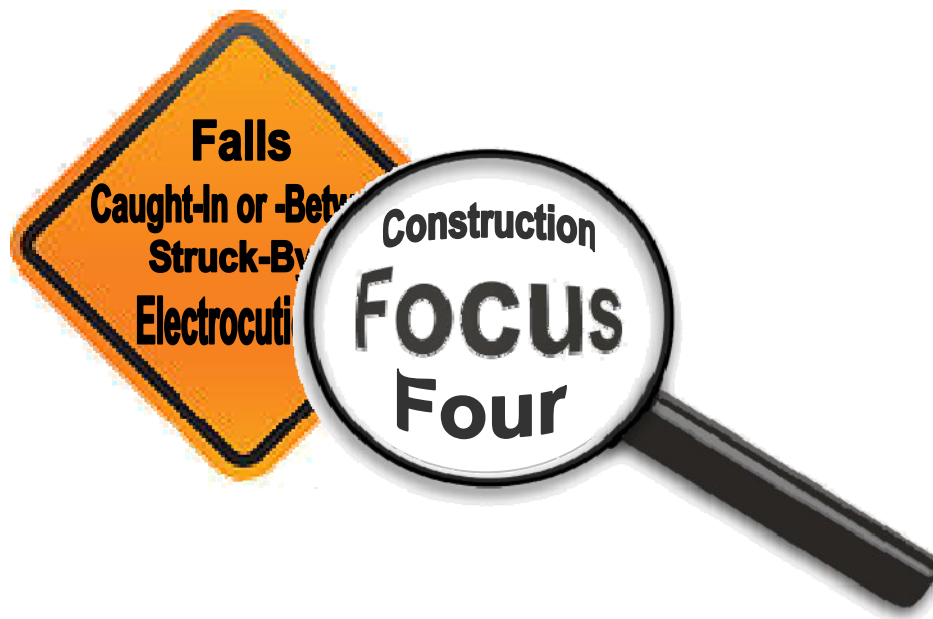


OSHA Training Institute

Construction Focus Four: Outreach Training Packet



OSHA Directorate of Training and Education
April 2011

Construction Focus Four: Outreach Training Packet

Module Training Materials

Introduction

Lesson 1

Construction Focus Four: Fall Hazards

Lesson 2

Construction Focus Four: Caught-In or -Between Hazards

Lesson 3

Construction Focus Four: Struck-By Hazards

Lesson 4

Construction Focus Four: Electrocution Hazards

OSHA Training Institute

Construction Focus Four: Introduction

OUTREACH TRAINING PACKET

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Welcome

The Construction Focus Four Module was developed in support of the Occupational Safety and Health Administration (OSHA) Construction Outreach Program's effort to help workers in the construction industry understand the hazards they face and know what their employer's responsibilities are regarding protecting workers from workplace hazards. This training module is required to be used in both the 10- and 30-hour OSHA Construction Outreach Training Program classes.

Construction safety is one of OSHA's top concerns. Construction is among the most dangerous industries in the country and construction inspections comprise 60% of OSHA's total inspections. In 2009, preliminary data from the Bureau of Labor Statistics indicate that there were 816 fatal on-the-job injuries to construction workers – more than in any other single industry sector and nearly one out of every five work-related deaths in the U.S. that year. Also in 2009, private industry construction workers had a fatal occupational injury rate nearly three times that of all workers in the United States: 9.7 per 100,000 full-time equivalent construction workers vs. 3.3 for all workers.

The data support OSHA's concern and thus the need for the development of this robust set of Construction Focus Four Module training materials. Authorized Outreach Trainers will find that the materials present detailed content in a participatory format to enhance the effectiveness of their training sessions. Trainers will also find the information provided in this "Introduction" section helpful when planning their training sessions. In addition to program requirements, training development considerations including training tips and techniques are provided. Plus, the attachment included provides a quick reference to the key paragraphs within the OSHA Construction Industry standard 29 CFR 1926 Subpart C "General Safety and Health Provisions".

Another general construction reference trainers should become familiar with is OSHA's *Construction Industry Digest*. This booklet contains standards most frequently overlooked by the employer and standards covering particularly hazardous situations in construction. Copies of this publication are available for download at: www.osha.gov/Publications [Note: Trainers are encouraged to check www.osha.gov regularly to ensure they have the most current OSHA published information.]

Focus Four Training Packet Includes

- **Materials:** Instructor/Student materials for the four lessons: Fall Hazards; Caught-In or -Between Hazards; Struck-By Hazards; and Electrocution Hazards.
 - For each of the lessons, there is an Instructor Guide with lesson test, PowerPoint® presentation file(s), and student handouts (e.g., job aids, checklists) as developed.
- **DVD:** Video "**Construction Safety: Choice or Chance**" (© BCTD, 2000. *Used with permission. All rights reserved. Building and Construction Trades Department*) as an option to consider to begin the Focus Four section. The video is also available:
 - On the OSHA website at:
<http://www.osha.gov/SLTC/video/constructionsafety/video.html>
 - From the Resource Center

Outreach Trainer Requirements

Planning:

This Construction Focus Four Module is mandatory for both 10- and 30-hour construction outreach courses. Trainers should plan to use the materials as follows:

- **10-hour course** = 4 hours minimum
Note: Because most construction fatalities are caused by fall hazards, falls must be covered for at least one hour, and we recommend at least one hour and 15 minutes. The other focus four hazards must be covered for a minimum of one-half hour each.
- **30-hour course** = 6 hours minimum [trainer can determine time of each lesson using the 10 hour course estimates as the minimum time required]

Requirements for using the Construction Focus Four training materials:

- Plan the Focus Four lessons to fit within the 10- or 30- hour course
- Review all materials prior to implementing this training
- Present content to meet the stated goal and objectives of each of the lessons
- Follow the participatory training model [explained in section below] by applying effective training techniques
- Test the student's achievement of the objectives

Authorized Trainers may:

- Use their own content and/or supplemental materials to deliver the content per each stated objective; note that the use of the BCTD video provided is also optional
- Use the "Questions for Review" provided as the lesson test or the trainer may develop their own set of test questions to measure the student's achievement of the stated objectives
- Edit the PowerPoint presentations to meet the needs of their specific training context, audience and/or environment

Setting the Stage

To begin the series of instruction, trainers have the option to play the video "Construction Safety: Choice or Chance" (©BCTD, 2000. Used with permission. All rights reserved.) developed by the Building and Construction Trades Department. This 15-minute video highlights the four leading causes of fatalities on construction sites and stresses the responsibility for safety as a joint effort of government, management, and employees. OSHA (2000, April).

State the course objectives so the participants are aware of the training expectations and continue the 4-hour session by presenting the four lessons: Fall Hazards; Caught-In or -Between Hazards; Struck-By Hazards; and Electrocution Hazards.

Become familiar with the information that is provided in the "Trainer Guidance" section of each instructor guide.

Also, when using the instructor guide, remember the information in the "Notes" column offers trainer's reference and/or additional information regarding the topic or standard. The trainer can use this space to add their own notes on the training.

Participatory Model

The application of the participatory model principles and structure was a main focus during the development of the Construction Focus Four Module. The model's approach draws on the participants' own experiences. Conducting the active training encourages teamwork and group problem solving. Participants have the opportunity to analyze health and safety problems in a group and develop possible solutions. The majority of the time, this results in valuable exchanges between workers and trainers about their lives and work. Participatory methods are effective instructional strategies that work quite well for all audiences, including those who have difficulty reading and writing. Conducting the active training also allows time for instructor observation of the class. This helps the trainer determine who may be having difficulty with the concepts thus letting the trainer know if adjustments to their presentation are necessary.

Participatory methods 1) Draw on participants' own knowledge and experience about health and safety issues; 2) Emphasize learning through doing without relying on reading; and 3) Create a comfortable learning experience for everyone. The following are examples of methods to encourage trainees to participate and be actively engaged in class:

- | | |
|-------------------------|--|
| ▪ Ice-breakers | ▪ "Trigger" visuals |
| ▪ Risk maps | ▪ Brainstorming |
| ▪ Role playing | ▪ Demonstrations and hands-on activities |
| ▪ Games | ▪ Participatory lectures |
| ▪ Small group exercises | |

Involving the participants:

Each of the Focus Four lessons provides a variety of construction industry scenarios for the learner to work through individually and/or as part of a group exercise. Therefore, it is important to note that if the trainer adds any customization to the lesson content; they must apply the attributes of the participatory model. Adult learning principles and effective training techniques need to be applied as well.

Principles of Adult Education

The best training programs take advantage of the following characteristics of adult learners:

- Adults learn by doing and are self-motivated
- Adults expect to gain information that has immediate application to their lives
- Adults learn best when they are actively engaged
- Adult learning activities are most effective when they are designed to allow them to develop both technical knowledge and general skills
- Adults learn best when they have time to interact, not only with the instructor but also with each other and when asked to share each other's personal experiences from work and elsewhere

Training Tips and Techniques**Prepare for Training**

- Finalize all the training materials and any other planning and/or scheduling issues as much in advance of the training date as possible
- Preview all the materials that are developed to determine and plan how they will be used
- Review all the logistics of the training session from general location to facility information to room set-up, etc.
- Gather information regarding characteristics of the training audience
- Practice the training session to critique your own presenter skills (*Monitor your timing, and your use of non-verbal communication such as, eye contact and posture*)
- Apply strategies to delivery plan that will motivate learners, recognize the learning exchanges and address the needs of the audience

Motivate Learners: Apply the Keller ARCS Model

- **A = Attention:** Capture participants' interest and stimulate an attitude of inquiry. For example, ask questions; use emotional or personal information; create a mental challenge; use human-interest examples relating to topic.
- **R = Relevance:** Make the instruction relevant to the learners' needs and goals. Match the instruction to the learning styles and personal interests of the learners.
- **C = Confidence:** Build in learners a positive expectation of success. Make sure that the learning experience helps learners to display competence and success as a result of their efforts and abilities. It should be an achievable rather than overwhelming learning experience.
- **S = Satisfaction:** Encourage and support their intrinsic enjoyment of the learning experience, as well as providing extrinsic rewarding consequences for their successes. Also build a perception of fair treatment. Reinforce the learning by providing useful and fair feedback.

Acknowledge the Three Learning Exchanges

1. **Participant to Participant:** Appreciate that participants can learn from one another's experiences. Participant to participant exchanges should be a key feature of the training.
2. **Participant to Facilitator:** Value that facilitators can learn as much from training sessions as participants do. On many subjects, a group of participants may have more extensive knowledge and experience in certain areas than a facilitator.
3. **Facilitator to Participant:** Realize that classroom learning needs structure. A facilitator's role is to guide discussions, encourage participation, draw out and/or add information as needed, and highlight key issues and points.

Consider Environmental and Learning Needs

- Does the learning environment encourage active participation? Ask yourself:
 - How are the chairs, tables, and other learning stations arranged?
 - Does this arrangement encourage or inhibit participation and interaction?
 - Can the arrangement be changed easily to allow different kinds of interaction?
 - Is the climate of the classroom sufficiently comfortable to allow learning?
- Does the social environment or atmosphere in the learning environment encourage people to participate? Ask yourself:
 - Are warm-up activities or “ice breakers” needed to put people at ease?
 - Are the participants encouraged to say things in their own words?
 - Are participants encouraged to listen carefully to each other?
 - Are they encouraged to respect different points of view?
 - Are they encouraged to use humor and is the humor appropriate?
- People learn in different ways; do the learning activities in the training program provide participants with an opportunity to do each of the following?
 - Listen
 - Look at visuals

Attempt to Reach all Skill/Literacy Levels

The following suggestions are designed to help trainers adapt training techniques to reach participants at all skill/literacy levels. These techniques will also be helpful in teaching participants for whom English is a second language (sometimes referred to as English Language Learners (ELL)).

- Do not assume that all participants are equally skilled or confident in speaking, reading, writing, and math.
- Plan for small group activities where participants get to work together on shared tasks.
- Try to use as many teaching techniques as possible that require little or no reading.
- At the beginning of a class mention that you are aware people in the group may have different levels of reading and writing skills.
- Establish a positive learning situation where it is okay not to know and where questions are expected and valued. Participants need to be able to say when they do not understand and to feel comfortable asking for explanations of unfamiliar terms or concepts.
- Make it clear that you will not put people on the spot. Let them know that you are available during breaks to talk about this or other concerns.
- Let the group know that they will not necessarily be expected to read material by themselves during the training.
- Let people know that you will not be requiring them to read aloud. Ask for volunteers when reading aloud is part of an activity. Never call on someone who does not volunteer.
- Do not rely on printed material alone. When information is important, make sure plenty of time for discussion is built into the class so participants have an opportunity to really understand.
- Read all instructions aloud. Do not rely on written instructions or checklists as the only way of explaining an activity or concept.

Structure of Focus Four Lessons**Construction Focus Four Module consists of four lessons:**

- Fall Hazards (F)
- Struck-By Hazards (S)
- Caught-In or -Between Hazards (C)
- Electrocution Hazards (E)

Four topics for each lesson are:

- What is a [F; S; C; E] hazard?
- What are the major types of [F; S; C; E] hazards in construction?
- How can I protect myself from [F; S; C; E] hazards?
- What is my employer required to do to protect workers from [F; S; C; E] hazards?

Lesson Structure

- Overview: purpose, topics, materials needed, training preparation, student handout list.
- Instruction for this session – includes activity options for lesson
- Topics 1: sections are, A. Definition, B. Examples, C. Statistics; practice/questions to ask/discuss at the end – Instructor notes are included in the designated “Notes” area
- Topics 2 – 4: Specific to topic – sections labeled A, B, C, etc.; classroom exercises are offered throughout with practice/questions to discuss at the end – Instructor notes are included in the designated “Notes” area
- Summary of lesson topic content
- Reference/Sources – list of sources used to develop lesson/topic content
- Questions for Review: Six questions measuring goal of lesson. Each multiple-choice question has correct answer and two distracters (a., b., and c.)
- Appendix: Specific to topic content, can include instructor and student copies of Questions for Review [test]; lesson activities; student handouts, etc.

Software Used to Develop Training Materials

- All word document files were developed using Microsoft Word® 2003; therefore, it is compatible with this and higher versions of the product.
- All slide presentation files were developed using Microsoft PowerPoint® 2003; therefore, it is compatible with this and higher versions of the product.

IMPORTANT NOTE:

Scenarios from various sources such as, OSHA Fatal Facts, etc. are used for classroom activities. Each of the scenarios, examples, etc. unless otherwise noted, are presented in their “as-is; at that date” state. They are included to reinforce hazard recognition not standard requirements enforcement; therefore, the detailed information and recommendations may refer to guidelines, standards, and/or requirements that were relevant but are not currently used or enforceable. An example is that OSHA issued a new Subpart CC for cranes and derricks in July of 2010; therefore, any reference to cranes and derricks prior to that date will represent previous standards (i.e., Subpart N).

DISCLAIMER:

*This Compliance Assistance product is **not** a standard or regulation, and it creates no new legal obligations. The Compliance Assistance product is advisory in nature, informational in content, and is intended to assist employers in providing a safe and healthful workplace. Pursuant to the Occupational Safety and Health Act, employers must comply with safety and health standards promulgated by OSHA or by a State with an OSHA-approved State Plan. In addition, pursuant to Section 5(a)(1), the General Duty Clause of the Act, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take reasonable steps to prevent or to abate the hazard. However, failure to implement these recommendations is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.*

**29 CFR 1926 Subpart C - General Safety and Health Provisions:
Excerpts Listing Paragraphs Key to Worker Safety**

Attachment: 1926 Subpart C Key Paragraphs

1926 Subpart C [1926.20 - 1926.35] – This subpart is considered as more of a “find and fix” regulation requiring employers to do frequent and regular inspections, fix the problems, and implement necessary programs. Only key points of the paragraphs of this subpart are included here; to view the entire subpart, go to: www.osha.gov

1926.20 General safety and health provisions.

- 1926.20(b) Accident prevention responsibilities.
- 1926.20(b)(1) It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with this part.
- 1926.20(b)(2) Such programs shall provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers.
- 1926.20(b)(3) The use of any machinery, tool, material, or equipment which is not in compliance with any applicable requirement of this part is prohibited. Such machine, tool, material, or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.
- 1926.20(b)(4) The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

1926.21 Safety training and education.

- 1926.21(a) General requirements. The Secretary shall, pursuant to section 107(f) of the Act, establish and supervise programs for the education and training of employers and employees in the recognition, avoidance and prevention of unsafe conditions in employments covered by the act.
- 1926.21(b) Employer responsibility.
- 1926.21(b)(1) The employer should avail himself of the safety and health training programs the Secretary provides.
- 1926.21(b)(2) The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.

1926.23 First aid and medical attention.

- First aid services and provisions for medical care shall be made available by the employer for every employee covered by these regulations.

1926.24 Fire protection and prevention.

- The employer shall be responsible for the development and maintenance of an effective fire protection and prevention program at the job site throughout all phases of the construction, repair, alteration, or demolition work.

1926.25 Housekeeping.

- 1926.25(a) During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
- 1926.25(b) Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.
- 1926.25(c) Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse.

1926.26 Illumination.

- Construction areas, aisles, stairs, ramps, runways, corridors, offices, shops, and storage areas where work is in progress shall be lighted with either natural or artificial illumination.

1926.27 Sanitation.

- Health and sanitation requirements for drinking water are contained in Subpart D of this part.

1926.28 Personal protective equipment.

- 1926.28(a) The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates the need for using such equipment to reduce the hazards to the employees.

**29 CFR 1926 Subpart C - General Safety and Health Provisions:
Excerpts Listing Paragraphs Key to Worker Safety**

1926.32 Definitions. The following definitions shall apply in the application of the regulations in this part:

- 1926.32(d) **"Authorized person"** means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.
- 1926.32(f) **"Competent person"** means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- 1926.32(i) **"Designated person"** means "authorized person" as defined in paragraph (d) of this section.
- 1926.32(m) **"Qualified"** means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.
- 1926.32(q) **"Shall"** means mandatory.
- 1926.32(r) **"Should"** means recommended.

1926.34 Means of egress.

- 1926.34(a) "General." In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.
- 1926.34(b) "Exit marking." Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants.

- 1926.34(c) "Maintenance and workmanship." Means of egress shall be continually maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

1926.35 Employee emergency action plans.

- 1926.35(a) "Scope and application." This section applies to all emergency action plans required by a particular OSHA standard. The emergency action plan shall be in writing (except as provided in the last sentence of paragraph (e)(3) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.
- 1926.35(b) "Elements." The following elements, at a minimum, shall be included in the plan:
 - 1926.35(b)(1) Emergency escape procedures and emergency escape route assignments;
 - 1926.35(b)(2) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;
 - 1926.35(b)(3) Procedures to account for all employees after emergency evacuation has been completed;
 - 1926.35(b)(4) Rescue and medical duties for those employees who are to perform them
 - 1926.35(b)(5) The preferred means of reporting fires and other emergencies; and
 - 1926.35(b)(6) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.
- 1926.35(c)(1) The employer shall establish an employee alarm system which complies with 1926.159.
- 1926.35(d) "Evacuation." The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.
- 1926.35(e)(1) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.