

**WRITERS AND EDITORS**

Zin Cheung  
Rick Hight  
Fran Hurley  
Kristy Schultz

**PAGE LAYOUT AND DESIGN**

Jitan Patel

**ACKNOWLEDGMENTS**

We thank the following people for their support and assistance in the research and development of this guide:

Jim Albers - NIOSH  
Joanette Alpert - Woodward, Alpert & Associates  
Liz Arioto - Wentz Group  
Dave C. Bare - Cal/OSHA Consultation Service  
RJ Banks - State Compensation Insurance Fund  
Bo Bradley - Harbison Mahony Higgins, Inc  
Ed Calderon - Shea Homes  
Leroy Christopherson - Bolin Construction  
Mario Feletto - Cal/OSHA Research and Education Unit  
John Howard - NIOSH  
Ira Janowitz - UC Berkeley/ San Francisco  
Gene Kindy - KRC Builders  
Stephen Grennan, Jeff Schobel - Body Response, Inc  
Bill Hopkins - Sacramento Police/Sheriff's Memorial Park  
Scott Schneider - Laborers' Health & Safety Fund of N. America  
Laura Stock - LOHP, UC Berkeley  
Corey Strack - Carpenters' Local Union 152  
Marti Stroup - AGC California  
Susan Tingley - Ergonomics & Injury Prevention Services  
Samantha Turner - Swinerton, Inc  
Tom Waters - NIOSH



**CONSULTATION & TRAINING BRANCH**

It provides free on-site consultations for employers that identify workplace hazards, suggests corrective actions and evaluates and makes recommendations to improve an employer's safety and health management system to prevent future hazards. The public can call the Branch to inquire about safety and health standards and other related topics.

State of Hawaii, Department of Labor & Industrial Relations  
Division of Occupational Safety & Health (HIOSH)

**Consultation & Training Branch**

830 Punchbowl Street, Room 425  
Honolulu, HI 96813

Phone: 808-586-9100; Fax: 808-586-9104

<http://hawaii.gov/labor/hiosh>

November, 2008



ERGONOMIC SURVIVAL GUIDE FOR

# CARPENTERS and FRAMERS



What will happen to your family and your lifestyle if you get injured and can't work? What will you lose if you get injured?

- **Your salary**
- **Your quality of life**
- **Your job advancement**
- **Future job opportunities**

**AVOID THE PAIN &  
COST OF AN INJURY**

This SURVIVAL GUIDE is designed to promote awareness of safe work practices for CARPENTERS and FRAMERS.

It was made available by Cal/OSHA, California Dept. of Industrial Relations & modified by HIOSH, Hawaii Dept. of Labor & Industrial Relations, Phone: 808-586-9100.



# What Makes You Hurt?

There are certain things in your job that can lead to fatigue, discomfort, or pain when you do them repeatedly or without breaks. These are:

- Performing the same or similar movement over and over without breaks, rest, or time for recovery.
- Exerting force to perform a task or to use a tool.
- Working in awkward positions such as bending, stooping, twisting, and overhead reaching.
- Remaining in the same position for a long time with little or no movement.
- Continuous pressure from a hard surface or edge on any part of the body.
- Working in extreme temperatures, such as climate or those produced by equipment or machines.
- Sitting on, standing on, or holding equipment that vibrates.

In addition, stressful conditions can increase muscle tension and reduce awareness of proper work technique.

Most common injuries

Back	21%
Fingers/Hands	15%
Knees	7%



# Prepare Yourself for Work

Just as a runner prepares for an athletic event by warming up, you would be wise to prepare for your work day by stretching and doing exercises.

- Stretch a few minutes before and during your work day.
- Stretch S-L-O-W-L-Y and hold each stretch 3-5 seconds.

**Caution:** *If you have any pre-existing conditions, check with your doctor before exercising. If you feel discomfort while exercising, stop immediately!*

## Stretch the Lower Back and Hips



## Stretch each Arm and Shoulder



## Stretch each Leg



**While you are off work,** keep yourself physically ready for returning to work whether it's the next day or later.



“Tool safety is important because you can hurt yourself permanently and never work again... or you will have to find another type of work that you don't like doing”.

Bill H.

## KEEP THE LOAD CLOSE TO YOUR BODY



Carrying a **10 lb.** object that is **10”** from your spine is equal to **100 lbs.** of force on your lower back.



Carrying a **10 lb.** object that is **25”** from your spine is equal to **250 lbs.** of force on your lower back.

## AVOID HEAT ILLNESS:

- Start work early in the day. Avoid extreme heat.
- Wear light-colored and loose-fitting clothing.
- Take frequent breaks in the shade.
- Drink water frequently before, during, and even after work. Drink water even if you are not thirsty.

## WHY?

Heat illness can cause fatigue, dizziness and painful muscle cramps.



**REMEMBER: HEAT ILLNESS CAN KILL IN LESS THAN ONE HOUR OF EXPOSURE TO EXTREME HEAT!**

# Make It Easy on Yourself



**LIGHTEN YOUR LOAD.** Plan what you are going to do. Carry only the tools or equipment you will need. Wear a tool belt that fits and distribute the tools and materials evenly.



**PROTECT YOURSELF.** Avoid prolonged contact with hard surfaces and sharp edges. Wear knee pads, gloves, shoulder pads, or cushioned insoles in your shoes for comfort and protection.



**SELECT THE RIGHT TOOL.** Light weight tools, such as titanium hammers, can help to reduce fatigue and increase productivity. Choose tools that fit your hand and the task.



**PRACTICE GOOD HOUSEKEEPING.** Pick up debris and scrap wood to prevent trips, slips, and falls. Use gloves to protect your hands. Bend exposed nails to prevent puncture wounds. Good housekeeping allows you and your equipment to get closer to your work.



**KNOW YOUR SURROUNDINGS.** Pay attention and watch for others working near you, behind and above you. Be aware of the tools they are using.

# Do I Have a Problem?

**You may, if you have any of these symptoms:**

- Continual fatigue or lack of endurance
- Cold hands, particularly in the fingertips
- Changes in the skin color of your hands or fingers
- Swelling
- Weakness
- Numbness
- Loss of sensation
- Tingling
- Aching, burning, or shooting pain

**Where?**

- Back
- Neck
- Shoulders
- Arms
- Hands
- Fingers
- Knees

**If you experience symptoms, you must change the way you work or the tools you use. If you don't change, your symptoms may get worse and keep you from working at all.**

# What Should I Do?



- Don't ignore your symptoms. Bring them to your supervisor's attention right away.
- Follow your company's ergonomic program and Injury and Illness Prevention Program.
- Work with your foreman or supervisor to identify the cause of the problem.
- Always seek safer ways to do your job.

## THE WRONG WAY

## THE SAFER WAY

Working in a bent or stooped posture for a long time may cause fatigue and strain your lower back, neck, and shoulders.



- Change positions (sit or kneel with knee pads) when working at or near ground level.
- Alternate bending with non-bending tasks.

Lifting or carrying loads that are too heavy may cause a serious back injury.



- Use teamwork and plan lifts to coordinate movements.
- Use a cart to transport materials.

Working overhead and reaching for long periods of time may lead to lower back, arm, shoulder, and neck injuries.



- Use a ladder, scaffold, or scissor lift.
- Stay close to the work.
- Use lighter-weight tools.