire evacuation plan for their area (10 minutes)

Before a Fire

In the event of a fire or other emergency, staying calm and being able to make correct decisions is what will save people's lives. The importance of planning and being prepared cannot be emphasized more.

Plan Ahead – Know Your Exits

In an emergency, you only have a little time to take in your surroundings. This is why familiarizing yourself with the general layout and identifying the emergency exits should be one of your priorities when entering a building.

The heat, smoke, and chaos associated with most emergencies can quickly leave you disoriented, so you should know where to go ahead of time. In addition, it's

common for most people to try to exit the same way they came in during emergencies. This creates a potentially lethal bottleneck situation.



Check your Fire Evacuation Plan

Most public buildings will have an emergency evacuation plan posted on the walls. It is the most accessible source of safety information for a specific location. The plan provides people with a layout of the floor they are on, as well as the critical exits and any evacuation procedures. It commonly also indicates the location of fire extinguishers and first aid kits as well as the phone numbers to call in the event of an emergency.

It is commonly posted along corridors and near stairway landings.

What do I need to look for?

- E - Exits.** Find the nearest emergency exit from your approximate location.
- E - Extinguishers.** Pinpoint fire extinguishers or other available fire safety equipment.
- A - Assembly Points.** Know where you are going when exiting.

During a Fire

Similar to how fires spread quickly, when discovering a fire, you need to remember **R.A.C.E.** (sc.edu) (fireblockplans.com)

R – Remove those in Danger

Pause. Breath. Think -The first thing you should do when discovering a fire is to take a deep breath and not panic. Next is to let other people know that there is a fire and get them out. Do not risk extinguishing the fire before removing people from the area.

A – Alarm, Alert 911

Pull the fire alarm and alert authorities by calling 911. Remember that an early call will mean an early response. This is why knowing the numbers for your local fire department is essential.

When reporting a fire, remember to:

- Say what is burning
- Tell them where. Location of the fire, including landmarks
- How many are injured or tapped (if any)
- And your name and phone number to contact you.

Important: Do not assume that someone else has made the call for you. If unsure, make the call yourself.

C – Confine

Move away from the fire and smoke. Limit the spread of the fire by closing doors and windows behind you if time permits. Doing this can give others more time to evacuate.

E – Extinguish or Evacuate

Never ignore a fire alarm. If you hear one, you should alert other people around you and go to the nearest emergency exit and get to safety. If there is smoke, stay low to the ground and crawl, or use a damp cloth over your mouth to help you breathe in a smoke-filled room. Never open doors that are warm to the touch because there may be fire on the other side.

Suppose you have been trained and have the means to do so. Attempt to extinguish the fire if it is still small enough.

Remember: Assess your fire. If it's too hot to bear, evacuate.

After Evacuating

Do not attempt to go Back.

No amount of money is worth a life. Fires can change quickly within a matter of minutes. If you were able to get out, stay out

Check Yourself and Others

After evacuating, do a quick check to see if you have any injuries, you might not have noticed. In an emergency, adrenaline can dull the pain from cuts and bruises.

What to Do in Case of An Earthquake



Herd Mentality and How It Impacts Evacuations [8-5]

What is Herd Mentality?

Herd mentality, or **mob mentality**, is the tendency of the people in a group to think and behave as a group rather than as individuals. When this happens, individuals can be influenced by a larger group or the other way around. A **single individual** that seems “**knowledgeable**” can make others think the same.

You can see this happen every day when you look, get on the internet, watch reels on Facebook and TikTok, line up for your “favorite” brand, or even wear a specific color every six years. Group mentality can affect anyone, whether in your class, neighborhood, or nation.

For example, imagine sitting in your office on a bright sunny day on a hill when suddenly a few people start screaming that a tsunami is approaching. Without any questions, more and more people start joining in, calling the same thing. A few minutes pass, and the entire area is in a state of panic. This example seems absurd, but it happened in the province of Ablay in December 2006 after Typhoon Reming hit.



How Herd Mentality Can Impact Evacuation

The same behavior happens during emergency evacuations. People will often trust others to guide them when they need to know where the nearest exit is. This behavior may lead to safety under a knowledgeable leader, but it can also lead people to dead ends.

Facilitator's Note [8/8]

Activity III. – Drill Demonstration:
This activity will allow participants to evaluate available fire protection equipment (please refer to the activates section) (20 minutes)

Activities:

I. Sizing Up (10 minutes)

Instructions:

This activity allows participants to assess their current location and identify hazards, available exits, and fire protection equipment. For this activity, the entire class will work together to create an assessment of their area.

For this activity, you will need a floor plan of the building as well as a spot map of the surrounding area.

1. Allow the class to divide themselves into teams and conduct an assessment using the building floorplan and spot map of the immediate area. (5 minutes)
2. Guide participants when assessing their areas for the following:
 - Number of occupants
 - Available Exits

418 MODULE 5 Basic Leadership Training through Fire Safety

- Location of Fire Alarms, Smoke Alarms, Fire Extinguisher, Emergency Lights
 - Fire Hose Cabinets, Posted Evacuation Plans
 - Open areas suitable for mustering point
 - Areas at risk
 - Safe areas
3. After assessments, allow participants to discuss their observations with the class (5 Minutes)

II. Creating Evacuation Plans

This activity will allow participants to create a fire evacuation plan for their area based on their assessment and the recent discussion. You will need pieces of paper, pencils, pens, and a floor plan of the building being occupied.

- 1.) Task participants to create an emergency evacuation plan with:
 - a. Evacuation Strategy for Fire, Earthquakes, Violent Incidents, other Hazards
 - b. Create a fire evacuation plan indicating exits, fire alarms, extinguishers, and mustering points
 - c. Designate an Evacuation Team
 - d. Provide a list of needed fire protection equipment and their proposed locations
 - e. Schedule of drills and training
- 2.) Allow them to present their plan. Provide recommendations and/or alterations

III. Drill Demonstration

This activity will allow participants to apply evacuation techniques during an actual emergency. You will need a smoke machine/fumigator, a smoke alarm, and 5-10 volunteers.

Instructions:

1. Position the volunteers in separate closed rooms along the pre-determined exit path. They will serve as occupants who are unaware of the emergency and will need to be evacuated.
2. While the last topic is being discussed, a facilitator will use the smoke machine to fill the primary exit path with smoke.
3. Once filled with smoke, a facilitator will trip one of the smoke detectors or fire alarms to initiate an evacuation.
4. Allow participants to respond to the emerging situation. Observe for:

Proper application of R.A.C.E.:

- a. Alerting people in immediate danger and activating fire alarms
- b. Calling 911/B.F.P. hotline (note: an actual call and should be answered by the B.F.P.)
- c. Checking of rooms before exiting
- d. Confining the fire by closing doors
- e. Using correct evacuation methods such as low crawls
- f. Proceeding to mustering points and doing a head count.

5. After firefighters arrive on the scene (5 minutes after the call), ask participants for the number of occupants and number of individuals left inside the building.
6. Share Observations during the activity.

Footnotes and References

Visit-us.com, Emergency Evacuation Plans, why they are so Important.

<https://visit-us.com/emergency-evacuation-plans-why-theyre-so-important/>

Ready.gov, Make a Plan

<https://www.ready.gov/evacuation>

Redcross.org, Make A Plan

<https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html>

Lim Jeong-Won 2022, Death Toll from Itaewon Crush Rises to 158

<https://koreajoongangdaily.joins.com/2022/11/14/national/socialAffairs/Korea-death-toll-Itaewon/20221114100946366.html>

Associated Press 1996, Disco in Manila for 35, held 400

<https://www.nytimes.com/1996/03/20/world/disco-in-manila-for-35-people-held-400.html>

Dong-Hwan 2022, How Itaewon Turned into an Epicenter of Tragedy

https://www.koreatimes.co.kr/www/nation/2022/10/281_338862.html

Training Express 2023, Fire Safety Evacuation Plans for Business

<https://trainingexpress.org.uk/fire-evacuation-plan/>

Fire Safety Advice Center 2022, Fire Emergency Evacuation Plan and the Fire Procedure

<https://www.firesafe.org.uk/fire-emergency-evacuation-plan-or-fire-procedure/>

American Legal 2018, Chapter 91: Fire Prevention Regulations

https://codelibrary.amlegal.com/codes/wakevillagetx/latest/wakevillage_tx/o-o-o-2247

Emergencyresponse.org 2022, Why is it important to have an evacuation plan in place

<https://emergencyresponse.org.ng/2022/11/01/why-is-it-important-to-have-an-evacuation-plan-in-place/>

Chapter 8

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

[Cover Page]

Emergency Evacuations and the Social Herd Behavior

[Fire Station]
[Address]
[Hotline]

gency Evacuations

Subject Goal

To give a better **understanding** of the reasons why evacuations go wrong and apply these lessons to create effective evacuation plans and properly implement them.

2

gency Evacuations

Subject Objectives

- ✓ Identify the different circumstances which warrant evacuation
- ✓ Formulate proper evacuation procedures for a variety of emergencies
- ✓ Execute proper technique when EVACUATING CROWDS
- ✓ Formulate effective emergency evacuation plans
- ✓ Do no further harm

3

gency Evacuations

When Evacuations Go Wrong

4

gency Evacuations

OZONE DISCO FIRE
18 MARCH 1996

AT LEAST 162 PEOPLE DEAD
MORE THAN 95 INJURED



5

gency Evacuations

ITAEWON HALLOWEEN CRUSH
29 OCTOBER 2022

AT LEAST 156 PEOPLE DEAD
MORE THAN 170 INJURED



6

Emergency Evacuations

What do these scenarios have in common?

7

Emergency Evacuations

Panic!**Confusion**

Lack of evacuation plans

8

Emergency Evacuations

Trivia:

Confusion Kills. Did you know in total it took a total of **106** calls to E.M.S. before authorities were fully aware of the scale of the Itaewon crush?

9

Emergency Evacuations

Emergency Evacuations

It is defined as the **urgent** and **immediate** egress of people away from an area of danger, to a safer location.



10

Emergency Evacuations

Why Evacuations Go Wrong?

When they go wrong people will often say:

We Did Not Know What to Do

We Did not Know Who is in Charge

We Did not Anticipate what Happened

We Have Plans, but We Never Tried them out.

11



Emergency Evacuations

The Importance of Planning and Foresight

It ensures that everyone knows what to do and where to go in case of an emergency.

Planning will also provide people with the most effective tools to evaluate a building safely.



12

Emergency Evacuations

How can We Make Effective Evacuation Plans?

13

Emergency Evacuations

Creating Effective Evacuation Strategies

The Type of **Emergency**,

Three key factors to consider during an evacuation

Type of **Evacuation** Needed,

The **population** needed to be evacuated.

14

422 MODULE 5 Basic Leadership Training through Fire Safety

Emergency Evacuations

Types of Emergency

Not all situations will require a total evacuation.

An evacuation tends to cause alarm and panic.

Before evacuating, make sure that you carefully assess the need to evacuate.



15

Emergency Evacuations

Types of Evacuation



SIMULTANEOUS Evacuation

PHASED Evacuation

SILENT Evacuation

16

Emergency Evacuations

Types of Evacuations

Simultaneous Evacuations

This is the most common type of evacuation done involves getting everyone out of the building at the same time

Requires the most human resources to execute

Easy for crowds to grow out of control in emergencies

17

Emergency Evacuations

Types of Evacuations

How to perform simultaneous Evacuations

Upon identifying a scenario where a simultaneous evacuation is needed and the fire alarm or other signaling device is triggered.

Alarm, Alert 911 and call for help.
Open emergency exits and lead people to safety
Sweep evacuation areas
Be visible and take control of the situation
Secure all exits
Do a head count



18

Emergency Evacuations

Types of Evacuations

How do you call 911?

19

A - Alert 911

Pull the fire alarm and alert authorities by calling 911.

When reporting a fire, remember to:

Say what is burning

Tell them where Location of the fire, including landmarks

How many are injured or trapped (if any)

And your name and phone number to contact you.



Do not assume that someone else has made the call for you. If unsure, make the call yourself.

[Insert Local BFP Hotline Number, 911]

20

Emergency Evacuations

Types of Evacuations

Phased Evacuations

Occupants are evacuated in sections

Done in areas where occupants are unable to move freely such as in a multi-story building

Done either Horizontally, or Vertically

21

Emergency Evacuations

Types of Evacuations

Vertical Phased Evacuations

The first choice during a fire emergency in a high occupant load multi-story building

This is done to stagger evacuation and avoid congesting exits leading to panic

Those at most risk evacuate first



22

Emergency Evacuations
Types of Evacuations

How to perform Vertical Phased Evacuations 

Upon identifying a scenario where a simultaneous evacuation is needed and the fire alarm or other signaling device is triggered.

Alarm, Alert 911 and call for help.

- Communicate with other evacuation staff, plan the evacuation
- Open emergency exits and **lead people to safety**
- Sweep** evacuated areas
- Be visible** and take control of the situation
- Secure all exits**
- Do a head count



23

Emergency Evacuations
Types of Evacuations

Horizontal Phased Evacuations

This is done when a full evacuation is not possible

This can be done during severe weather where parts of a building may be damaged

Occupants are moved to a "place of refuge"



24

Emergency Evacuations
Types of Evacuations

How to perform Horizontal Phased Evacuations 

Upon identifying a scenario where a simultaneous evacuation is needed and the fire alarm or other signaling device is triggered.

Alarm, Alert 911 and call for help.

- Communicate with other evacuation staff, plan the evacuation
- Open emergency exits and **lead people to safety**
- Sweep** evacuated areas
- Be visible** and take control of the situation
- Secure all exits**
- Do a head count



25

Emergency Evacuations
Types of Evacuations

What is a place of refuge?

26

Emergency Evacuations
Types of Evacuations

Silent Alarm Evacuations



Most people are not made aware of an ongoing evacuation

Done in situations where there is a high chance of noise or mass movement could lead to more harm

A silent alert/ coded alert is given that only staff are able to understand

Example: A bomb threat scenario

27

Emergency Evacuations
Types of Evacuations

Why Silent Evacuations?

28

Emergency Evacuations
Types of Evacuations

How to perform Silent Alarm Evacuations 

Upon identifying a scenario where a silent alarm evacuation is needed, **DO NOT TRIGGER THE FIRE ALARM**

Communicate with other staff (**Send the signal!**)

Alert 911 and call for help

Discreetly **lead people to safety**

- Sweep** evacuated areas
- Be visible** and take control of the situation
- Secure all exits**
- Do a head count



29

Emergency Evacuations

People Involved

Planners need to take into account the number of occupants and their demographics when planning an evacuation



30

424 MODULE 5 Basic Leadership Training through Fire Safety

Emergency Evacuations

Warranting Circumstances

In the Event of a FIRE

Firefighting is always **secondary** to fire safety.

simultaneous or phased evacuation

depending on the number of occupants and the availability of exits.



Prioritize evacuation of people who are able to exit on their own.

31

Emergency Evacuations

Warranting Circumstances

In the Event of a Severe Weather Sudden Storms and Flooding

Phased evacuation should be performed, prioritizing those immediately in danger.



Pre-identified areas of refuge should be prepared to receive the onrush of people until help arrives.

32

Emergency Evacuations

Warranting Circumstances

In the Event of a Violent Incidents Bomb threats, terrorism, riots

Silent Alarm Evacuation should be done prioritizing those in MOST danger first.



CALL 911, Ask for Help

Avoid the danger, quickly put Distance and Barriers between you and the danger

Deny access to the attacker by Locking doors and turning off lights

Prepare to **Defend** yourself, be committed in your actions

33

Emergency Evacuations

Warranting Circumstances

In the Event of a Earthquakes and other Hazards Chemical leaks, Exposure to toxic substances

Simultaneous Evacuation prioritizing those in the most danger



Exit Routes should be **well lit** and marked, Be prepared for aftershocks – and ICS

34

Emergency Evacuations

Activity I – Sizing Up

35

Emergency Evacuations

Planning you Evacuations

Step 1 – Create your Evacuation Strategy

how will evacuations be conducted for different scenarios based on your risk assessment of hazards and vulnerabilities



What Hazards do I have?

Availability of Fire Protection Equipment

36

Emergency Evacuations

Planning you Evacuations

Step 2 – Identify Escape Routes and Assembly Points

Create a fire evacuation plan indicating emergency exits and locations of fire alarms and extinguishers. In addition, the evacuation strategy should also be listed.

There should always be more than one exit route available.

Availability of Fire Protection Equipment



37

Emergency Evacuations

Planning you Evacuations

Mustering Points (Assembly Points)

When designating mustering points, planners should consider accessways to responding to emergency vehicles. Mustering points are located in an open space away from trees, powerlines, or other structures and away from access roads.



38

Emergency Evacuations**Planning your Evacuations****Fire Evacuation Plan**

Is a condensed format of your evacuation strategy, this includes evacuation routes and location of muster points.



39

Emergency Evacuations**Planning your Evacuations****Creating Access**

An important part of the plan is making it easier for help to arrive. Make sure evacuating crowds are not a hindrance to emergency vehicles.

Designate Fire lanes and Entry points

KEEP vehicles and crowds away from these areas



FIRE LANES 150 feet or less from your building
20 feet wide
14 feet of vertical clearance

40

Emergency Evacuations**Planning your Evacuations****Step 3 – Form the Team**

Designate a team of individuals who will implement your plan

Who will manage the evacuation?**At Minimum**

1 Evacuation Team Leader

2-3 Evacuation Team Members



41

Emergency Evacuations**Planning your Evacuations****Step 3 – Form the Team**

The Evacuation Team Leader is responsible for:

- Conducting routine evacuation drills
- Inspecting exit routes and emergency exits
- Check fire alarms and other signaling devices
- Take charge of evacuations during actual emergencies
- Conducts headcount of occupants at the muster points



42

Emergency Evacuations**Planning your Evacuations****Step 3 – Form the Team**

- The Evacuation Team Members are responsible for the following:
 - Inspecting assigned areas for evacuation risks
 - Coordinate with team leader and other members during emergencies
 - Assist in facilitating evacuation drills
 - Conduct a sweep of evacuated areas during emergencies
 - Guide people to designated exits
 - Creates and maintains accessways for responding to emergency vehicles

43

Emergency Evacuations**Planning your Evacuations****Step 4 – Positioning Fire Protection Equipment**

Determine the required number of fire protection equipment such as fire extinguishers, fire and smoke alarms, emergency lights and signage



Evacuation routes should be well lit and all emergency exits marked

44

Emergency Evacuations**Planning your Evacuations****Step 5 – Schedule Drills, Training, and Review of Plans**

Evacuation drills should be done at least every six months

Likewise, emergency evacuation plans need to be reviewed every year.



45

Activity II – Creating Evacuation Plans

46

<p>Emergency Evacuations Actual emergencies</p> <p>1. If You Discover a Fire or Smoke</p> <p>Similar to how fires spread quickly, when discovering a fire, you need to remember R.A.C.E.</p> <p>R – Remove those in Danger</p> <p>A – Alarm, Alert 911</p> <p>C – Confine the Fire</p> <p>E – Extinguish or Evacuate</p>  <p>47 [Insert BFP Hotline / 911]</p>	<p>Emergency Evacuations Actual emergencies</p> <p>2. Inform the Safety Officer of the Nature and Location of the Alarm</p> <p>This will give evacuation teams a better understanding of the incident.</p>  <p>48 [Insert BFP Hotline / 911]</p>
<p>Emergency Evacuations Actual emergencies</p> <p>3. When you Hear the Alarm Sound</p> <p>Do not PANIC</p> <p>Inform other occupants of the alarm and instruct them to prepare for evacuation</p> <p>Direct them to the nearest exit route</p>  <p>49 [Insert BFP Hotline / 911]</p>	<p>Emergency Evacuations Actual emergencies</p> <p>4. Prioritize Response and Coordinate with other Staff</p> <p>Prioritize those in most danger</p>  <p>50 [Insert BFP Hotline / 911]</p>
<p>Emergency Evacuations Actual emergencies</p> <p>In the Event of an Earthquake</p>  <p>51 [Insert BFP Hotline / 911]</p>	<p>Emergency Evacuations Actual emergencies</p> <p>Save Emergency Numbers in your Contacts</p> <p>Insert numbers</p> <p>BFP PNP CDRMMO 911</p> <p>52 [Insert BFP Hotline / 911]</p>
<p>Emergency Evacuations</p> <p>What is Herd Mentality?</p> <p>53</p>	<p>Emergency Evacuations</p> <p>What is Herd Mentality?</p> <p>Herd mentality, or mob mentality, is the tendency of the people in a group to think and behave as a group rather than as individuals.</p> <p>When this happens, individuals can be influenced by a larger group or the other way around. A single individual that seems "Knowledgeable" can make others think the same.</p>  <p>54</p>

Emergency Evacuations



How Herd Mentality Can Impact Evacuation

People will **blindly trust others** to guide them when they need to know where the nearest exit is.

This behavior may lead to safety under a knowledgeable leader, but it can also lead people to dead ends.

It is important for knowledgeable individuals to **be visible and take charge of the situation**.

55

Emergency Evacuations

Evaluation

Should all evacuations be treated similarly?

What are the different types of emergencies?

How should evacuations be done for:

- Fire
- Earthquake
- Violent Incidents



How can an individual affect how evacuations are done?

56

Emergency Evacuations

Questions?

57

Emergency Evacuations

Thank you

58

Dedication

This course was created as part of the Standardized Fire Education Manual (SFPE) of the Bureau of Fire Protection which hopes to reach out to young adults and offer them an overview of the basic knowledge, concepts, and information attached to fire safety.

It seeks to impart and/or reinforce prior knowledge and information to young adults who may be college students, out-of-school youths, students under the Alternative Learning System, Sangguniang Kabataan officials, and members of youth organizations.

Part 3

Basic Leadership Training through Fire Safety

INTRODUCTION TO FIRE SAFETY

Introduction to Fire Safety

Course Outline

I. Course Rationale

The Introduction to Fire Safety is a capsulized version of the two-stage Basic Leadership Training Through Fire Safety, a handy edition that the BFP Personnel can share when called on short notice and/or during collaborative immersions.

This ‘short course’ has been formulated to provide a run-through format of lecture and demonstration, which covers the most basic fire safety concepts, knowledge, and information.

To this end, this course aims for the audience to, at least, achieve the following objectives:

Familiarize with the BFP, including its roles and mandates;
Acquire more knowledge about fire including its history, elements, classes, and causes;
Identify basic fire protection equipment commonly found in public areas;
Identify and differentiate the five (5) types of fire extinguishers in common use;
Appreciate the importance of fire safety awareness in their daily encounters;
Demonstrate how to properly use a fire extinguisher using the T.P.A.S.S method; and
Demonstrate the ability to individually react when faced with emerging fire emergencies using correct procedures and techniques.

II. Core Values

Core values are an essential part – the drop-anchor – of every academic and professional gathering to which the measure of success may be attributed. For the Introduction to Fire Safety, awareness is the core value that encompasses all the objectives of the course. Awareness is the state or ability to process or become conscious of knowledge, concepts, or information so that they become part of one’s advocacies and beliefs.

III. Course Description

A. Program of Instructions

The Introduction to Fire Safety is a two-hour lecture in which audience participation may be limited only to random and occasional interaction and return demonstration while the lecturer tackles all topics included in the course.

B. Method of Execution

Since this course is a capsulized version that will run for only two hours, the lecturer shall serve as the resource speaker. Interaction is important in the lecture but with expected number of participants in this course (more than 150 young adults), interaction from the audience is not necessary. However, the lecturer may utilize his best abilities to attract participation of the young adults, either through choral responses or through gestures like clapping, raising hands or standing. Moreover, if time and the availability of lecturers permits, the crowd may be divided into halves to allow close-contact approach and even a chance to allow interaction from the participants.

C. Course Requirements

1. Materials

The provision of the following training materials shall be subject to the limitations of the BFP.

A. Primary Tools

- a. Multimedia Projector
- b. Powerpoint Presentation
- c. Demonstration Materials
 - Fire pit
 - Fire extinguishers, fire blanket
 - Diesel, gasoline, lighters, matches
- d. Visual Examples
 - Improvised firefighting tools
 - Fire Evacuation Plan

B. Alternative Tools

- Hand-outs
- Flip cards
- Lapel

Other requirements shall be borne by the requesting party.

2. Venue

The requesting party shall provide a venue suitable for this training that can accommodate more or less 150 participants. Strictly, the venue shall be within the AOR of the requested BFP Lecturer.

3. Coordinating Instructions

To avail of the Introduction to Fire Safety Course, the requesting party may forward a letter addressed to the City/Municipal Fire Marshal in their locality containing the following:

- a. Venue, date and time of the lecture;
- b. Number of expected participants;
- c. Purpose and/or objective of the gathering;

The BFP, through the City/Municipal Fire Marshal, shall respond to accommodate such request, subject to the availability of the lecturer on the given schedule. Otherwise, the BFP and the requesting party may agree on a different schedule to accommodate the request.

IV. The Training Subjects Outlines and Lecture Guides

See Attached

V. Annexes

Annex 1 – Fire Drill Evaluation Checklist (Refer to Annex C of Module 7)

Chapter 1

Basic Leadership Training through Fire Safety

Introduction to Fire Safety



PHOTOGRAPHY BY: FO1 Kevin M Dalut

In this Chapter 1...

Goal

To provide a short format fire safety awareness lecture and demonstration that covers the most basic fire safety concepts and which may be offered to young adults as the primary audience.

Objectives

By the end of the session, participants should be able to:

1. Have an appreciation of the B.F.P., including its roles and mandates
2. Understand what is fire to, including its history, elements, classes, and causes
3. Identify essential fire protection equipment commonly found in public areas
4. Identify and differentiate the five (5) types of fire extinguishers in everyday use
5. Demonstrate how to use a fire extinguisher using the T.P.A.S.S. method properly
6. Demonstrate the ability to individually react when faced with emerging fire emergencies using correct procedures and techniques.

Subject Aids Needed:

A. Primary Tools

1. Multimedia Projector, sound system with microphones
2. PowerPoint Presentation
3. Demonstration Materials
 - i. Fire Pit
 - ii. Fire Extinguishers, Fire Blanket
 - iii. Diesel, gasoline lighters, matches

B. Alternative Tools

1. Flip Cards, Lappel
2. Demonstration Materials
 - i. Fire Pit
 - ii. Fire Extinguishers, Fire Blanket
 - iii. Diesel, gasoline lighters, matches
3. Visual Examples
 - i. Improvised firefighting tools
 - ii. Fire Evacuation Plan

Total Time of Delivery:

1.5 - 2 Hours

Cheat Sheet

Subject Overview

Purpose: This subject will briefly cover the full range of basic fire safety topics to provide stations with a standard lesson plan and PowerPoint to be used during incidental invitations where only 1-2 hours are given. This sub aims to raise fire safety awareness for the majority of young adults attending different institutions.

General Guidance: This subject includes demonstrations involving the use of fire. The lecturer needs to ensure safety when conducting the experiments. The lecturer should explain the subject in the simplest possible terms using colloquial terms when applicable/necessary to facilitate understanding. He should enthusiastically deliver this subject with the aim of catching the interest of the audience and encouraging them to ask questions.

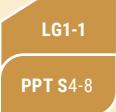
To facilitate questions being directed at the facilitators, microphones should be provided for the participants.

Things to Consider: Since these subject deals with fire and other potentially dangerous substances, no actual activities may be done near occupied buildings or areas which may constitute a fire hazard

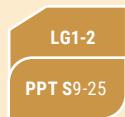
Subject Outline

Visual Aids	Outline	Notes
1. PREPARATORY		
PPT COVER	1.1 Greet the participants and start by introducing your name and your teammates.	Greet participants and thank the requesting party for inviting the B.F.P. to conduct the lecture.
LG1-1 PPT S2-3	1.2 Ask participants about things they know regarding the B.F.P. 1.3 Present subject objectives.	Allow participants to Refer to Goals and Subject Objectives
2. MOTIVATION		
	Ask the question: <i>What comes to mind when you hear the name Bureau of Fire Protection? Or Bumbero?</i>	Encourage participation (Entertain 1-2 answers)

Cont...1

Visual Aids	Outline	Notes
 LG1-1 PPT S4-8	<p>Video Clip I – responses</p> <p>2.1 Who are your firefighters?</p> <ul style="list-style-type: none">• What is the BFP• BFP Mission and Vision• Legal Mandates• Prevention, Suppression, Investigation, Emergency Medical Response	<p>Show a video clip of fire responses involving the B.F.P.</p> <p>2-3 videos will be shown. Ask participants if they remember this particular incident.</p> <p>Present the Bureau of Fire Protection, including the B.F.P. mission, B.F.P. visions 4, and primary tasks.</p>

3. LESSON PROPER



- 3.1 What is fire
- Start by talking about the fire in terms of its characteristics
- What is fire?
- Fire is Fast
 - Fire is Dark
 - Fire is Hot
 - Fire is Deadly

Proceed to the NFPA/RA 9514 definition of fire.

Discuss the triangle of fire.

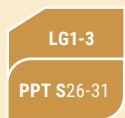
Fuel – can be anything that burns.

Heat – the initial source of energy

- Conduction
- Convection
- Radiation

Oxygen – acts as an oxidizer and is in the air we breath

Chain Reaction (Fire Tetrahedron)



- 3.2 Classes of Fire
- Discuss the different Classes of Fire
- A, B, C, D, K

Recap the different classes of fire.

Cheat Sheet

Visual Aids	Outline	Notes
 LG1-4  PPT S32-34	<p>3.3 Causes of Fire</p> <ul style="list-style-type: none">I. Basic Causes<ul style="list-style-type: none">Acts of GodAccidentalIntentionalBriefly tackle PD 1613 relating to arson <p>II. Top 3 Common Causes of Fire in the Philippines</p> <ul style="list-style-type: none">ElectricalOpen FlameCareless Smoking	
 LG1-5  PPT S38-66	<p>3.4 Fire Protection Equipment, Maintenance and Use</p> <p>Discuss the different common Fire Safety Equipment found in public areas, their maintenance, and how to use/trigger them.</p> <ul style="list-style-type: none">Smoke DetectorsFire AlarmsFire BlanketFire Extinguishers	
 LG1-6  PPT S67-76	<p>3.5 Reacting to Fire Emergencies</p> <p>Teach the mnemonic R.A.C.E. when discovering a fire:</p> <ul style="list-style-type: none">R – Remove, RescueA – Alarm, Alert 911C – ConfineE – Extinguish, Evacuate	

Activity I - Evacuation Drill

Activity II - Fire Suppression

Cont...2

Visual Aids	Outline	Notes
	4. RECAPITULATION	
	Do a quick recap of all topics discussed.	
	Share the hotline of local emergency services.	
PPT S77-78	5. CLOSING EVALUATION	
	5.1 Ask if there are questions or clarification	
	5.2 End the subject.	

Nothing Follows

2.1 Who are Your Fire Fighters?

The Bureau of Fire Protection (B.F.P.) or Kawanihan ng Tagapangalaga Laban sa Sunog was created by virtue of Republic Act No. 6975, otherwise known as the D.I.L.G. Act of 1990. It was enacted, establishing a separate fire protection bureau designed to be national in scope and civilian in character. It is the government body in the Philippines responsible for the provision of fire services under the jurisdiction of the Department of the Interior and Local Government.



BFP VISION

“A modern fire service fully capable of ensuring a fire-safe nation by 2034.”

BFP MISSION

“We commit to **prevent** and **suppress** destructive fires, **investigate** their causes, **enforce the fire code** and other related laws, and **respond to man-made natural disasters and other emergencies.**”

Mandates of the Bureau of Fire Protection

I. Fire Prevention and Suppression of Destructive Fires

Similar to the Pareto Principle of 80/20, your firefighters place the majority of their efforts to prevent fire from occurring in the first place and suppress fires when they do arise. The B.F.P. accomplishes this by pushing numerous fire prevention programs aimed at raising awareness and gathering support from all sectors of the community.



II. Fire Investigation

Investigators. The Bureau of Fire Protection investigates all incidents involving fire to determine its cause, either natural, accidental, or intentional.

III. Enforce the Fire Code of the Philippines

Law Enforcers. The men and women of the Bureau of Fire Protection are tasked with enforcing the Republic Act 9514, otherwise known as the Fire Code of the Philippines. Commonly referred to as the “Bible of the Philippine Fire Service,” RA9514 contains all the provisions governing the maintenance of public safety and economic development by preventing all types of damaging fires.

IV. Respond to Disasters and Other Emergencies

First Responders. As part of the uniformed services, the Bureau of Fire Protection is always on alert and ready to respond to any

possibility, be it public safety, disaster response, or national emergencies, both natural and man-made.

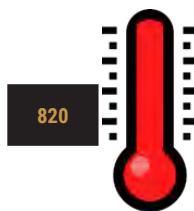
3.1 General Characteristics of Fire^[1-2]

When talking about fire, we can define it by its **characteristics**:



FIRE IS FAST! (Spread) Even a small fire can quickly get out of control in as little as 30 seconds if left untouched and can meet conditions for a “Flashover” in as little as 3 minutes.

This needs to be taken into account when planning for your initial fire response or conducting emergency evacuations because it only takes minutes for smoke to fill up a house or for it to be fully engulfed in flames.



FIRE IS HOT! (Intensity) The heat generated in a structural fire is actually more dangerous than the flames themselves. Within minutes, Room temperatures in a fire can be 40°C (extremely hot summer day) at floor level and rise to 320°C (maximum setting on a kitchen oven) at eye level. This is hot enough to melt clothing on the skin, cause severe burns, and scorch your lungs in one breath.

As heat naturally rises and gets trapped, upper thermal layers can reach up to 820°C. This intense heat buildup causes objects to spontaneously ignite regardless of their proximity to the blaze. This is known as **Flashover**.



FIRE IS DARK! Fires may start bright but quickly produce black smoke and complete darkness. Even a small fire can produce enough smoke to fill a building within minutes. This thick black smoke can quickly cause disorientation and impair spatial awareness and recognition.

This is often the most underestimated danger when it comes to talking about fires. While reduced visibility may not outright harm individuals caught in a fire, it can be a major contributing factor to how quickly (or slowly) people can navigate inside a burning building and evacuate to safety.



FIRE IS DEADLY! (Severity) More people die from smoke inhalation during fires than the actual flames. Smoke produced in a fire contains poisonous gases such as carbon dioxide, hydrogen cyanide, and ammonia that attack your eyes, nose, throat, and lungs. Inhaling even small amounts of smoke can numb your senses and leave you dazed.

Even more dangerous is the presence of Carbon Monoxide (C.O.), which is a colorless, tasteless, and odorless gas that is extremely difficult to detect. It is produced when fuels such as oil, coal, gas, and wood are burned and is often known as the silent killer owing to our lack of initial reaction when being exposed to it. (Which often only presents as nausea and lightheadedness)

Fire Emergencies in Modern Times

A 2018 statistic from the World Health Organization classified fire-related injuries such as burns as a **global public health problem**, accounting for an estimated 180,000 deaths annually. The majority of these occur in low- and middle-income countries, with two-thirds occurring in African and South-East Asia regions.

Non-fatal burns are one of the leading causes of morbidity for low-income communities in the Philippines, including prolonged hospitalization, disfigurement, and disability. ([WHO 2018](#))

Key facts to remember:

- An estimated 180,000 deaths every year are caused by burns – the vast majority occur in low- and middle-income countries.
- Burns occur mainly in the home and workplace.
- Burns are preventable.

Fires In the Hands of Early Man

The earliest evidence of our ancestors (*Homo Erectus*) using fire dates back from between 1.7 to 2 million years ago. However, the most widely accepted evidence points to about one million years ago, citing campfire remains found at caves in Africa (Science Daily 2012). Interestingly, during the same period, *Homo Erectus* also started developing a larger brain and a more efficient gut. The theory is that learning how to roast meat and vegetables over fires provided our ancestors with a much-needed surplus of energy. Seeing as the human brain consumed 20% of the body's calories at rest, cooking effectively predigested food and helped early humans absorb calories more rapidly.

However, the regular and habitual use of fire can only be confidently dated to somewhere between 300,000 and 400,000 years ago. The evidence to support this includes what has been identified as a repeated use of a single hearth, with additional signs of meat being roasted there. ([Scutumlondon.co.uk](#))



Trivia:

When fire met food, the brains of early humans grew. Cooking made food easier to digest and gave early humans the calories needed to feed that bigger brain. ([A.D.L.E.R. 2015](#))

Chemistry of Fire

Definition of Fire

The First step in preventing fires is to understand exactly what it is. The Fire Code of the Philippines (RA9514) defines fire as the active principle of **burning**, characterized by **heat** and **light** of **combustion**.

Combustion or “burning” is a high-temperature exothermic (heat-producing) reaction between a fuel, oxidizer (oxygen), and an initial heat source.

Combustion occurs when fuel or other materials chemically react with available oxygen and, in the process, produce light, heat, and a flame.

Facilitator's Note [1/4]

The lecturer may then again ask the question: “But really, what is fire?” (Entertain 1-2 speculative answers before defining fire (RA9514))

The Elements of Fire



For the initial combustion to occur, three essential components needed, we often refer to this as the three elements of fire: Fuel, Heat and, Oxygen. These elements are interdependent with each other where all three are constantly consumed during the combustion process. The absence or removal of one or more these elements will break the combustion cycle and lead to the extinguishment of the fire.

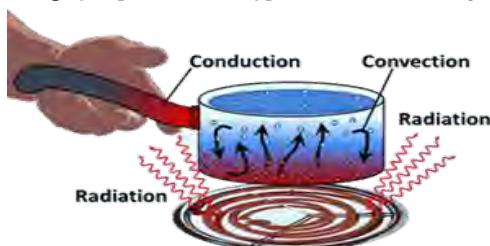
I. Fuel

It is anything that can burn and contains the chemical potential energy released during combustion. Initially, the fuel may be in the form of a solid, liquid, or gas at the ambient temperature.

Some materials burn more easily than others. This has to do with their fire point or the minimum temperature at which a fuel emits sufficient vapors to ignite when exposed to a flame or heat source. A high fire point means that a certain material has a lower hazard when exposed to heat sources. Since all materials have a fire point, nothing is ever genuinely fireproof, only fire-resistant.

II. Heat

It is the energy component of the fire triangle and is responsible for the initial ignition. The amount of heat required to start the reaction largely depends on the type of fuel and its **fire point**.



Spread – Heat Transfer

Understanding heat transfer is important because a major aspect of **fire dynamics** (how fires begin, grow, and evolve) is to understand how heat is transferred to and from a fire. Heat spreads through 3 methods: convection, conduction, or radiation.

A. Conduction

It is the transfer of heat from one body to another by direct contact of the two bodies (Example: Flames Directly Touching Objects in the vicinity of a fire) or by an intervening heat-conducting medium. (Example: A Steel pipe going through the floor of a multi-story building can spread the heat throughout the building during a fire.)

This is regarded as the slowest method for heat transfer because the heat needs to travel from particle to particle.

B. Convection

It is the transfer of heat energy by the movement of heat through fluids from the source of heat to a cooler part of the environment. It is the most common method of heat transfer; when liquids or gases are heated, they become less dense and will expand and rise.

This is the most dangerous way a fire can spread through a structure since this method of heat transfer tends to dry and preheat fuels faster.

C. Radiation

This is the transfer of heat by infrared radiation (heat waves, e.g., the sun), which generally is not visible to the naked eye. Radiant heat typically travels from the sides or edges of a fire until the heat waves reach another object. It is the least efficient method of heat transfer to fuels.

Radiated Heat During Fires

Because radiated heat moves in all directions away from the initial fire, a sufficiently hot fire may spread to any burnable material close enough to absorb enough heat. In extreme cases, burnable object my spontaneously combust when subjected to enough heat for it to reach its **fire point**.

III. Oxygen

It is present in the air we breathe and serves as the oxidizing agent for the combustion process.

Air contains about 21 percent oxygen, and most fires require at least 16 percent oxygen content to burn. When fuel burns, it reacts with oxygen from the surrounding air, releasing heat and generating combustion products (gases, smoke, embers, etc.) in a process known as oxidation.

The Fourth Element (Fire Tetrahedron)

The Chemical Chain Reaction

While it is true that fire cannot exist without each of the three elements present, simply combining them at random does not guarantee ignition. Otherwise, everything would ignite spontaneously seeing that each element is constantly present at varying levels in our surroundings.

For combustion to occur, requires that the three elements combine in the correct ratio to initiate and sustain combustion — this is called the chemical chain reaction and is the most essential component of the burning process.

Fire Tetrahedron

In addition to the elements of fire, the fire tetrahedron and



Picture Source: fire-risk-assessment-network.com

introduces the fourth component – Chemical Chain Reaction. Each face of the tetrahedron represents the interdependent elements needed to ignite and sustain fire. At its base is the chemical chain reaction which brings together the other components to create fire. Having this fourth component together with the three elements of fire provides a clearer understanding of what causes fires to ignite and continue to burn over time.

3.2 Classes of Fire^[1-3]

While fire can seem like one big threatening force, it's essential to know that there are actually several classes of fires. A fire's class can determine how quickly it burns, how dangerous it is, and the best way to suppress or put it out. The five different classes of fires each have their own best approach to put them out safely and effectively.

Class A Fire – Ordinary Combustibles

Ordinary combustibles are the sorts of materials that you will often find everywhere, from the wooden table in the dining room to the trash in the bin. These are typically slow-burning solid fuels, and they generally leave behind **A.S.H.** when they burn.

Examples: Wood, Paper, Clothes, Cardboard

A stand for **A.S.H.**

When Extinguishing Class, A Fires, you can use **WATER**



Class B Fire – Flammable Liquids

Class B fires pertain to flammable liquids such as gasoline, paint thinner, and diesel. These are extremely flammable and are dangerous when ignited because they can spread quickly and are hard to put out.

B stands for **Boil**.

Do not use water because flammable liquids are lighter than water and will only spread the flames.



Class C Fire – Electrical (Energized) Appliances

Class C fires are the most common cause of household fires. These start from worn-out or damaged wiring or overheated electrical appliances.

C stands for **Current**.

Take Care When Extinguishing Electrical Fires because you run the risk of electrocution.

DO NOT USE WATER. Pull Plugs. Turn off Breakers

A Class C fire without electricity reverts back to Class A



Class D Fire – Combustible Metals

Class D fires are commonly found in industrial zones, factories, or workshops that use flammable metals such as magnesium, sulfur, sodium, and lithium, among others. Class D Fires are hard to extinguish because they burn extremely hot and cannot be doused with water.

D stands for **Dent**.

USING WATER may Cause an **EXPLOSION**



Class K Fire – Kitchen fires

Class K fires are fires that involve cooking oils and fats. Although technically a subclass of Class B fires, grease fires were given their own classification due to their prevalence and different suppression techniques used.

K stands for **Kitchen**.

Do not use water; water will cause a **steam explosion**.

Instead, cover burning pans with a **lid** or a **fire blanket**.



3.3 Causes of Fire [1-4]

I. Basic Causes of Fire

The following has already been discussed and incorporated into the common causes of fire but will be mentioned here for formality purposes. As stated before, the Supreme Court recognizes three (3) basic causes of fire.

1.) Acts of God or Providential Fires (Force Majeure)

These fires are caused by acts of God, like lightning and erupting volcanoes. They cannot be controlled or prevented by man (i.e., lightning, spontaneous heating, rays of the sun).

2.) Accidental Fires

These fires are caused mostly by human negligence and human errors, such as smoking in bed, leaving plugged electrical appliances like flat irons, air conditioning units, and defective L.P.G. (Liquified Petroleum Gas) containers.

3.) Intentional Fires

These fires are those set on purpose with a motive, legally classified as arson or incendiaryism, such as burning a structure for insurance or to cover up another crime.

Presidential Decree 1613

Presidential decree 1613, signed by the late President Ferdinand Marcos Sr. in 1970, strengthened punishments for the crime of arson.



Destructive arson carries the penalty of Reclusion Temporal (12–20 years) to its maximum of Reclusion Perpetua (30 years) or Life imprisonment (Lawphil.net)

II. Top Three Causes of Home Fires in the Philippines

An official report by the Bureau of Fire Protection in 2023 indicated the top three causes of fire incidents in the Philippines as Substandard electrical wiring, Careless Smoking, and Unattended Open Flames. ([Lumina 2023](#))

1. Substandard electrical wiring

Fires caused by electrical connections are the most common cause recorded by the B.F.P. in 2023. The majority of these fires were found in low-income housing using improvised connections using substandard materials or low-quality electrical appliances. Octopus wiring has also been one of the common causes of sudden fires.



Stop Overloading electrical connections. Make sure electrical connections are checked by an electrician at least **once every year**.



2. Lit cigarette butts

Careless smoking was also linked to an alarming number of fire emergencies. Cigarette butts are often thrown in areas where the thatched roofs of houses made of light materials can easily catch fire. When smoking, use an ashtray and make sure to extinguish used cigarette butts.



3. Unattended Open Flames from a Kitchen

Kitchen fires can happen in an instant. Even a few seconds of inattention can lead to a burnt-down kitchen or worse. Another aspect of kitchen fires has to do with built-up grease and other oils left over from the cooking process. There are cases where these have ignited, causing a large fire almost instantly.

Maintain a clean kitchen and never leave stoves unattended.

3.4 Fire Protection Equipment and Maintenance [1-5]



Fig 2. A Common Smoke Detector Source: google search

A. Smoke Detectors

A smoke detector is an electronic fire-protection device that automatically senses the presence of smoke either by visually detecting the existence of smoke (photoelectric) or by measuring the products of combustion created during the burning process (ionization) and then triggers an alarm to warn the building occupants.

The typical range of detection is 3 meters or 10 feet.

F.A.Q.s about smoke detectors:

Do I have enough? Different barriers, such as a closed door or the layout of a room, can prevent smoke from quickly reaching a smoke detector. A confined fire may also slow the spread of smoke and delay detection. According to the N.F.P.A., having at least one smoke alarm on every level, in every bedroom, and outside of each sleeping area is recommended. ([N.F.P.A. 2009](#))

Beep 2x: If a smoke alarm suddenly starts beeping at fixed intervals, it could be the battery is starting to run low and needs to be replaced. Or, the battery could have come loose or was improperly installed.



Is my smoke detector even working? It is normal if you are unsure if smoke detectors are functioning or not; maybe the battery went out, or it has just been years since you bought it. A quick and easy way is to press the “test” button on the face of the smoke detector. If it beeps, then it's good to go.

Maintaining your Smoke Detectors

- Make sure smoke detectors are clean and free from any obstruction
- they should be located not more than 12 inches from the ceiling if attached to a wall
- Test your fire extinguishers once a month and replace the battery every 12 mos.
- If a smoke detector is more than ten years old, replace it.



B. Fire Alarms

A fire alarm is a fire protection device installed in a building or enclosed area that gives an audible or visible warning of a fire upon activation. Simple fire alarms commonly found along building hallways consist of a standalone pull switch connected to a bell and need to be manually activated. In contrast, more sophisticated alarm systems can be networked with multiple other sensors and activated automatically.



Fig Sample Manual Fire Alarm
Source: google search

Alarms should be found along the corridors, at least on every floor.

Maintaining your Fire alarms

- Fire Alarms should be tested for function once a month
- All signaling devices should be inspected for visible damage
- Manual fire alarm boxes should be tested to confirm that they can initiate the alarm. Mechanical switches can stick when left untouched for extended periods.
- Verify audible and visual trouble signals.





Fig Demonstrates the proper method of using fire blankets.
Source: google search

C. Fire Blankets

A fire blanket is a safety device designed to extinguish small fires by acting as a barrier to oxygen smothering the flames. They consist of a sheet of fire-retardant such as fiberglass.

Small fire blankets, such as for use in kitchens and around the home, are usually folded in easily accessible storage containers. Larger fire blankets, designed for industrial or laboratory use, are typically wall-mounted in quick-release containers with high visibility tabs to allow a person to easily pull out for use.

How to use a fire blanket

In case of a kitchen fire, you should:

1. Pull the tabs hanging from the bottom of the packet to release the blanket
2. Hold the blanket in front of you. Ensure the fabric is rolled back at the edges to keep your hands protected
3. Carefully place (do not throw) the fire blanket over the fire, ensuring your hands, arms, face, and body are safely behind it
4. Lay the blanket above the fire, careful to avoid the sides of the blanket, as flames can run over the sides and onto your hands
5. Once the fire is contained, to stop it from reigniting, you should turn off the heat source and leave the blanket over the area for at least 15–20 minutes until there is no longer heat present
6. Leave the room and call for help



In case of a clothing fire, you should:

1. Wrap the blanket around the person and the flames, making sure to approach him carefully
2. Have them drop to the floor and roll around until the fire is out

3. Seek medical assistance for the person immediately.

Note: Fire blankets are single-use items. When in doubt, discard

Maintaining your Fire Blankets

- Remove the fire blanket from its container
- Inspect the fire blanket and container for visible damage
- Replace the fire blanket in its container and record the date on the service label
- check to make sure that your fire blanket is not positioned too close to a fire risk

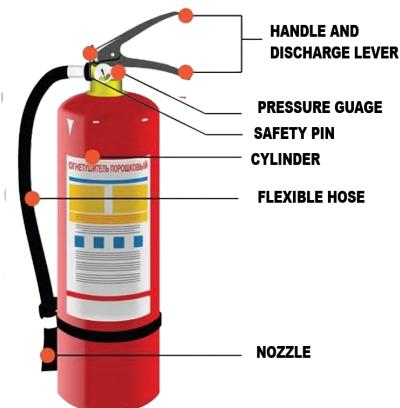


D. Fire Extinguishers

When we talk about fire protection equipment, the first thing that most people automatically think of is fire extinguishers, likely because of their portability, flexibility, and ease of use. Fire extinguishers are handheld active fire protection devices usually filled with a dry or wet chemical, CO₂, or other extinguishing agents used to suppress or control small fires during the **incipient stage**. ([Futurafire.com](https://futurafire.com))

Trivia: Fire extinguishers come in different sizes to suit different needs. Small 1-pound are commonly found being carried in cars or other small vehicles, and the largest fire extinguisher is a 350-pound wheeled fire extinguisher that is designed to fight fires on board ships and other marine vessels and can reach temperatures of up to 1200degrees Celsius. ([Perkes 2019](#))

Basic parts of a fire extinguisher



Cylinder

it is the main body of the fire extinguisher consisting of a cylindrical pressure vessel and contains the pressurized extinguishing agent.

Handle

Used to transport the device from one place to another and allows for a solid grip during use.

Discharge lever

Located above the handle and is used to break the pressure seal and allow the discharge of the extinguishing agent.

Safety Pin

A safety device to prevent unintentional discharge. It is inserted into the valve body and needs to be removed before use.

Pressure Gauge

Indicates whether or not the extinguisher is at the proper operating pressure to expel the fire suppressant. The indicator pointing to “Recharge” could mean that it has been used or that the pressure seal has been broken.

Flexible Hose

The hose allows to direct the flow of the extinguishing agent. It is a flexible pipe; it can only be found on fire extinguishers that are heavier than 3 Kg.

Nozzle

the nozzle is the hose’s conical end, out of which the extinguishing agent disperses in a predetermined pattern.

Fire Extinguishers by Type

Fire extinguishers are designed to tackle specific types of fire. Extinguishers contain different active ingredients that make them suitable for fighting certain types of fires. For them to be effective, they should be used appropriately, or they may prove ineffective or aggravate the fire if not used properly ([O'Connor 2021](#)) ([Futurafire.com 2023](#))



I. HCFC

(HYDROCHLOROFLUOROCARBON) 123

Fire Extinguisher.

HCFC 123 is a clean extinguishing agent that removes heat and displaces oxygen from the combustion zone. It effectively extinguishes Class A, B, and C fires by cooling and smothering. Typically, Painted Green

Advantage: Low Maintenance

Disadvantage: Relatively Expensive



II. Dry Chemical Powder Fire Extinguisher.

This is the most widely used type of fire extinguisher today and is effective on Class A, B, and C fires. ([sc.edu](#))

Dry Chemical fire extinguishers primarily extinguish fires by interrupting the chemical reaction of the fire triangle. The

particles in a dry chemical fire extinguisher also blanket the area of the fire to form a barrier between the oxygen and the fuel source. Typically, Painted Red

Advantage: Relatively inexpensive

Disadvantage: Requires more maintenance, prone to **caking**

III. Carbon Dioxide (CO₂) Fire Extinguisher

This type of extinguisher is primarily intended for use on Class B and C fires. Carbon dioxide extinguishers are well suited for areas with plenty of electrical equipment, such as offices or electrical rooms because they do not damage electrical apparatus. CO₂ extinguishers do not leave any residue, unlike foam extinguishers. Carbon dioxide extinguishers work by smothering the fire and removing its supply of oxygen. It can be identified by its large elongated nozzle.



IV. Aqueous Film Forming Foam (A.F.F.F.) Fire Extinguisher.

It is suitable for class A and B fires only. A.F.F.F. fire extinguishers can be used on Class A and B fires. They are optimized for extinguishing flammable liquid fires such as gasoline or diesel but can also be used on ordinary fires such as wood and paper. The foam extinguishes liquid fires by creating a barrier on the surface of the liquid, preventing flammable vapors from reaching the air and starving the fire of fuel.



Important note: Do not use on class C fires ([mfs.co.uk 2022](https://mfs.co.uk/2022))

In the Philippines, it is typically painted BLUE or R.E.D.

V. Wet Chemical Fire Extinguisher

It is a fire extinguisher suitable for class A and K fires. Wet chemical extinguishers can effectively be used on Class K fires involving cooking oils and fats. They are extremely effective when used correctly. The wet chemical rapidly knocks the flames out, cools the burning oil, and chemically reacts to form a soap-like solution similar to A.F.F.F. extinguishers, sealing the surface and preventing re-ignition. Despite being primarily designed for use on kitchen fires, they can also be used on Class A fires (ordinary materials) and Class B fires (flammable liquids). (Perkes 2019)



RECAP: Fire Extinguishers at a Glance



Facilitator's Note [2/4]

Do a quick recap of the differences between the different types of extinguishers.

Essentially, a fire extinguisher works by removing one or more of the four elements needed for a fire. It could remove heat, reduce oxygen levels, or even put a barrier over fuel to disrupt the chain reaction. (*Blazeguard*)

Before Using a Fire Extinguisher (sc.edu):

Assess your fire, asses your extinguisher: Make sure that you know what type of fire is burning; certain fire extinguishers may not work or may make the fire even worse.

Keep your Distance: Stand 6–8 feet away with your back to the exit when using fire extinguishers in enclosed spaces so you can make a quick escape.

When using a Fire Extinguisher

remember T.P.A.S.S.

T – Twist the pin to break the safety seal

P – Pull the safety pin and test the extinguisher

A – Aim low at the base of the fire

S – Squeeze the lever and discharge the extinguisher

S – Sweep from side to side and advance or retreat as necessary

Note:

During fire response, place expended fire extinguishers on **their sides** to indicate that they are empty; this prevents other people from accidentally picking up expended extinguishers.



Facilitator's Note [3/4]

Demonstration I. – Fire Extinguishers: the facilitator should demonstrate the proper handling and storage of fire extinguishers, emphasizing quick access and easy deployment. Demonstrate how to use fire extinguishers using the T.P.A.S.S. method both indoors and outdoors. Lastly, demonstrate how to inspect and maintain fire extinguishers.

Maintaining your Fire Extinguishers

Carry out a visual inspection monthly by:

1. Checking the condition of the cylinder, pliability of the hose
2. Check the extinguisher has not been used or tampered with.
3. Check the pressure reading
4. Inspect to make sure the fire extinguisher is not exposed to the harsh environment

For Dry chemical powder extinguishers, prevent caking by flipping the extinguisher end over end once every two weeks.

3.5 Reacting to Fire Emergencies [1-6]

During a Fire

Similar to how fires spread quickly, when discovering a fire, you

need to remember **R.A.C.E.** (sc.edu) (fireblockplans.com)

R – Remove those in Danger

Pause. Breath. Think –The first thing you should do when discovering a fire is to take a deep breath and not panic. Next is to let other people know that there is a fire and get them out. Do not risk extinguishing the fire before removing people from the area.

A – Alarm, Alert 911

Pull the fire alarm and alert authorities by calling 911. Remember that an early call will mean an early response. This is why knowing the numbers for your local fire department is essential.

When reporting a fire, remember to:

- Say what is burningTell them where. Location of the fire, including landmarks
- How many are injured or tapped (if any)
- And your name and phone number to contact you.

Important: Do not assume that someone else has made the call for you. If unsure, make the call yourself.

C – Confine

Move away from the fire and smoke. Limit the spread of the fire by closing doors and windows behind you if time permits. Doing this can give others more time to evacuate.

E – Extinguish or Evacuate

Never ignore a fire alarm. If you hear one, you should alert other people around you and go to the nearest emergency exit and get to safety. If there is smoke, stay low to the ground and crawl, or use a damp cloth over your mouth to help you breathe in a smoke-filled room. Never open doors that are warm to the touch because there may be fire on the other side.

Suppose you have been trained and have the means to do so. Attempt to extinguish the fire if it is still small enough.

Remember: Assess your fire. If it's too hot to bear, evacuate.

After Evacuating

Do not attempt to go Back.

No amount of money is worth a life. Fires can change quickly within a matter of minutes. If you were able to get out, stay out

Facilitator's Note [4/4]

Activity I – Exit Drills and Extinguishment (Refer to Demonstration I of Module 7)

Check Yourself and Others

After evacuating, do a quick check to see if you have any injuries you might not have noticed. In an emergency, adrenaline can dull the pain from cuts and bruises.

Foot Notes and References:

[Jimmyley Guzman 2023, P.H. Fire Incidents Down, Casualties UP

<https://pia.gov.ph/news/2023/04/19/ph-fire-incidents-down-casualties-up-bfp>

NFPA Today 2022, What Kind of Smoke Alarm Should I Buy

<https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2022/01/28/What-kind-of-smoke-alarm-smoke-detector-should-I-buy>

Kelly Hayes 2022, How Many Smoke Alarms Do I Need? A Guide to the Live Saving Device

<https://www.fox10phoenix.com/news/how-many-smoke-alarms-do-i-need-a-guide-to-the-life-saving-device-and-when-to-check-them>

Brian O'Connor 2021, Fire Extinguishers Types

<https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2021/07/16/>

N.F.P.A. 2009, Installing and Maintaining Smoke Alarms

<https://www.nfpa.org/Public-Education/Staying-safe/Safety-equipment/Smoke-alarms/Installing-and-maintaining-smoke-alarms>

Nationwide.com, E Fire Extinguishing Ball Adds a New Layer of Fire Safety

[https://www.nationwide.com/lc/resources/farm-and-agribusiness/articles/what-is-a-fireball-extinguisher-ball.](https://www.nationwide.com/lc/resources/farm-and-agribusiness/articles/what-is-a-fireball-extinguisher-ball)

Futurafire.com 2023, Fire Extinguisher Types

<https://futurafire.com/types-of-fire-extinguisher/>

Lawphil.net, PD 1613 Amending the Law on Arson

https://lawphil.net/statutes/presdecs/pd1979/pd_1613_1979.html

Science Daily 2012, Evidence of Man Using Fire 1 Million Years Ago

<https://www.sciencedaily.com/releases/2012/04/120402162548.htm>

Scutumlondon.co.uk, The History of Fire and How Humans Discovered I.T.

<https://www.scutumlondon.co.uk/help-advice/the-history-of-fire-and-how-humans-discovered-it>

WHO 2023, Burns Factsheet

<https://www.who.int/news-room/fact-sheets/detail/burns>

Adler 2015, Why Fire Makes Us Human

<https://www.smithsonianmag.com/science-nature/why-fire-makes-us-human-72989884/>

Readers Digest 2018, 5 Myths About House Fires

<https://www.readersdigest.ca/home-garden/cleaning/5-myths-about-fire/>

NLM 2017, Clinical Management of Burns in the Developing World

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5318592/>

Lumina 2023, Top Causes of Fire Incidents in the Philippines

<https://www.lumina.com.ph/news-and-blogs/blogs/top-causes-of-fire-incidents-in-the-philippines/>

Chapter 1

Basic Leadership Training through Fire Safety

Powerpoint and Visual Aids

[Cover Page]
Bureau of Fire Protection

Introduction to Fire Safety

[Firestation]
[Address]
[Hotline]

Subject Objectives

- ✓ Have an appreciation of the BFP, including its roles and mandates
- ✓ Understand what is fire to include its history, elements, classes, and causes
- ✓ Identify basic fire protection equipment commonly found in public areas
- ✓ Identify and differentiate the five (5) types of fire extinguishers in common use
- ✓ Demonstrate how to properly use a fire extinguisher using the T.P.A.S.S method
- ✓ Be able to properly execute S.D.R. and simple evasions



3

Subject Goal



To provide fire safety awareness through lectures and demonstrations which covers the most basic fire safety concepts and which may be offered young adults as the primary audience.

2

Action to Fire Safety
Bureau of Fire Protection

Action to Fire Safety Who are Your Firefighters?



The Bureau of Fire Protection

The BFP was created by virtue of Republic Act No. 6975, otherwise known as DILG Act of 1990. It was enacted establishing a separate fire protection bureau designed to be national in scope and civilian in character.



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Saving Lives and Properties

4

Action to Fire Safety
Bureau of Fire Protection

Action to Fire Safety
Bureau of Fire Protection



BFP VISION

"A modern fire service fully capable of ensuring a fire safe nation by 2034"

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5



BFP MISSION

"We commit to prevent and suppress destructive fires, investigate its causes, enforce the fire code and other related laws, respond to man made natural disasters and other emergencies"

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6

456 MODULE 5 Basic Leadership Training through Fire Safety

Introduction to Fire Safety
Mandates of the Fire Service



The BFP Designates four (4) primary tasks to be accomplished

FIRE PREVENTION and SUPPRESSION
FIRE INVESTIGATION
FIRE CODE ENFORCEMENT
EMERGENCY MEDICAL AND RESCUE SERVICES

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7

Introduction to Fire Safety
Mandates of the Fire Service



Fire Prevention Programs of the Bureau of Fire Protection



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8

Introduction to Fire Safety
What is Fire

What is Fire?

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9

Introduction to Fire Safety
What is Fire

FIRE IS FAST! (Spread)

A fire will double in size every **30 seconds** under normal conditions
In as little as 3 minutes, a small fire can meet the conditions for a "flashover"



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10

Introduction to Fire Safety
What is Fire

FIRE IS HOT! (Intensity)

Within minutes, air temperatures in a burning room can reach 300 degrees Celsius and is hot enough to melt clothes, skin and scorch your lungs in one breath

Temperatures can climb to between **650-820 degrees Celsius**

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11



Introduction to Fire Safety
What is Fire

FIRE IS DARK!

Fires may start bright but quickly produce black smoke and complete darkness. Even a small fire can produce enough smoke to fill a building within minutes.



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12

Introduction to Fire Safety
What is Fire

FIRE IS DEADLY! (Severity)

Most people who die in fires, die from smoke inhalation and not the flames.



Carbon Monoxide (CO) which is a colorless, tasteless, and odorless gas that is extremely difficult to detect and is often known as the *silent killer*.

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13

Introduction to Fire Safety
What is Fire

In 2016 The World Health Organization (WHO) classified fire related injuries as

A Global Health Problem

180,000

People still die every year from fire related injuries.
Low and Middle income Countries at risk

Burns are Preventable



14

Introduction to Fire Safety
What is Fire

DID YOU KNOW?

FIRE WAS FIRST USED BY OUR ANCESTORS,
HOMO ERECTUS 400,000 YEARS AGO



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15

Introduction to Fire Safety
What is Fire

DID YOU KNOW?



When fire met food, the brains of early humans grew. Cooking made food easier to digest and gave early humans the calories needed to feed that bigger brain.

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16

Introduction to Fire Safety
What is Fire

But Really What is Fire?

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17

Introduction to Fire Safety
What is Fire

What is Fire

The Fire Code of the Philippines (RA9514) defines fire as the active principle of burning, characterized by heat and light of combustion.

Combustion or "burning" on the other hand is a high-temperature exothermic (heat-producing) reaction between a fuel; oxidizer (oxygen), and an initial heat source

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18

Introduction to Fire Safety
Elements of Fire

OXYGEN

THE AIR WE BREATHE IS COMPOSED OF:

78% HYDROGEN

21% OXYGEN

1% ARGON AND OTHER GASES

The human body needs 20% O₂ to properly function and minimum 18% before severe tissue damage occurs

An open flame ONLY requires at least 16% O₂ to "react" or "combust"



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19

Introduction to Fire Safety
Elements of Fire

FUEL

It is anything that can burn and contains the chemical potential energy released during combustion.



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20

Introduction to Fire Safety
Elements of Fire

Heat

It is the energy component of the fire triangle and is responsible for the initial ignition.



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21

Introduction to Fire Safety
Elements of Fire

How Heat Transfer Works

BY DIRECT CONTACT/CONDUCTION
WITH THE FLAME CATCHING FROM
ONE OBJECT TO ANOTHER

Or through an intervening medium



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22

458 MODULE 5 Basic Leadership Training through Fire Safety

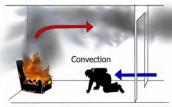
Introduction to Fire Safety Elements of Fire

How Heat Transfer Works

BY CONVECTION

THROUGH THE ACTION OF HEAT ARISING WITHIN A STRUCTURE BRINGING ALONG POISONOUS GASES AND SMOKE

THE MOST LIFE THREATENING



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23

Introduction to Fire Safety Elements of Fire

How Heat Transfer Works

BY RADIATION

HEAT WAVES MAY CAUSE NEARBY COMBUSTIBLE OBJECTS TO BURST INTO FLAMES



This allows fire to spread even without any contact

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24

Introduction to Fire Safety Elements of Fire

THE 4TH ELEMENT CHEMICAL CHAIN REACTION

This pertains to the **combination** of the three elements in the correct ratio to sustain combustion



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25

Are All Fire The Same?

Introduction to Fire Safety Classes of Fire

CLASS A "ASH"

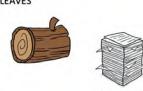


ORDINARY MATERIALS THAT TURN TO ASH WHEN BURNED:



PAPER, WOOD, CLOTHING, DRIED LEAVES

USE WATER!!



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27

Introduction to Fire Safety Classes of Fire

CLASS B "BOIL"



FLAMMABLE LIQUIDS SUCH AS GASOLINE, KEROSENE, DIESEL, LPG



DO NOT USE WATER!!

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28

Introduction to Fire Safety Classes of Fire

CLASS C "CURRENT"



ELECTRIFIED/ ENERGIZED APPLIANCES OR STRUCTURES



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29

Introduction to Fire Safety Classes of Fire

CLASS D "DING"



BURNING METALS

SOME METALS LIKE MAGNESIUM, ALUMINUM AND PHOSPHORUS CAN BURN PRODUCING A FLAME THAT IS EXTREMELY HOT AND HARD TO PUT OUT

USING WATER MAY CAUSE AN EXPLOSION!!

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30



Introduction to Fire Safety
Classes of Fire

CLASS K "KITCHEN"

COOKING OILS

MOST KITCHEN FIRES ARE CAUSED BY BURNING COOKING OILS.

Covering burning pans with a lid or damp cloth can extinguish the fire

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31

Why Fires Start?

32

Introduction to Fire Safety
Causes of Fire

Acts of God (FORCE MAJEUR)

THERE IS FORCE MAJEUR

VOLCANIC ERUPTIONS
LIGHTNING STRIKES

THERE IS NO WAY TO PREVENT THEM, ONLY MITIGATE THE EFFECTS

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33

Introduction to Fire Safety
Causes of Fire

II. ACCIDENTAL

III. INTENTIONAL

There is malicious intent

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34

Introduction to Fire Safety

Top Three Causes of Fire in the Philippines

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35

Introduction to Fire Safety

Top Three Causes of Fires in the Philippines

A recent report by the Bureau of Fire Protection Found the three top causes of destructive fire in the Philippines to be:

- Substandard Electrical Wiring
- Careless Smoking
- Unattended Open Flames From a Kitchen

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36

Introduction to Fire Safety

[Insert fire safety tips]

Use examples which are relevant for the target audience

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37

Introduction to Fire Safety

Fire Protection Equipment

Fire protection equipment are specialized tools that can be a lifesaver in the event a fire ever breaks out

These can be broken down into two types:

- Active Fire Protection
- Passive Fire Protection

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38

460 MODULE 5 Basic Leadership Training through Fire Safety

Introduction to Fire Safety

Smoke Detectors

A smoke detector is an electronic fire-protection device that automatically senses the presence of smoke.

2 Types:

- Photoelectric
- Ionization

Typical detection range is **3m⁺ or 10 feet**

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39

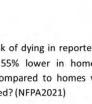
Introduction to Fire Safety

Trivia:



Did you know? The risk of dying in reported home fires was found to be 55% lower in homes with working smoke alarms compared to homes with no alarms or none that worked? (NFPA2021)

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40

Introduction to Fire Safety

Smoke Detectors

Frequently Asked Questions

How Many is Enough?

Why Does it Keep Making Noise?

How Do I Know It Is Working?

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41

Introduction to Fire Safety

Maintaining your smoke detectors

- ✓ Smoke detectors should be clean and free from any obstruction
- ✓ Place them not more than 12 inches from the ceiling if attached to a wall
- ✓ Test your fire extinguishers once a month and replace the battery every year
- ✓ If a smoke detector is more than ten years old, replace it.

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42

Introduction to Fire Safety

Fire Alarms

A fire alarm is a fire protection device installed in a building or enclosed area that gives an audible or visible warning of a fire upon activation.

Alarms should be found along the corridors, at least on **every floor**.

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43

Introduction to Fire Safety

Fire Blankets

A fire blanket is designed to extinguish small fires by acting as a barrier to oxygen smothering the flames.

They consist of a sheet of fire-retardant such as fiberglass.

How to Identify a Fire Blanket:

Located near areas with flammable liquids or kitchens where grease fires are more likely to occur.

Mounted walls in a bright **red or orange box** will pull tabs on the bottom.

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44

Introduction to Fire Safety

Fire Blankets

Before using a Fire Blanket, consider the following:

Am I big enough? Assess the size of the fire you are tackling before deciding to use a fire blanket.

Safe, Slow, and Steady: Remember to protect

Remember: Fire blankets are **single-use** items. When in doubt, discard

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45

Introduction to Fire Safety

Fire Blankets – How to Use



For a window or door:
1 Open window or door.
2 Open fire blanket over burning area.
3 Pull off paper insulating layer and unfold.

For a person in flames:
1 Lay person on ground and roll them to extinguish flames.
2 Open fire blanket over burning area.
3 Pull off paper insulating layer and unfold.

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46

Introduction to Fire Safety

Fire Blankets – How to Use

Maintaining your Fire Blankets

- Remove the fire blanket from its container
- Inspect the fire blanket and container for visible damage
- Replace the fire blanket in its container and record the date on the service label
- check to make sure that your fire blanket is not positioned too close to a fire risk



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Introduction to Fire Safety

Fire Blanket Deployment Inspection Demo and Practice

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48

Introduction to Fire Safety

Fire Extinguishers

Fire extinguishers are handheld active fire protection devices usually filled with a dry or wet chemical, CO₂, or other extinguishing agents used to suppress or control small fires.

It is used as a **FIRST AID** to fight fires in the **INCIPIENT STAGE**



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Introduction to Fire Safety

Fire Extinguishers

How Many Do I Need?

It depends on your Structure and Hazard Classification but the minimum for low hazard areas are:

There should be one fire extinguisher for each enclosed room or a running distance of not more than 15 meters.



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Why? Because it takes 30 seconds to travel a total of 30 meters. And a lot can happen in 30 seconds

Introduction to Fire Safety

Fire Extinguishers by Type

I. HCFC (HYDROCHLOROFLUOROCARBON) 123 Fire Extinguisher.

HCFC 123 is a clean extinguishing agent that removes heat and displaces oxygen from the combustion zone.

Used for Class A, B, and C fires

Typically, Painted Green

Advantage: Low Maintenance

Disadvantage: Relatively Expensive



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Introduction to Fire Safety

Fire Extinguishers by Type

II. Dry Chemical Powder Fire Extinguisher.

This is the most widely used type of fire extinguisher today and is effective for Class A, B, and C fires.

Dry Chemical fire extinguishers primarily extinguish fires by interrupting the chemical reaction and smothering.

Typically, Painted Red

Advantage: Relatively inexpensive

Disadvantage: Requires more maintenance, prone to caking



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Introduction to Fire Safety

Fire Extinguishers by Type

III. Carbon Dioxide (CO₂) Fire Extinguisher

Carbon dioxide extinguishers work by smothering the fire and removing its supply of oxygen.

Suited for Electrical Fires

This type of extinguisher is primarily intended for use on Class B and C fires.

It can be identified by its large elongated nozzle.



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Introduction to Fire Safety

Fire Extinguishers by Type

IV. Aqueous Film Forming Foam (A.F.F.F.) Fire Extinguisher.

The foam extinguishes liquid fires by creating a barrier on the surface of the liquid, preventing flammable vapors from reaching the air and starving the fire of fuel.

AFFF fire extinguishers can only be used on Class A and B fires.

Do not use on class C fires

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462 MODULE 5 Basic Leadership Training through Fire Safety

Introduction to Fire Safety

Fire Extinguishers by Type

V. Wet Chemical Fire Extinguisher

The wet chemical rapidly knocks the flames out, cools the burning oil, and chemically reacts to form a soap like solution similar to AFFF extinguishers and, blanketing the surface and preventing re-ignition.

For class A, B and K fires.



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Introduction to Fire Safety

Fire Extinguishers

Before Using a Fire Extinguisher:

Assess your fire, assess your extinguisher:
Make sure that you know what type of fire is burning; certain fire extinguishers may not work or may make the fire even worse.



Keep your Distance: Stand 6-8 feet away with your back to the exit when using fire extinguishers in enclosed spaces so you can make a quick escape.

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RECAP : Extinguishers at a Glance



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Introduction to Fire Safety

Fire Extinguishers

When using a Fire Extinguisher remember T.P.A.S.S.

- T – Twist the pin to break the safety seal
- P – Pull the safety pin and test the extinguisher
- A – Aim low at the base of the fire
- S – Squeeze the handle and discharge the extinguisher
- S – Sweep from side to side and advance or retreat as necessary



Place expended fire extinguishers on their sides to indicate that they are empty, this prevents other people from accidentally picking up expended extinguishers.

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Fire Extinguishers

Maintaining your Fire Extinguishers

Inspect Fire Extinguishers Every Month

- ✓ Check for physical damage, and pliability of the hose
- ✓ Check the pressure reading
- ✓ Make sure the extinguisher has not been tampered with
- ✓ Make sure extinguishers are not exposed to the elements



For Dry chemical powder extinguishers, prevent caking by flipping the extinguisher end over end once every two weeks.

59

Introduction to Fire Safety

How to Handle and Maintain a Fire Extinguisher

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60

Introduction to Fire Safety

What if you don't have fire extinguishers?

What now?

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Introduction to Fire Safety

Extinguishment Using Common Items

Because the majority of fires still of fires at home, it is important to know how to use common household items to extinguish small fires.

Remember, every fire is different.

You can use:

Water
Salt and Baking Soda
Wet Towel
Wet Sand or Soil



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Extinguishment Using Common Items**Water**

Application: Ordinary combustible materials (class A)

Make sure there are no electrical outlets or other electrical connections near the fire.

Accidentally dousing outlets will cause **electrocution**.BFP Hotline 0930 123 4567
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Extinguishment Using Common Items**Salt and Baking Soda**

Depives the fuel of oxygen and helps to reduce and eventually extinguish the fire.

Application: Class A, B, C, D, K fires



To put out even a small fire, large quantities of baking soda and salt are necessary.

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Extinguishment Using Common Items**Wet Towel or Cloth**

This is an improvised Fire Blanket. Make sure to use a thick cloth

Application: Class A, B, and K fires

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Extinguishment Using Common Items**Wet sand or Soil**

This is commonly found near gasoline stations or areas with plenty of grease and oil.

You need to cover the entire area of the fire.

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Common Fire EmergenciesBFP Hotline 0930 123 4567
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What to do if my clothes catch on fire?**Stop****Drop****Roll**BFP Hotline 0930 123 4567
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What if another individual catches on fire?**You can use a Fire Blanket or A Wet Towel****Remember:**

Do not attempt to fan the flames, this will only make it worse

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Introduction to Fire Safety

Before A Fire

I. Plan Ahead, Know Your Exits

II. Check your Building Evacuation Plan

Commonly posted along corridors and near stairway landings

What do I need to look for?

- E – Exits
- E – Extinguishers
- A – Assembly Points

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Introduction to Fire Safety

During A Fire

Similar to how fires spread quickly, when discovering a fire, you need to remember **R.A.C.E.**

R – Remove those in Danger

A – Alarm, Alert 911

C – Confine the Fire

E – Extinguish or Evacuate

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Introduction to Fire Safety

During A Fire

R – Remove those in Danger

Pause. Breath. Think. The first thing you should do when discovering a fire is to take a deep breath and not panic. Next is to let other people know that there is a fire and get them out. Do not risk extinguishing the fire before removing people from the area.

DON'T PANIC

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Introduction to Fire Safety

During A Fire

A – Alarm, Alert 911

Put the fire alarm and alert authorities by calling 911. When reporting a fire, remember to:

- Say what is burning
- Tell them where Location of the fire, including landmarks
- How many are injured or trapped (if any)
- And your name and phone number to contact you.

Do not assume that someone else has made the call for you. If unsure, make the call yourself.

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During A Fire

C – Confine the Fire and Smoke

Move away from the fire and smoke. Limit the spread of the fire by closing doors and windows behind you if time permits. Doing this can give others more time to evacuate.

Never open doors that are warm to the touch

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74



Introduction to Fire Safety

During A Fire

E – Extinguish or Evacuate

Never ignore a fire alarm. If you hear one, you should alert other people around you and go to the nearest emergency exit and get to safety.

If you have been trained and have the means to do so. Attempt to extinguish the fire if it is still small enough.

Remember: Assess your fire. If it's too hot to bear, evacuate.

CRAWL IF YOU MUST!!

Covering your mouth and nose with a **damp cloth** can help you breath in a smoke filled room

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After Evacuating

Do Not Attempt to Go Back

No amount of money is worth a life.
If you were able to get out, stay out!

KEEP OUT!

Check Yourself, Help Others

After evacuating, do a quick check to see if you have any injuries you might not have noticed.

In an emergency, **adrenaline** can dull the pain from cuts and bruises.

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Questions?

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THANK YOU FOR LISTENING!!

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THANK YOU FOR LISTENING!!

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