

THE PINK TO GREEN TOOLKIT: HEALTH AND SAFETY ISSUES FOR WOMEN IN CONSTRUCTION

CREATED BY WIDER OPPORTUNITIES FOR WOMEN FOR THE GREENWAYS
INITIATIVE

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TOOL 6.1 FACILITATOR GUIDE

In addition to the primary safety and health hazards faced by all construction workers, female construction workers face specific safety and health issues. A number of issues—ranging from restricted access to sanitary toilets, to poor on-the-job training, to protective clothing and equipment in the wrong sizes—adversely affect women's ability to perform their jobs safely. Women also face safety and health concerns arising from working in a male-dominated workplace, where a macho culture often still prevails.

This tool is a manual for instructors teaching a curriculum module to occupational training participants. This module addresses the intersection of gender with safety and health. It provides examples of practices and policy to ensure that women have a safe and healthy work environment. The guide includes supplemental handouts, exercise sheets, and references. This module can be integrated into a general pre-apprenticeship training curriculum.

This tool is also part of the pre-apprenticeship Multi-Craft Core Curriculum of the Building and Construction Trades Department, AFL-CIO.

WHO SHOULD USE THIS TOOL

Occupational training instructors

THE PINK TO GREEN TOOLKIT

This tool is part of *The Pink to Green Toolkit: Adding a Gender Lens to Green Jobs Training Programs*, created by Wider Opportunities for Women for the GreenWays initiative. All tools are available online at: www.jff.org/pinktogreen

The GreenWays initiative provides high-quality workforce services to employers and to workers seeking to advance their careers in the green economy. The initiative invests in 20 workforce partnerships across six diverse industry sectors

in eight metropolitan labor markets. It builds on JFF's approach of organizing employers and workforce resources into sectoral workforce partnerships to promote career advancement for lower-skilled workers. GreenWays is supported by grants from the U.S. Department of Labor through Pathways Out of Poverty and the Green Jobs Innovation Fund.

www.jff.org/initiatives/greenways

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OVERVIEW

While women face the same health and safety hazards faced by all construction workers, there are health and safety issues unique to female construction workers. Research revealed a number of gender specific issues—ranging from restricted access to sanitary toilets, protective clothing and equipment in the wrong sizes, to poor on-the-job training—that adversely affect women’s ability to perform their jobs safely. Women also face health and safety concerns arising from working in a male-dominated workplace, where a macho culture may still prevail. Health and safety concerns can arise when women find themselves isolated, unwelcomed or not fully integrated into the workforce and subjected to harassment and discrimination.

This module will identify where gender intersects with health and safety and provide examples of practice and policy that ensure women have a safe and healthy work environment.

LEARNING OBJECTIVES

Students will be able to:

- > Describe why gender matters in health and safety issues in the construction industry.
- > Describe how health and safety issues are impacted by gender.
- > Describe how issues that are specific to gender can be safety concerns.
- > Demonstrate what individuals can do to protect themselves and their coworkers.
- > Promote equitable health and safety practices and policies in the workplace.

MODULE-AT-A-GLANCE

[3.75 Hours]

The lesson plan is divided into three parts: **Why Gender Matters**; **Gender Impact**; and **Advocating for an Equitable Workplace**. The module is designed to be flexible and can be tailored to class schedule, class size, time constraints and program needs.

SESSION #	SESSION TITLE	TIME
1.	WHY GENDER MATTERS IN HEALTH AND SAFETY	30 Minutes
	1.1 Introduction and Overview	5 Minutes
	1.2 Why Gender Matters	10 Minutes
	1.3 Testing HASWIC Knowledge	15 Minutes
2.	GENDER IMPACT ON HEALTH & SAFETY	1.75 Hours
	2.1 Areas Where Gender Impacts Health & Safety	45 Minutes
	2.2 An In-Depth Look at the Issue Areas	1 Hour
3.	ADVOCATING FOR AN EQUITABLE WORKPLACE	1.5 Hours
	3.1 Identifying Hazards and Limitations	30 Minutes
	3.2 Protecting Yourself and Coworkers on the Job	15 Minutes
	3.3 Improving Workplace Safety for All Workers	30 Minutes
	3.4 Review and Closing	15 Minutes

MATERIAL LIST

MODULE MATERIALS

- > PowerPoint Presentation
- > Quiz
- > Handout

SUPPLIES/EQUIPMENT

- > Flipcharts
- > Markers
- > Projector and Screen
- > Index Cards
- > Personal Protective Equipment (PPE) and Personal Protective Clothing (PPC) Examples

FACILITATOR INSTRUCTIONS

SESSION 1: WHY GENDER MATTERS IN HEALTH AND SAFETY

[30 Minutes]

MATERIALS NEEDED:

- > PowerPoint slides [related slide number indicated in brackets]
- > Projector and screen
- > Flipcharts and markers
- > Handout:
 - » **Tool 6.2** HASWIC Quiz

1.1 INTRODUCTION AND OVERVIEW

[5 Minutes]

Introduce the module by defining HASWIC (Health and Safety of Women in Construction) and providing a brief overview of the topic by summarizing the following:

In addition to the primary health and safety hazards faced by all construction workers, there are health and safety issues specific to female construction workers. Research has revealed a number of issues—ranging from restricted access to sanitary toilets, protective clothing and equipment in the wrong sizes, and poor on-the-job training—that adversely affected women’s ability to perform their jobs safely. Women also face health and safety concerns arising from working in a male-dominated workplace, where a macho culture may still prevail. Health and safety concerns can arise when women find themselves isolated, unwelcomed or not fully integrated into the workforce, and subjected to harassment and discrimination. This module will identify where gender intersects with health and safety and provide examples of practice and policy to ensure that women have a safe and healthy work environment.

Review the **Learning Objectives** for this module listed on [Slide 2].

1.2 WHY GENDER MATTERS

[10 Minutes]

Engage students in a brief discussion to set the topic. Ask students for examples of health and safety issues that might be different because of gender. Ask students to explain why gender differences matter in construction work.

Summarize points raised by the students and review [Slides 3-4].

Introduce the report and key findings of the Safety and Health of Women in Construction Workgroup of the U.S. Department of Labor’s OSHA Advisory Committee on Construction Safety and Health (ACCSH) as outlined on [Slide 5].

Identify the research reports/studies that the data cited in this module are drawn from as listed in Appendix B.

Review the key points of the report:

- > The HASWIC report offers quantitative and qualitative evidence that demonstrates the depth of the problem.
- > The HASWIC committee also conducted a literature review as well as meetings with safety and health experts.
- > Very little information has been collected on the safety and health concerns of women construction workers.
- > The HASWIC report and its recommendations were adopted by ACCSH.
- > OSHA and the National Institute of Occupational Safety and Health developed publications and presentations, and web related materials.

1.3 TESTING HASWIC KNOWLEDGE

[15 Minutes]

ACTIVITY:

Distribute the **HASWIC Quiz** and give students a few minutes to work individually to complete the quiz. Have students work in pairs to discuss the questions and compare their answers.

Ask for a volunteer to read the first question and give his or her answer. Engage the group in discussion on each point. Rotate volunteers for each question.

Review questions and comments from the students and summarize with the following key points:

- > There is still a lack of awareness, understanding and recognition of this issue. Only one major labor institution acknowledges that sexual harassment can also be a safety and health concern.
- > Other institutions where women's numbers are beginning to grow are addressing some safety and health issues related to gender, including the U.S. military, police and fire departments, and athletic associations.
- > OSHA does care about issues like sanitary facilities and requires employers to provide gender-specific sanitary facilities at farm labor sites.
- > Overlooked safety and health concerns related to gender are not incidental or experienced by only a few with minor consequences.
- > OSHA is a relatively new agency; it was only authorized in the 1970s.

SESSION 2: GENDER IMPACT ON HEALTH & SAFETY

[1.75 HOURS]

MATERIALS NEEDED:

- > PowerPoint slides [related slide number indicated in brackets]
- > Projector and screen
- > Flipcharts and markers
- > Index cards

2.1 AREAS WHERE GENDER IMPACTS HEALTH & SAFETY

[45 Minutes]

Introduce the next activity by explaining that the HASWIC report identified seven issue areas where gender has an impact on health and safety. Use [Slide 6] to review the seven issue areas and provide a brief explanation and example for each.

Prepare flipcharts in advance with headers listing each of the seven issue areas:

1. Sanitary Facilities
2. Personal Protective Equipment
3. Ergonomics
4. Workplace Culture
5. Reproductive Hazards
6. Health and Safety Training
7. Injury and Illness Data and Research

ACTIVITY:

STEP 1: Divide the class into seven small groups and assign each group one of the issue areas; have each group appoint one member to serve as the reporter/facilitator.

STEP 2: Give the groups five minutes to define the issue and identify one example, recording their responses on the flip chart.

STEP 3: After the groups have completed the task, rotate them to the next flipchart; ask them to identify another example for the next issue area.

NOTE: The reporter/facilitator stays with his or her chart to facilitate the discussion with the next group—he or she does not rotate.

STEP 4: Continue rotating until every group has had an opportunity to discuss each category.

REPORTS:

Have each reporter/facilitator share one main idea from his or her category. Summarize the discussion and highlight key points.

2.2 AN IN-DEPTH LOOK AT THE ISSUE AREAS

[1 Hour]

Prepare in advance index cards with quotes for each issue area taken from the background information provided in Appendix C.

Prior to beginning the review, give each student an index card with a quote. Ask students to hold on to the card and share the quote during a review of the appropriate section. Invite the class to share any additional anecdotes they may have related to a category.

Provide an explanation and review of the seven key issue areas using [Slides 7-21] and the reference information in Appendix C (including data, quotes and examples).

Ask questions to engage students in discussion during the review. For example:

- > What are some issues related to sanitary facilities for women?
- > What are examples of PPE/PPC?
- > Why might the use of sanitary facilities be an issue for women on the use of PPE?
- > How might workplace culture affect women's ability to do a quality job?

Summarize the discussion and review points; transition to the next session by explaining that it is important to be proactive in health and safety. The next session will address what we can do as workers to ensure an equitable and safe workplace.

SESSION 3: ADVOCATING FOR AN EQUITABLE WORKPLACE

[1.5 Hours]

MATERIALS NEEDED:

- > PowerPoint slides [related slide number indicated in brackets]
- > Projector and screen
- > Flipcharts and markers
- > Examples of PPE/PPC
- > Handout:
 - » [Safety Tips for Women in Construction](#)

3.1 IDENTIFYING HAZARDS AND LIMITATIONS

[30 Minutes]

ACTIVITY:

Ask for volunteers to demonstrate hazards, limitations or potential for strains based on gender differences using the PPE/PPC. If time permits, provide every student an opportunity to identify hazards/limitations using the PPE. Students can demonstrate:

- > Proper lifting and handling techniques designed for women's bodies
- > Safe lifting techniques
- > Proper material handling
- > Fit-testing of PPE
- > Physical fitness exercises linked to the training

Ask students to identify actions they can take as workers to minimize or reduce the hazards they have demonstrated.

3.2 PROTECTING YOURSELF AND COWORKERS ON THE JOB

[15 Minutes]

Transition from the demonstration by explaining that while it is ultimately the responsibility of the employer to maintain a safe and healthy workplace, it is also important for each worker to be knowledgeable about health and safety practices, to actively participate in training, and to be proactive in looking out for his or her own health and safety.

Distribute or project [Safety Tips for Women in Construction](#) and review.

3.3 IMPROVING WORKPLACE SAFETY FOR ALL WORKERS

[30 Minutes]

Conduct a discussion on how making the workplace safe for women improves safety for all workers. If needed, highlight the following quote to spur discussion:

"I think the guys have problems also, but they take it for granted. They accept the conditions as part of this rough world that they function in" –tradeswoman, survey

Reinforce that gender mainstreamed improvements in the workplace benefit both male and female workers.

ACTIVITY:

Divide students into small groups of 4-6 and ask each group to discuss and identify:

1. An improvement in the workplace that would benefit all workers and results from incorporating a gender lens; and
2. A recommended action an employer, union, or individual worker could take to promote HASWIC.

Have groups record their group's responses on flipchart paper.

Refer back to **[Slide 9]** as an example of a state regulatory change to support HASWIC (full reference in Appendix D). Other possible examples:

- > Better sanitary facilities for all
- > More fit-testing to ensure all workers adequate PPE
- > More respectful and productive workplace
- > Better attention to safety
- > Less adherence to the unsafe practices supported by a "macho" culture
- > Less fear of reprisal for asking for health and safety practices
- > More knowledge about chemical and material health hazards

REPORTS:

Have the groups report out the workplace improvement and recommended action(s).

Summarize group reports and reinforce key points. Time permitting, highlight other possible recommendations to support HASWIC including:

REPRODUCTIVE HAZARDS

- > OSHA should adopt standards similar to the American College of Occupational Medicine's *Reproductive Hazards Management Guidelines* to protect all workers of childbearing capacity and pregnant construction workers.
- > OSHA should identify additional research needed to develop a more comprehensive body of knowledge regarding reproductive hazards in the construction workplace.
- > Employers should have a Material Safety and Data Sheet (MSDS) for each chemical present on the site. Employees should read all MSDS and share information with their physicians, if they are pregnant or planning on becoming pregnant.

3.4 REVIEW AND CLOSING

[15 Minutes]

Review the module content and the information generated by students during the small group work. Ask students to reflect upon the module and what they learned and write down on a sheet of paper:

- > The most helpful thing they learned from the HASWIC training
- > One thing they will do to support HASWIC

Have each student shares his or her comments. Summarize and connect student comments to the module-closing summary. Conclude the module with a review of **[Slides 22-25]** and by reinforcing the following key points:

- > Gender inequity and gender differences create distinct health and safety issues for women.
- > The lack of a "gender lens" on safety and health issues has a disparate impact on women.
- > Women face safety and health concerns arising from working in a male-dominated workplace.
- > There are seven issue areas where gender impacts safety and health.
 - » Workplace culture
 - » Sanitary facilities
 - » Personal Protective Equipment
 - » Ergonomics
 - » Reproductive Hazards
 - » Health and Safety Training
 - » Injury and Illness Data and Research
- > It is incumbent upon each worker to participate in training. It is equally important for workers to be knowledgeable about health and safety practices, and proactive in looking out for their own health and safety.
- > Making improvements in the workplace that are a result of attention to gender can benefit all workers.

APPENDIX A—MATERIALS GUIDE

The following is list of associated tools and handouts.

FACILITATOR GUIDE

- > **Tool 6.1** HASWIC - Facilitator Guide

HANDOUTS

- > **Tool 6.2** HASWIC Quiz (with Answer Guide)

RESOURCES

- > **Tool 6.3** HASWIC - PowerPoint Presentation
- > [Safety Tips for Women in Construction](#)
- > OSHA Report: [Women in the Construction Workplace: Providing Equitable Safety and Health Protection](#)

APPENDIX B—RESOURCES AND REFERENCES

USDOL's OSHA Advisory Committee on Construction Safety and Health (ACCSH)

<http://www.osha.gov/doc/accsh/haswicformal.html>

- > HASWIC - Health and Safety of Women in Construction 2000:
 - » Report developed by the Advisory Committee on Safety and Health in Construction
 - » Summary findings from three studies that were designed to help identify and understand the health and safety hazards encountered by female construction workers. The first study, conducted by Chicago Women in Trades (CWIT), used mail surveys, phone interviews, and focus groups to ask 200 Chicago area tradeswomen about issues affecting their work
 - » Two National Institute of Occupational Safety and Health (NIOSH) studies focused specifically on health and safety issues affecting women construction workers
 - » Fifty-five tradeswomen participated in the first NIOSH study through focus groups, one-on-one interviews, or surveys
 - » Second NIOSH study collected data from 213 tradeswomen during half-hour phone surveys
- > Boston HASWIC Working Group
- > Ergonomics for Women in the Trades, Jennifer Hess, DC, MPH, Labor Education and Research Center, University of Oregon

APPENDIX C—GENDER ISSUE AREAS BACKGROUND AND DATA

1. SANITARY FACILITIES

Clean, private, and accessible bathroom and hand washing facilities are rights most workers take for granted. Facilities on construction jobs sites can take many forms, many of which pose a challenge to private and hygienic use. For this reason, tradeswomen may avoid using facilities or require extra time to find a usable facility. As a result, some tradeswomen face health challenges, such as urinary tract infections or heat stroke from not consuming enough liquids.

- > In CWIT's report, 80% of tradeswomen reported encountering worksites with dirty or no toilets.
- > 35% of the women in the second NIOSH survey answered "false" to the statement, "There are clean toilets at most jobsites."

In *Lynch vs. TVA-1987 U.S. Appeals Court decision*, Eileen Lynch, a female carpenter apprentice with the Tennessee Valley Authority (TVA), was fired for using the large, clean, fully equipped restrooms in the main building of the plant, which was off-limits to construction personnel. She used these restrooms occasionally, after her doctor diagnosed her with a bladder infection. Some of the men she worked with used them regularly and were not disciplined. The construction site contained two portable toilets for women, one at each end of the work area, and 21 other portable toilets not designated by sex, but primarily used by men. The portable toilets were dirty, often had no toilet paper or paper that was soiled, and were not equipped with running water or sanitary napkins. In addition, those designated for women had no locks or bolts on the doors and one of them had a hole punched in the side. To avoid using the toilets, Ms. Lynch began holding her urine until she left work. Within three days after starting work, she experienced pain and was advised that the practice she had adopted, as well as her use of contaminated toilet paper, frequently caused bladder infections.

2. PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

PPE/PPC refers to clothing and equipment that is worn by an individual in the workplace to protect him/her from hazards. Most PPE/PPC is not properly designed to fit women's body sizes. Studies by NIOSH and the U.S. Department of the Army found that most tools, equipment, and clothing are not designed for a woman's physique. Poor fit compromises protection and may mean no fit and unworn PPE.

Additional concerns related to PPE are also related to workplace culture. When women are more concerned about "fitting into" the workplace, they may be reluctant to stand out as being different from male workers in taking safety and health precautions. For example, some women would not use PPE if men were not using the equipment. Another issue is the ability to find PPE/PPC made to fit women. Given the small number of women in the trades, it is hard to create enough demand to get manufacturers to create necessary products. A survey of manufacturers of protective equipment, taken at a National Safety Council Annual meeting, found that only 14% offered ear, head, and face protection in women's sizes and only 59% offered foot protection in women's sizes. 46% of the tradeswomen in the NIOSH survey responded that they had difficulty finding work shoes; another 41% reported difficulty in finding work gloves.

The following are issues related to PPE/PPC:

1. Studies by NIOSH and the U.S. Department of the Army found that most tools, equipment, and clothing are not designed for a women's physique (HASWIC report).

"I went to get up in a full suit the other day, and you couldn't see me! I mean, I don't want these. Just give me my coat, and I'll put on a couple pairs of coveralls. Sizes . . . we need our sizes . . . women's sizes."

2. Poor "fit" may mean no fit and unworn PPE

3. "One size fits all" means "all men"

4. Women's sizes are not just small men's sizes

5. Poor fit compromises protection

6. Poor fit compromises production (Moir, Boston HASWIC).

Improperly-fitting equipment can also mean:

- » Working less efficiently: Over-sized gloves may cause a worker to grasp a tool tighter than she should in order to get a good grip
- » Slower work (muscular fatigue and frequent readjustments of gloves can slow a worker down)
- » Greater number of errors
- » Difficulty in doing certain tasks (e.g., jobs requiring fine, detailed movements)

"When I went through the welding apprenticeship...they issued us welding boots, size 9-1/2, I had to wear two pairs of socks to wear them. They gave me a welding leather jacket that was a foot longer than my hand. I had to roll it up. And they said that they couldn't order anything smaller. They gave me gloves so humongous, I couldn't even pick anything up."

7. Poor fit compromises long-term health—more risk of exposure to irritants and toxic matter, if it is not secure and tight.

8. Bad fit is a safety hazard—ill-fitting equipment may expose workers to additional risks.

"You can be hurt. . . If you happen to have a pair of gloves on, and they're too big, and say you're doing some work, that glove could get wrapped up in a fan belt or . . . anything . . . with moving parts . . . you can get hurt . . . if your clothing is not fitted right."

The leading cause of worksite fatalities in the construction trades is falling from a dangerous height. But standard fall harnesses aren't manufactured to fit women.

"They cut them right in the breasts," said Debra Chaplan, director of special programs for the State Building and Construction Trades Council. "Some jobsites have started using ones that form a triangle around the chest, but that just opens women up to even more sexual harassment."

9. Creating enough demand to get manufacturers to create necessary products.

A survey of manufacturers of protective equipment, taken at a National Safety Council Annual meeting, found that only:

- > 14% offered ear, head, and face protection in women's sizes

- > 59% offered foot protection in women's sizes

Tradeswomen in the NIOSH survey responded to the query about their ease and ability in finding protective clothing to fit:

- > 46% of women said "no" with respect to work shoes
- > 41% of women said "no" with respect to finding work gloves

Additional concerns related to PPE are also related to workplace culture. When women are more concerned about "fitting in" in the workplace, they may be reluctant to stand out as being different from male workers in taking safety and health precautions, for example using PPE, if the men were not using it.

3. ERGONOMICS

The study of ergonomics refers to those factors or qualities in the design of a workplace or equipment that contribute to comfort, efficiency, safety, and ease of use. Women's health and safety are at risk when using inappropriately sized tools or equipment. For example, most tools and equipment are designed for the male physique. Handle size and tool weight are designed to accommodate the size and strength of men. The average hand length of a woman is 0.8 inches shorter than the average man's and a woman's grip strength averages two-thirds the power of a man's grip. The grips of tools are typically too thick. Tools like pliers require a wide grasp, which puts inappropriate pressure on the palm, leading to the loss of functional efficiency and potential strain for the user. Also, a woman's knee joint angle is greater than a man's by 5 degrees due to broader hips. This means the average woman's knees are under slightly more stress than a man's knees.

General support for ergonomics standards in the construction industry has a long way to go before gaining acceptance by employers. Ergonomic adjustments to a smaller segment of the workforce can be costly. In addition to the poor design, a lack of training on how best to use tools and equipment designed for men can contribute to unsafe or unhealthy use. Productivity vs. ergonomics is also a consideration for employers. For example, employers and managers are not inclined to slow down the pace of work to adjust the equipment to each individual worker. But this mentality may be changing, which may signal greater ergonomics adjustments for women in the workplace.

The following are examples of ergonomic concerns women face:

1. Ergonomics/safe lifting studies generally evaluate only male workers.

2. Female body size and build require distinct techniques for lifting and handling, or performing tasks, or reaching equipment controls.

Women's size and body build require reconsideration of techniques for lifting and material handling. Not only do women come in all sizes and with varying degrees of muscular strength, their pelvic structure is different and their center of gravity is lower. This would affect jobs that require standing at a workstation. Lower equipment handles would facilitate the use of body weight in pushing and pulling tasks. A woman's leg strength is more equivalent to a man's muscular strength. Thus, women would be on more equal footing with men if their workload was transferred downward, with less reliance on the strength of hands and arms.

"You learn what not to do. . . . I have a body, I can use it from here [top of head] down to my feet. I don't have to use my upper body. They [male workers] have upper body strength where we have it [strength] from here [top of head] to our toes. The guys will . . . grunt and groan and struggle . . . and I'll sit down, put my feet on one side [of the wrench], and pull on the other. . . . That's what I consider using my brain instead of my brawn."

"How to lift and how to bend—I didn't learn this until I ended up on physical therapy. I think that it's something we really need to look at, especially for individuals going into non-traditional work, is the way you lift and bend and move."

3. Tool and equipment size are often designed for a masculine physique. Handle size and tool weight are designed to accommodate the size and strength of men, yet the average hand length of a woman's is 0.8 inches shorter than the average man's hand length. A woman's grip strength averages two-thirds the power of a man's grip. The grips of tools are typically too thick for a woman's hand size. Tools like pliers require a wide grasp, which puts inappropriate pressure on the palm, leading to the loss of functional efficiency.

4. Poor workplace design, and a lack of training on how to best use tools and equipment designed for men can contribute to unsafe or unhealthy equipment use. Ergonomic adjustments, however, to a smaller segment of the workforce, can be a costly endeavor.

5. Productivity vs. Ergonomics. A May 2009 article in Midwest Construction on-line magazine reported:

"Many companies are already willing to make the investments." John Langford, corporate safety director at James McHugh Construction in Chicago, says that based on feedback from workers in the field, the company is generally willing to invest in more ergonomic equipment and tools.

"You get an older guy who ran a 90-lb hammer for years, and all he did was go home with sore hands," Langford says. "Now he runs a hammer with shock absorption and he says, 'This is really nice because my hands don't go numb.'"

Langford says that even without regulations, the industry is beginning to view ergonomic advances as less of an option and more of a necessity.

"You look at the equipment out there now, and it was the market that drove that, not regulations." He adds, "Companies like us are doing this because our people are our most important asset. Every time we lose a guy to injury, we have to replace him and that's not easy. We're trying to do it for our own survival."

4. WORKPLACE CULTURE

Women face many challenges when entering the male-dominated world of construction. A hostile workplace presents safety and health concerns on several levels, ranging from a lack of training and safety information to sexual harassment and physical assault. Distractions while working can lead to taking improper safety precautions, resulting in on-the-job injuries. The effects of a hostile workplace are reflected in acute as well as chronic stress reactions. In addition to facing and coping with direct hostile behavior, many tradeswomen report that they are reluctant to report workplace safety and health problems because they fear that they be may tagged as complainers, and risk further straining their workplace relationships, and jeopardizing their employment situation. Women in the first NIOSH study reported that they could not bring up the issue of proper restrooms or worksite safety because they feared it might threaten their job security. In a hostile environment, where women already feel vulnerable, calling attention to these problems is not always possible or productive. Women feel that complaining about safety issues does not win points with other workers. This is evidenced by data from the CWIT and NIOSH surveys:

- > In the NIOSH study, 41% of tradeswomen responded that they were mistreated by coworkers and/or supervisors, because they were female.
- > The findings also showed that harassment by coworkers and/or supervisors was an important predictor for symptoms of increased psychological and physiological distress.
- > According to CWIT's study, tradeswomen find the sexist attitudes (and accompanying behavior) present on construction sites intolerable and stressful. The women also reported negative behavior ranging from belittling remarks and constant checking of their work to threats of physical violence.
- > Fifty-two of the survey respondents in the CWIT study reported that men refused to work with them during their construction careers.

The following are examples of how workplace culture has an impact on women's safety and health:

1. Working as the only female on a job site or being ostracized by coworkers evokes both fear of assault and stress. Fifty-two of the survey respondents in the CWIT study reported that men refused to work with them during their construction careers.

"When you have more than one woman working with you, you have a better chance. You don't want to be alone. The stress is incredible. I had too many illnesses because of that. The more women there are, the more the climate begins to change. I don't have close friendships with the other women, but the fact that there are more women helps."

2. Lack of training

Informal training is critical to the apprenticeship system of education. Journeypersons provide guidance and lessons for apprentices on the job site throughout the workday. Men who may be resentful, uncomfortable with, or hostile to women on jobsites can withhold essential training. Tradeswomen can further be limited by seemingly helpful workers who act to protect female workers from difficult assignments. Many women report that they are often assigned to routine, menial jobs - often without opportunities for learning the trade. Rather than progressing to more complex tasks, they do the same task repeatedly. Women report that often they are not given the variety of assignments needed to adequately learn their trade. For example, a cement finisher in the CWIT study reported:

"Nobody really talked much to me on my first day on the construction site. But at the end of that first day one fellow said, 'I'm not going to train her so she can take my job.'"

"They won't show how they're actually feeling. But they do these little snotty things, set things up backwards and so on. I learn how to do things backwards before I learn the right way. You have to figure it out yourself."

"My supervisor thinks he's doing well by us [women] by having us do the easiest jobs, but I'm almost a third year apprentice, and I should be more advanced. He's one of those overprotective kinds of people."

3. Hazing vs. Ongoing discrimination

Many tradeswomen report that their physical strength is often "tested" by their male coworkers, when they are asked to lift or carry materials that normally two people would carry. Tradeswomen say that they often overcompensate in their work to "prove" themselves to their coworkers and bosses. Many new male apprentices experience a period of hazing at first, but for women this poor treatment persists. It is intended not to "test," but to drive women away.

4. Lack of job security, or fear of alienation from male colleagues limits hazard reporting

"Women in the construction trade . . . can't go out there whining . . . or we can't go out there and complain. We just have to bite our lip and deal with it if we want to keep our job and if we want to get along with fellow workers."

"Tradeswomen are targeted for early layoffs anyway, so you can't be putting them in positions to get themselves in trouble."

5. Sexual harassment continues to be a workplace issue for women and men in all kinds of occupations, but it is particularly pervasive in the construction workplace. In the CWIT study, tradeswomen reported the following forms of sexual harassment:

- » 88% had been confronted with pictures of naked or partially dressed women;
- » 83% experienced unwelcome sexual remarks;
- » 57% reported being touched or asked for sex;
- » In the second NIOSH study, 34% of the tradeswomen answered "true" to the question: "In the last year, have

coworkers and/or supervisors made unwanted sexual suggestions about, or references to, sexual activity?";

- » 16% said that they had experienced unwanted physical contact, including that of a sexual nature, from coworkers and/or supervisors during the last year; and
- » 43% of tradeswomen in a Massachusetts survey had, at some point in their career, experienced uninvited sexually suggestive looks, comments, joking, or gestures from their supervisors. 72% reported the same from coworkers. (Unpublished findings from a survey conducted in 1989 in cooperation with the Massachusetts-based Women in the Building Trades.)

Tradeswomen describe physical responses to the pornography that is often a common sight on the construction site. As one tradeswoman from the CWIT study commented:

"Some of the pictures they had on their lockers made me sick. I don't mean Playboy stuff, although I don't like that either. It was the Penthouse and the Hustler stuff that made me feel so angry."

6. Assault or placing someone in harm's way

Tradeswomen tell of threats of physical harm, sabotaged work, and being placed in dangerous situations by male coworkers and supervisors. In a NIOSH phone survey, 10% of the women reported having their work vandalized, and 10% had experienced threats of physical violence by coworkers and/or supervisors. A tradeswoman from the CWIT study reported that when she applied for an apprenticeship with the ironworkers she was threatened by other male applicants. Male applicants reportedly warned her:

"You may get this job because of the government, but you won't leave it alive. We'll be on a site with you some day, and we'll take care of that."

Other tradeswomen from the CWIT study also experienced physical threats:

"I was going down a ladder one day that was, I don't know how many stories, and he [her foreman] came over there and took the ladder and started shaking it. If I had fallen I'd be dead, I was just that high. I said, 'Stop shaking the ladder,'

but he kept shaking it and laughing, saying 'She's scared, she's scared.'"

"Sometimes they drop things on you, hammers and wrenches-dangerous things like that, supposedly by accident, from ladders or scaffolding."

7. A hostile work environment can cause distraction from tasks. As this tradeswoman from the CWIT study describes:

"There was a lot of harassment. One time one man said to me in front of twelve other men, 'I'd like to eat the lining out of your stuff.' I ran out of that trailer crying. One man came out of the trailer and said, 'He's just high, don't let it bother you.' But it did bother me. The other men started making lots of remarks after they found I was going to file a suit. I fell in a mud hole and almost drowned after that; I wasn't focusing on my work. I got hurt on my next job because of that-I wasn't focusing."

A woman risks performing unsafe work in order to "prove herself" in a male-dominated culture, or as "one of the guys: not someone who expects preferential treatment." A number of women in the NIOSH study reported that oftentimes they did not ask for help because they feared mockery from male colleagues.

Most of the tradeswomen in the NIOSH study were extremely concerned with how they would be perceived by their male colleagues, especially their foremen, if they asked for help. Various tradeswomen commented:

"A lot of times I feel like I've got to do this because I'm a girl, because if I don't they're going to say, 'See, what'd I tell ya, she's a girl. She can't lift it.'"

"I didn't [ask for help], I ended [up] getting myself injured. It took once and one time only. I won't do it again, I won't be too proud to ask for help."

"Women injure themselves more than the men because they refuse help, and they are not allowed to ask for help, and it's a much bigger deal if a woman asks for help."

"I ended up almost hurting myself just to try to prove that I can do the job as well as he. Then it ended up that I got angry, and really told him. I had had enough . . . he was shocked, because I was in his face, and that was it."

8. Productivity vs. Safety: With employer demand for high productivity, workers, especially women, may fear asking for safety precautions that may slow down productivity.

9. Stress is a health problem that can lead to any number of illnesses—physical and mental. Coping with the above elements in a workplace culture where women may feel isolated—as the only representative of their gender—adds stress, in an environment where workers are already facing other dangers and hazards.

5. REPRODUCTIVE HAZARDS

Reproductive hazards are defined as chemical, physical, or biological agents that can cause either reproductive impairment or adverse developmental effects on fetuses. Epidemiologic studies involving reproductive hazards are difficult to perform due to such factors as small sample sizes, confounding factors, and measurement difficulties.

Only a few agents or conditions have been identified as capable of producing structural abnormalities or birth defects, and a fraction of those agents are common to construction sites: PCBs, hypothermia, and for hazardous waste workers, ionizing radiation. However, several agents such as lead, solvents, and pesticides have been recognized to affect sperm development. While these hazards can affect both genders, women face some specific issues that affect their reproductive health. These include:

- > Exposure to hazardous fumes, chemicals, dust, toxic materials, vibration, activity that can cause harm to reproductive organs;
- > Physical capacity concerns during pregnancy; and
- > Lack of guidelines on what constitutes safe work during pregnancy that can lead to denial/limitation of work opportunity.

Although more worksite exposures are known to affect male sperm development than the female reproductive system, some employers find it easier to avoid potential problems by denying women access to jobs, especially pregnant women, despite legal rulings prohibiting employers from continuing this practice. While these actions may stem from good intentions, the consequences result in job discrimination and limited work opportunities for women. This can lead to discriminatory treatment towards tradeswomen and result in a tradeswoman hiding her pregnancy, which may put her life and her unborn

child's life in danger. This discrimination can also result in tradeswomen suffering economic hardships due to the lack of job opportunities:

"I knew they'd tell me I couldn't work if they knew I was pregnant, so I just wore big clothes and said nothing. No one knew, and I worked through my eighth month."

"When I got pregnant my company agreed to give me light duty. But then they laid me off when everybody else was still working. My union wouldn't help me get another job after that, even though they were usually pretty good" (Tradeswomen in the CWIT study).

"When I asked for a job in the fabrication shop instead of climbing a ladder and working the sledge hammer, the safety director told me he had a problem with me working at all since I was pregnant."

6. HEALTH AND SAFETY TRAINING

Women entering the construction workplace are adversely affected by limited skill training and by being assigned to menial tasks. Also, training may be withheld by coworkers, who do not want women to succeed in the industry. Informal networking and mentoring may favor more traditional workers, or protective attitudes from well-meaning coworkers. Thirty-nine percent of the women interviewed in the second NIOSH study answered "strongly agree" or "agree" to the statement, "Overall, I wish that I had been better trained before ever working on a construction site." 31% said that at times they are assigned a task and are not sure how to do it.

In addition, two aspects of the construction culture, a "macho" disdain for safety and a demand for high and fast production, act to inhibit the importance of and attention to attention to health and safety training. 78% of the tradeswomen in the NIOSH study reported that significant shortcuts are taken, which could put a worker's health and safety at risk. As several tradeswomen remarked:

"You can't learn safety by chance, you need direction."

"Many don't want to go to safety meetings. I don't know if it's a machismo thing or what. They're getting paid. But then there's always the contractor or boss breathing down your neck, saying 'how come this [work] wasn't done?' The boss doesn't say, 'You'd better go to that safety meeting because I don't want my workers' comp bill going up this year.'"

7. INJURY AND ILLNESS DATA COLLECTION AND RESEARCH

The ability to provide equitable safety and health measures for all workers requires evidence-based research, good information, and data collection practices that have gender as the platform. Convincing public agencies that monitor and collect health and safety information to incorporate this platform, in addition to having large enough study pools, may be challenging. Hopefully, as more women enter the skilled trades, there will be sufficient data to help employers, unions and apprenticeship programs address gender-based health and safety issues.

APPENDIX D—EXAMPLE FROM CALIFORNIA STATE LAW 1526

TOILETS AT CONSTRUCTION JOBSITES

The American College of Occupational and Environmental Medicine adopted reproductive hazards management guidelines in April 1994, encouraging persons responsible for workplace health and safety to assess their workplaces for potential reproductive hazards and to implement appropriate responses for managing such hazards. Appropriate responses include: communication about potential risks and hazards, temporary reassignment, hazard elimination, and exposure control.

- 1. A minimum of one separate toilet facility shall be provided for each 20 employees or fraction thereof of each sex.**
Such facilities may include both toilets and urinals provided that the number of toilets shall not be less than one half of the minimum required number of facilities.
EXCEPTION: Where there are less than 5 employees, separate toilet facilities for each sex are not required provided the toilet facilities can be locked from the inside and contain at least one toilet.
- 2. Under temporary field conditions, not less than one toilet shall be available.**
- 3. Where the provision of water closets is not feasible due to the absence of a sanitary sewer or the lack of an adequate water supply, non-water carriage disposal facilities shall be provided.** Unless prohibited by applicable local regulations, these facilities may include privies (where their use will not contaminate either surface or underground waters), chemical toilets, re-circulating toilets, or combustion toilets.
- 4. Toilet facilities shall be kept clean, maintained in good working order, designed and maintained in a manner, which will ensure privacy and provided with an adequate supply of toilet paper.**
- 5. The requirements of this section shall not apply to mobile crews having readily available transportation to nearby toilet facilities.**