



Training Solutions, Delivered!

# **THE ABC'S OF YOUR PERSONAL FALL ARREST SYSTEM *(Concise)***

**Leader's Guide, Fact Sheet  
& Quiz**

**Item Number: 1563**  
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***This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.***

## **PREPARING FOR THE MEETING**

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

## **CONDUCTING THE PRESENTATION**

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

# 1563 THE ABC'S OF YOUR PERSONAL FALL ARREST SYSTEM (*Concise*)

## FACT SHEET

**LENGTH: 9 MINUTES**

### **PROGRAM SYNOPSIS:**

Whether you use a personal fall arrest system every day or only once in your lifetime, one thing is for certain: the system won't do any good unless it is used properly. While your company provides fall arrest equipment and training on its use, and mandates that you use this equipment, you ultimately are responsible for using it correctly in all required situations. You should want to use fall arrest systems because you want to survive a fall should one occur; it's that simple.

This video shows viewers how to properly select and use personal fall arrest systems so they can work safely above ground. Topics include forces involved in falls, components of a fall arrest system, inspection of the equipment, calculating fall distance and selection of an appropriate connecting device.

### **PROGRAM OBJECTIVES:**

After watching the video, the viewer will be able to explain the following:

- How the three components of a personal fall arrest system work together to prevent injuries and deaths;
- How to properly select, inspect and use personal fall protection equipment;
- How to calculate the fall distance between the anchor point and the maximum elongation of the connecting device;

### **PROGRAM OUTLINE**

#### **FORCES INVOLVED IN FALLS**

- When a 220-pound person falls six feet, a huge amount of force is exerted on both the person and on the tie-off point. This force is about 2,500 pounds.
- To avoid a catastrophic failure, an anchor point must have a safety factor of two. This means it must be able to hold 5,000 pounds per person tied off to it.
- Always use an anchoring device such as a beam clamp, cross arm strap or other specialty device which will provide a proper D-ring, resist cuts and withstand 5,000 pounds of force.

#### **COMPONENTS OF A FALL ARREST SYSTEM**

- The anchor point is just one of the three critical components of your personal fall arrest system.
- The anchor point, body harness and the connecting device make up the typical fall arrest system. You can think of these items as the "ABC's" of your fall arrest system.
- We use the term "fall arrest system" because a successful outcome in the event of a fall depends on all of the system: the anchor point, the connecting device and the body harness working together to perform properly.

#### **INSPECTION OF THE FULL BODY HARNESS**

- A full body harness is the only type of body wear legal for use in a fall arrest system. Like all other components of the fall arrest system, the harness must be used properly to be fully effective.
- Proper use always begins with an inspection. Check each harness strap for cuts, frays, chemical damage or other defects. Bending the webbing into a "u" shape can help expose hidden damage; be sure to check both sides of each strap.
- Check D-rings for cracks, distortion or rough edges.
- Inspect the buckle for cracks or damage and check for broken stitching around the buckle as well as on the D-ring attachment points.
- Be sure to check the buckle tongues and grommets for distortion.
- Harnesses with damaged webbing, torn stitching or distorted grommets and D-rings should not be used and removed from service.
- Even if no damage is visible, any harness involved in a fall must be removed from service. All fall arrest equipment is designed for one time use only and must not be reused.

#### **CONNECTING DEVICES**

- The third and final piece of the fall arrest system is the connecting devices, which connects the body harness to the anchor point. Many types of connective devices exist, each designed for a specific application.
- In addition to keeping you from hitting the ground, a properly used fall arrest system reduces the forces placed on the body during a fall.
- OSHA requires a personal fall arrest system to reduce the force of a fall to 900 pounds or less. Using a shock-absorbing lanyard as a connecting device is one way to achieve this.

### **CALCULATING FALL DISTANCE**

- While this type of lanyard improves safety by reducing the force of a fall, it can be dangerous if you fall too far. Since you can't always depend on falling directly into a hole, you need to know how to properly calculate your fall distance.
- The maximum distance a worker will fall from the tie-off point equals the worker's height plus lanyard length plus any lanyard elongation. The maximum elongation of a shock-absorbing lanyard as it deploys is three and a half feet.
- When calculating the fall distance to determine the required height of your tie-off point, always add an additional three feet as a safety factor. This makes the minimum height a six-foot worker can safely tie off with a 6-foot shock absorbing lanyard to be 18½ feet.

### **SELECTING THE APPROPRIATE CONNECTING DEVICE**

- If your anchor point is lower than the required height, you can select shorter lanyard device. A six-foot worker using a two-foot lanyard tied off 11 feet above ground still maintains a three-foot safety factor in the event of a fall.
- In addition, the shorter fall distance of two feet reduces the force of a fall to acceptable levels even without a shock absorber.
- Of course, in some applications, work is difficult when you can only move two feet from the anchor point. For these types of applications, a self-retracting fall-limiting device is a good choice.
- These devices play out when pulled at a normal walking pace and automatically retract when slackened. This allows freedom of movement away from the anchor point.
- In the event of a fall, the device activates a brake that quickly stops the fall.
- These useful devices come in various sizes, with each size and model having different line lengths and braking characteristics. Generally, the smaller models stop within two feet, making them useful when a shorter fall distance is required.
- Larger models are designed to withstand a full six-foot fall. These models can add up to 3½ feet to your fall distance.
- Be sure you understand the operation of your equipment so you can properly calculate your required fall distance.

### **HAZARDS POSED BY CONNECTING DEVICES**

- As useful as these devices are, they also have potential dangers. Allowing too much line to deploy while moving away from the anchor point can still allow you to hit the ground in the event of a fall.
- Even after the device operates properly, the pendulum effect may still swing a fallen worker into the ground. To avoid this problem, keep the angle of the lifeline within 15 degrees of vertical and always be aware of how much line is deployed relative to your required fall distance.

### **CONCLUSION**

- Like other pieces of safety equipment, the company provides any required fall arrest equipment, training on this equipment including how and when to use it and requires its use as a mandatory part of the safety program.
- None of that is why you should use fall arrest systems. You want to use fall arrest systems because you want to survive a fall should one occur; it's that simple.
- Anytime we leave the ground, we are exposed to the constant, unwavering force of gravity trying to knock us down. Offset that force with an equally constant, unwavering commitment to the proper use of your personal fall arrest system.

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**ANSWERS TO THE REVIEW QUIZ**

1. b

2. a

3. c

4. c

5. b

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**REVIEW QUIZ**

*The following questions are provided to determine how well you understand the information presented in this program.*

Name \_\_\_\_\_ Date \_\_\_\_\_

1. When calculating the fall distance to determine the required height of your tie-off point, always add an additional \_\_\_\_\_ as a safety factor.
  - a. 12 inches
  - b. Three feet
  - c. Six feet
  
2. A full body harness is the only type of body wear legal for use in a fall arrest system.
  - a. True
  - b. False
  
3. Which device should be used when you need freedom to move away from the anchor point?
  - a. A shock-absorbing lanyard
  - b. A two-foot lanyard
  - c. A self-retracting lanyard
  
4. An anchor point must be able to hold \_\_\_\_\_ pounds per person tied off to it.
  - a. 500
  - b. 2,500
  - c. 5,000
  
5. A harness involved in an actual fall can be reused as long as there are no visible signs of damage.
  - a. True
  - b. False