The 7 Most Common Activities That Cause Work Related Injuries

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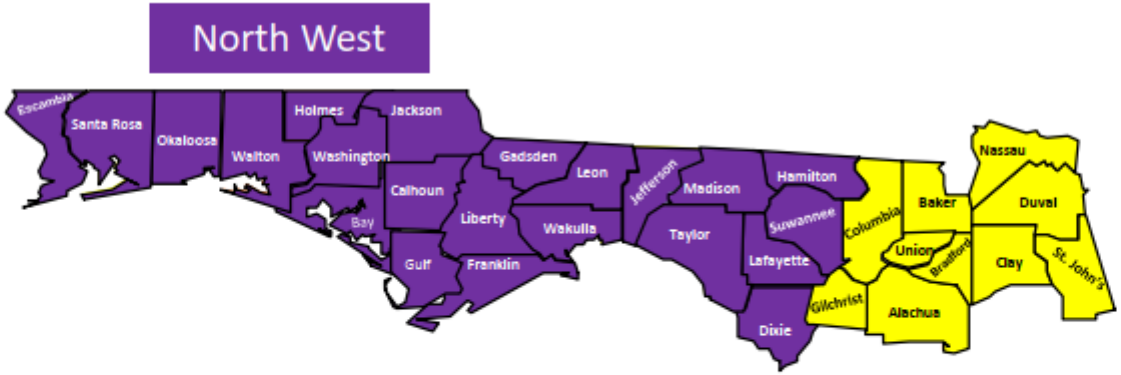
A Proactive Approach to Managing Common Risks at Work

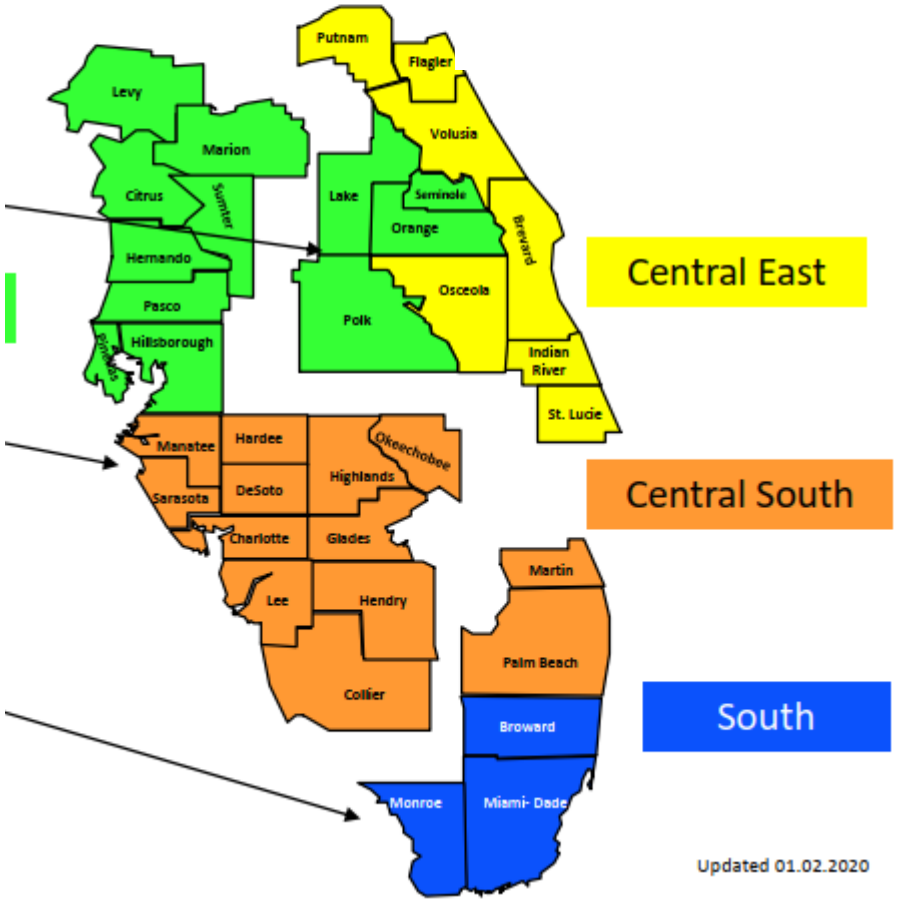
October 2022



Evan MacClellan -

Risk and Safety Consultant

- With FLC/FMIT/FACT since 2013
- Safety Professional Since 1994



Most Incidents (Approx. 65-70%) =

1. Driving
2. Material handling (lifting, pulling, pushing)
3. Backing
4. Using machines (heavy equipment, mobile equipment, gas powered equipment)
5. Using tools (power tools, hand tools)
6. Working outdoors (insect bites, heat exposures)
7. Office ergonomics (musculoskeletal injuries)

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Driving

Why Do Collisions Happen?

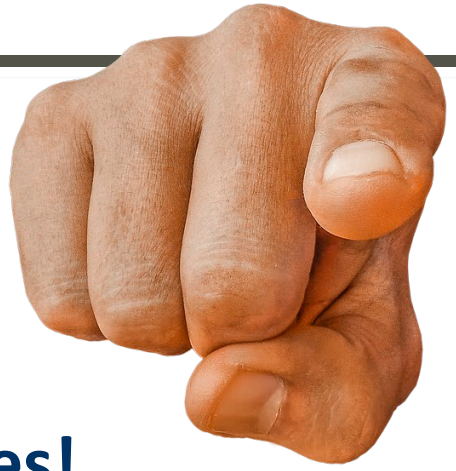
Definition of COMPLACENCY

plural **complacencies**

1 : self-satisfaction especially when accompanied by unawareness of actual dangers or deficiencies • When it comes to safety, *complacency* can be dangerous.

2 : an instance of usually unaware or uninformed self-satisfaction

The Enemy Within



YOU make mistakes!

YOU must expect others to make mistakes!

That's why YOU MUST drive DEFENSIVELY.

Not complacently!

Defensive Driving

Defensive driving means doing all you can to prevent crashes

As a defensive driver, you must give a little

You must change your driving to fit the weather conditions, the way you feel, and the actions of other drivers, bicyclists and pedestrians

Look Down The Road

Many drivers focus only 5 or 8 seconds ahead

You should be looking 10-12 seconds ahead of your vehicle (or farther if you can)

Intersections

When approaching an intersection:

- Slow down
- Do not pass or change lanes 100 feet before or after the intersection
- Look in both directions when approaching and be ready to stop
- After stopping never proceed before looking left then right and then left again
- Always watch for pedestrians and children on bikes

The Left Turn!

Left turns at controlled intersections are one of the most dangerous driving maneuvers

Always check, and double check before you make that turn

The Right Turn

Our natural tendency when making a right turn is to look left, since left is the direction, the traffic is coming from

Right-turning motorists are one of the biggest dangers to bicyclists and pedestrians!

If in Doubt Just Yield!

Nobody ever yielded their way into a collision

If you are in doubt about who has the right of way, give it away

The other guy may be wrong, but its better than ending up hurt or dead

Following Distance

On dry pavement the minimum safest following distance is 2 seconds behind the vehicle in front of you

On wet roadways the minimum following distance must be at least 4 seconds

Distracted Driving

- Driver has their cell phones turned off before starting the vehicle
- Driver has made all adjustments before setting off. These include GPS, climate control, and sound systems, as well as mirrors and seats
- Text messages and emails have been sent before employee starts driving
- Driver has planned “rest” periods into their trips every two to three hours to check emails and return calls
- No attempt has been made to make calls or check/send emails while stopped at a traffic light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Material Handling

Handling Material

Almost every task performed at work requires that material or equipment be handled

- Manually
- With mechanical device

Material Handling

Move or transport objects using mechanical devices:

- Carts
- Wheelbarrows
- Dollies
- Pallet jacks
- Forklifts
- Skid steers
- Loaders
- Cranes
- Pulley systems

Back Injury
#1 Workplace Safety Problem

According to the Bureau of Labor Statistics:

Over 1 million workers suffer back injuries each year

Back injuries account for 1/5 of all workplace injuries

1/4 of all compensation claims involve back injuries

Back Pain

Most back injuries are not the result of a single causal factor

Result of cumulative damage suffered over a long period of time

Certain actions, motions, and movements that are more likely to cause/contribute to back injuries

Never too late to prevent injury

DANGER! If you do this, you could injure your back!

Heavy lifting … especially repetitive lifting over a long period of time

The heavier the object the more likely you will experience an injury

DANGER! If you do this, you could injure your back!

Twisting **at the** ***waist*** **while lifting … using a shovel or moving objects while the feet remain in one position**

The more you twist and bend the more likely you will injure yourself

DANGER! If you do this you could injure your back!

Reaching **and** ***lifting*** **… over your head,** ***across*** **a table, or from the back of a truck or trunk of car**

Generally the further the weight is from your body the more dangerous the lift

DANGER! If you do this, you could injure your back!

Lifting **or** ***carrying*** **objects that have an odd** ***shape*** **or are** ***awkward***

This is especially true if the object is hard to grip

Individual Risk Factors

We are all physically different in:

- size
- shape
- strength

You must know your limits!

Individual Risk Factors (cont)

Lack of sleep/fatigue

Lack of physical activity/too much physical activity

Poor muscle endurance and poor trunk muscle stabilization

Excessive weight

Get in shape …

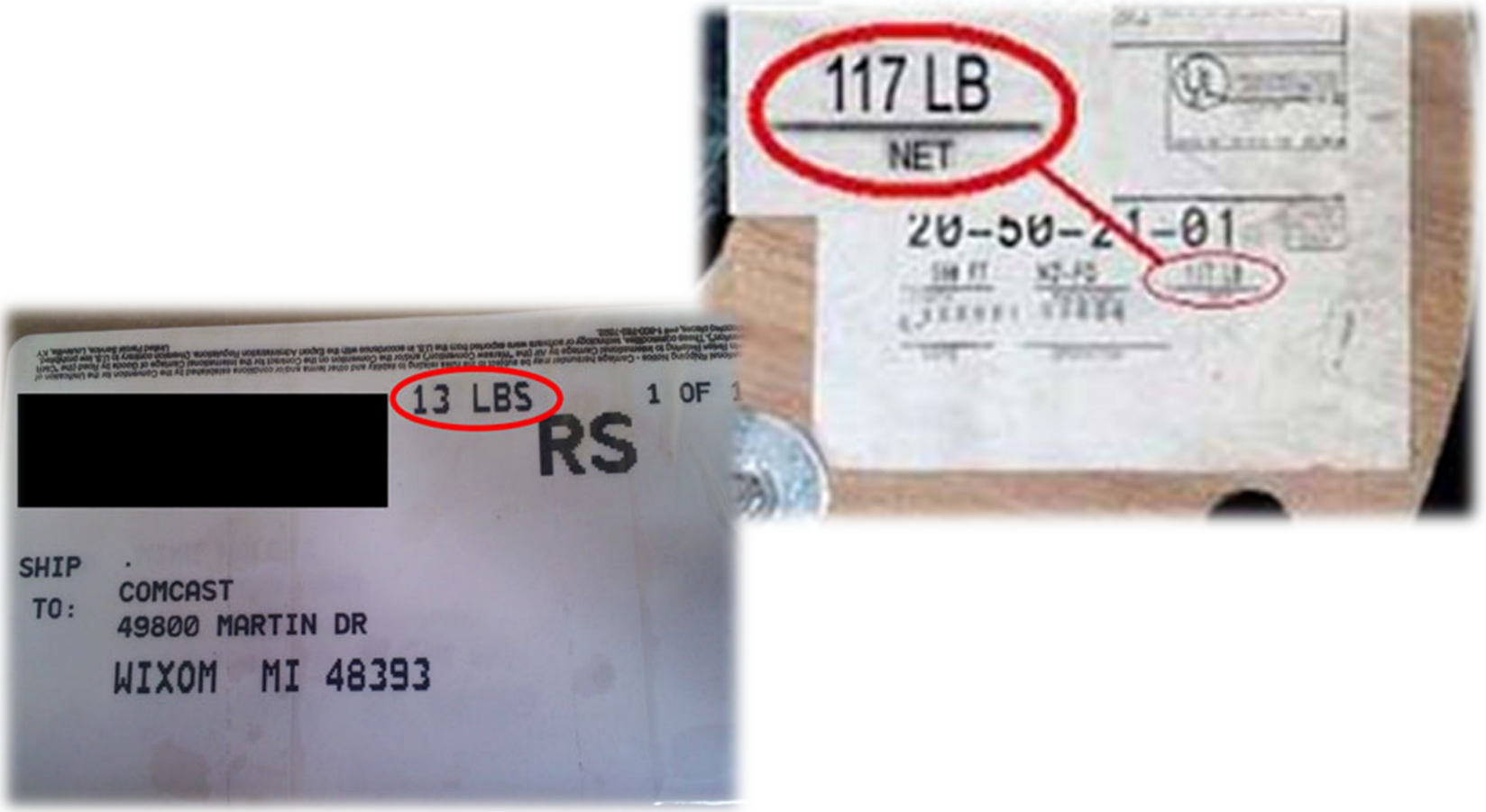
Strengthen your stomach muscles

Lose weight if you are overweight

Increase your flexibility

Can help reduce the probability of a back injury!

If you must lift something…
Check the Weight



Split the Load Between People

Get help if the object has an awkward shape or the object is too heavy for you to lift or move by yourself

Don't be afraid to ask for help!

Split the Load into Smaller Loads

or.....

When Lifting and Lowering…

Try to use smooth, controlled lifting motions rather than jerking

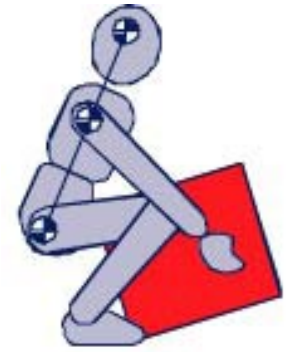
Keep your back as straight as possible

Lift with your knees, not your back

Keep the item near the body

Avoid:

- Bending
- Twisting



Correct lifting technique

Incorrect lifting technique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Backing

Backing, Avoid It!

General Backing Rules

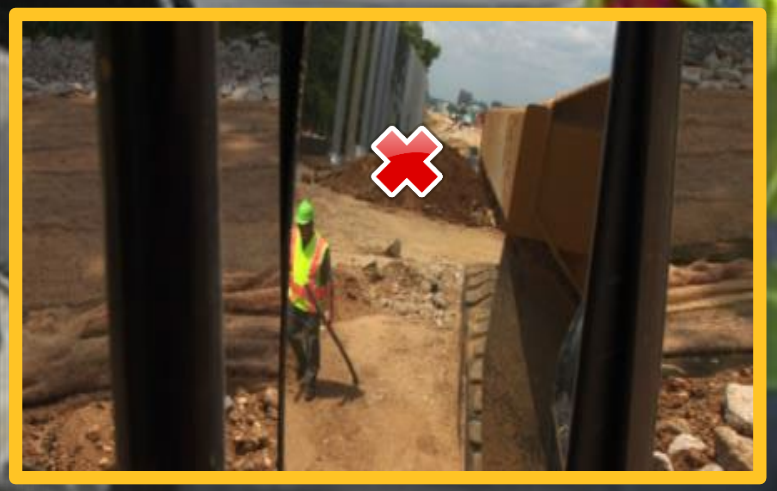
- Get to know a vehicle's blind spots
- Choose easy-exit parking spaces
- Drive all the way through when possible
- Back into parking spots so when leaving you can pull forward
- Walk around your vehicle before backing
- Use a spotter (especially important when driving large vehicles)

Keep Safe Distance

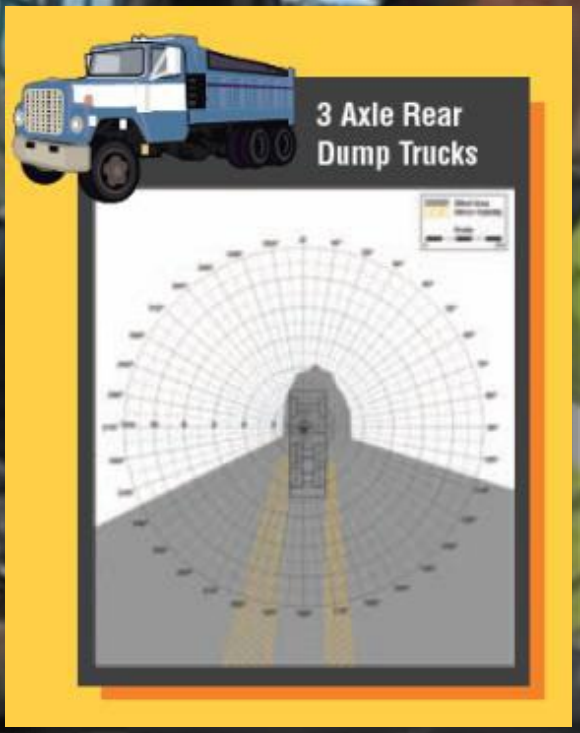
- Stay out of blind spots
- Make eye contact with operator
- Maintain ample space before attempting to walk around equipment

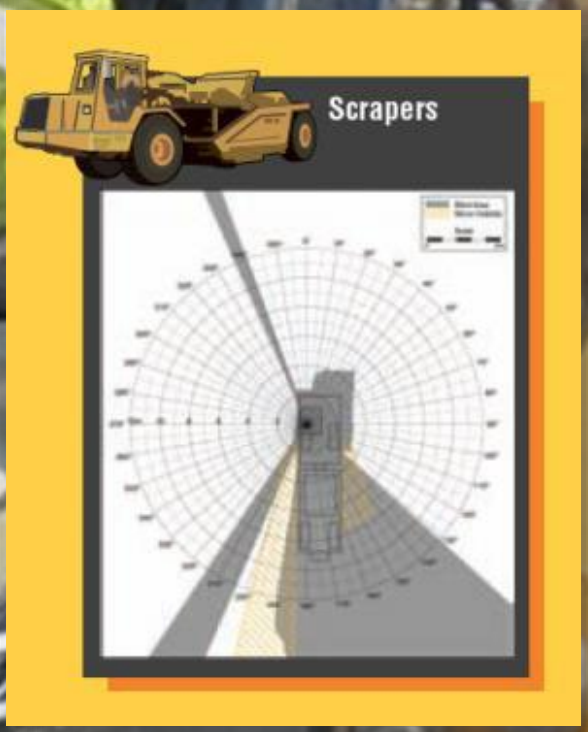
Blind Spots

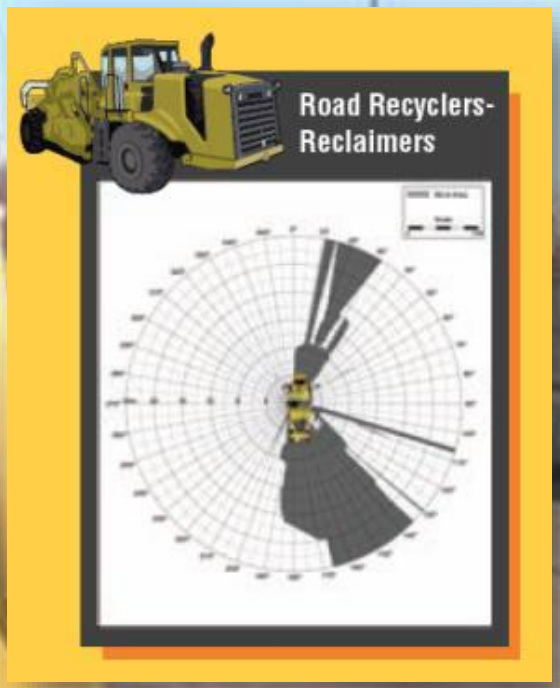
Blind Spots = Locations around equipment and vehicles where **workers on foot are invisible to the operator** through the windows and mirrors



Blind Spots


3 Axle Rear
Dump Trucks


Scrapers


Road Recyclers-
Reclaimers

Backing Hand Signals

MOVE TOWARD ME

- Hold one hand in front of you, palm facing you, and move your forearm back and forth

Backing Hand Signals

THIS FAR TO GO

- Place hands in front of face, palms facing each other.
- Move hands together or further apart to indicate how far to go.

Backing Hand Signals

MOVE OUT

- Face desired direction of movement.
- Extend arm straight out behind you, then swing it overhead and forward until it's straight out in front of you with palm down.

Backing Hand Signals

SLOW DOWN

- Extend the right arm horizontally sideward, palm down, and wave arm downward 45 degree minimum several times, keeping the arm straight.

Backing Hand Signals

STOP

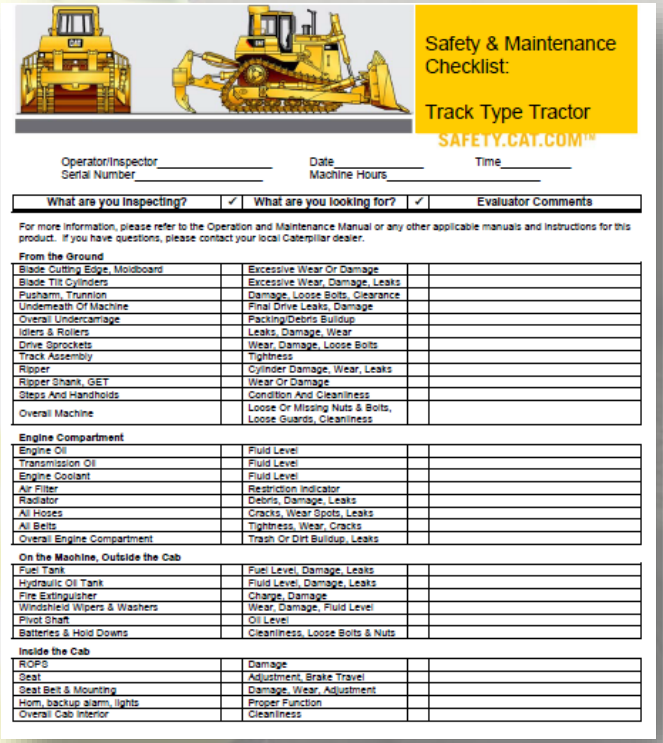
- Raise the right hand upward, arm fully extended, palm to the front.
- Hold that position until the signal is understood.

Using Machines

Daily Pre-use Inspections

A daily pre-use checklist must be completed before operation

The completed checklists must be kept on board the equipment



Safety & Maintenance Checklist:

Track Type Tractor

SAFETY.CAT.COM™

Operator/Inspector_____ Date_____ Time_____

Serial Number_____ Machine Hours_____

What are you inspecting?	✓	What are you looking for?	✓	Evaluator Comments
For more information, please refer to the Operation and Maintenance Manual or any other applicable manuals and instructions for this product. If you have questions, please contact your local Caterpillar dealer.				
From the Ground				
Blade Cutting Edge, Moldboard		Excessive Wear Or Damage		
Blade Tilt Cylinders		Excessive Wear, Damage, Leaks		
Pusharm, Trunnion		Damage, Loose Bolts, Clearance		
Underneath Of Machine		Final Drive Leaks, Damage		
Overall Undercarriage		Packing/Debris Buildup		
Idlers & Rollers		Leaks, Damage, Wear		
Drive Sprockets		Wear, Damage, Loose Bolts		
Track Assembly		Tightness		
Ripper		Cylinder Damage, Wear, Leaks		
Ripper Shank, GET		Wear Or Damage		
Steps And Handholds		Condition And Cleanliness		
Overall Machine		Loose Or Missing Nuts & Bolts, Loose Guards, Cleanliness		
Engine Compartment				
Engine Oil		Fluid Level		
Transmission Oil		Fluid Level		
Engine Coolant		Fluid Level		
Air Filter		Restriction Indicator		
Radiator		Debris, Damage, Leaks		
All Hoses		Cracks, Wear Spots, Leaks		
All Belts		Tightness, Wear, Cracks		
Overall Engine Compartment		Trash Or Dirt Buildup, Leaks		
On the Machine, Outside the Cab				
Fuel Tank		Fuel Level, Damage, Leaks		
Hydraulic Oil Tank		Fluid Level, Damage, Leaks		
Fire Extinguisher		Charge, Damage		
Windshield Wipers & Washers		Wear, Damage, Fluid Level		
Pivot Shaft		Oil Level		
Batteries & Hold Downs		Cleanliness, Loose Bolts & Nuts		
Inside the Cab				
ROPS		Damage		
Seat		Adjustment, Brake Travel		
Seat Belt & Mounting		Damage, Wear, Adjustment		
Horn, backup alarm, lights		Proper Function		
Overall Cab Interior		Cleanliness		

Mounting and Dismounting

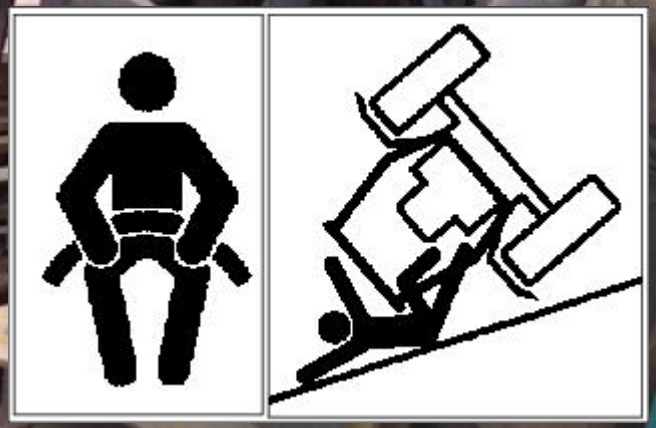
Never get on or off **moving equipment**

Always maintain a **three-point contact** when getting on or off

Seat Belts

Equipment operators must always wear seat belts

It is your seat belt which will keep you inside the seat and protected by the roll over protection



Keep Safe Distance

- Stay out of blind spots
- Make eye contact with operator
- Maintain ample space before attempting to walk around equipment

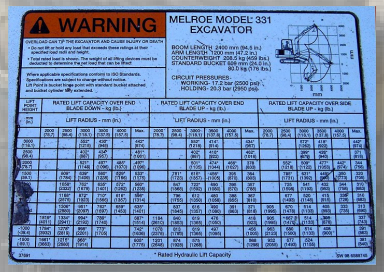
Keep Safe Distance

15 feet

50 feet

Avoid Tipping

1. Never exceed the equipment capacity



2. Keep the equipment back from edges

3. Avoid undercutting equipment
   - Provide adequate shoring

Avoid Tipping (cont)

4. Level off the work area wherever possible

5. If equipped with outriggers use them

Avoid Tipping (cont)

6. Avoid swinging or extending the bucket farther than necessary downhill

7. When the bucket is on the uphill side, the excavator risks tipping over if the slope is too steep

Using Tools

Fundamental Rules

1) Select the Right Tool for the Job

Striking hardened faces of hand tools together (such as using a carpenter's hammer to strike another hammer, hatchet, or metal chisel)

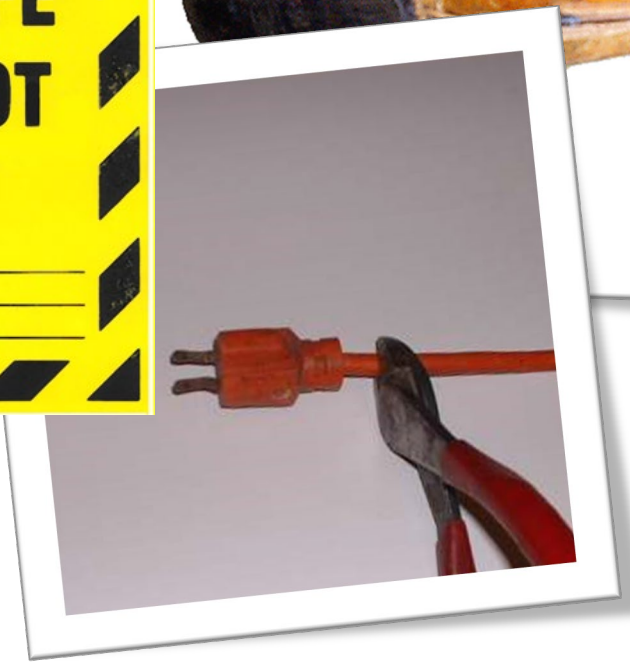
Using a file for a pry bar

Using a ‘cheater’ to extend the length of your wrench,

Using pliers instead of the proper wrench

Fundamental Rules

2) Keep Tools in Good Condition



Fundamental Rules

3) Use Tools the Right Way

Screw drivers applied to objects held in the hand

Knives pulled toward the body

Failure to ground electrical equipment

Safety Glasses

ANSI

ANSI Accredited Certification Program

Guards

Hazardous moving parts need to be safeguarded

Guards, should protect the operator from:

- point of operation,
- in-running nip points,
- rotating parts, and
- flying chips and sparks

Guards must never be removed when a tool is being used

Electrical- Three-Wire Cords

A three-wire cord contains two current-carrying conductors and a grounding conductor

If there is a short in the tool the fault current will exit to the ground <u>not</u> to you

You must never remove the third prong from the plug!

Electrical- Double Insulation

A double insulated tool is a safer tool

The user and the tools are protected in two ways:

1. by normal insulation on the wires inside

2. by a housing that cannot conduct electricity to the operator in the event of a malfunction

Fuel Powered Tools

All fuel powered tools must be stopped when being refueled, serviced, or maintained

Fuel must be transported, handled, and stored in approved safety cans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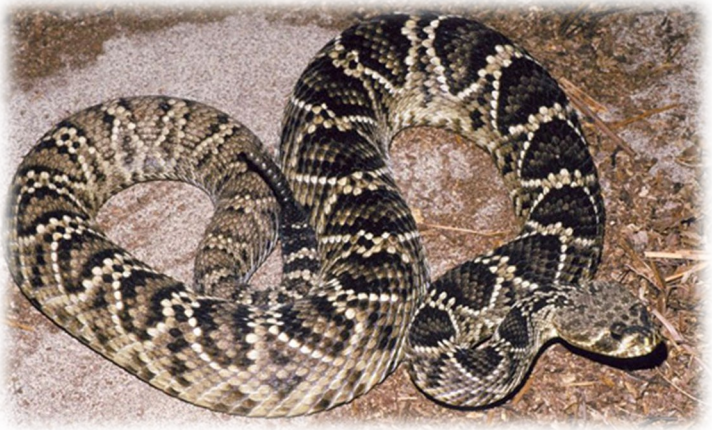
Working Outside

Alligators

- Leave alligators alone
- Never feed alligators
- Alligators are most active between dusk and dawn

Venomous Snakes in Florida

- Eastern Diamondback
- Canebreak Rattlesnake
- Pigmy Rattlesnake
- Coral Snake
- Cottonmouth (Water Moccasin)
- Copperhead



How to Avoid Snake Bites?

Avoid tall grass

Remember that snakes can climb

Check before you stick your hand in places

Wear heavy boots and pants

Dangerous Spiders

1. Southern black widow
2. Red widow
3. Brown widow
4. Brown recluse

Bees

Bees are often confused with wasps

Although closely related, they differ in many ways

Bees are not commonly serious problems and usually require no control

Wasps

1. Hornets
2. Yellow jackets
3. Mud daubers
4. Cicada killers

Fire Ants

3 Species found in the South, 2 imported from South America & 1 native

Produce large mounds with thousands of insects

Very aggressive

Attacks usually result in several stings

Poison Ivy

Usually found as vines on trees but can appear as a bush

Smooth margin leaves in groups of 3's; produces berries that can cause outbreaks

Poison Oak

Usually small bushes

3-lobed leaves

Poison Sumac

Found from
Central Florida north

Leaves consist of 7–13 leaflets arranged in pairs with a single leaflet at the end of the midrib

Reddish stems

Poison sumac leaves start turning reddish-orange in the fall

Protection from Poisonous Plants

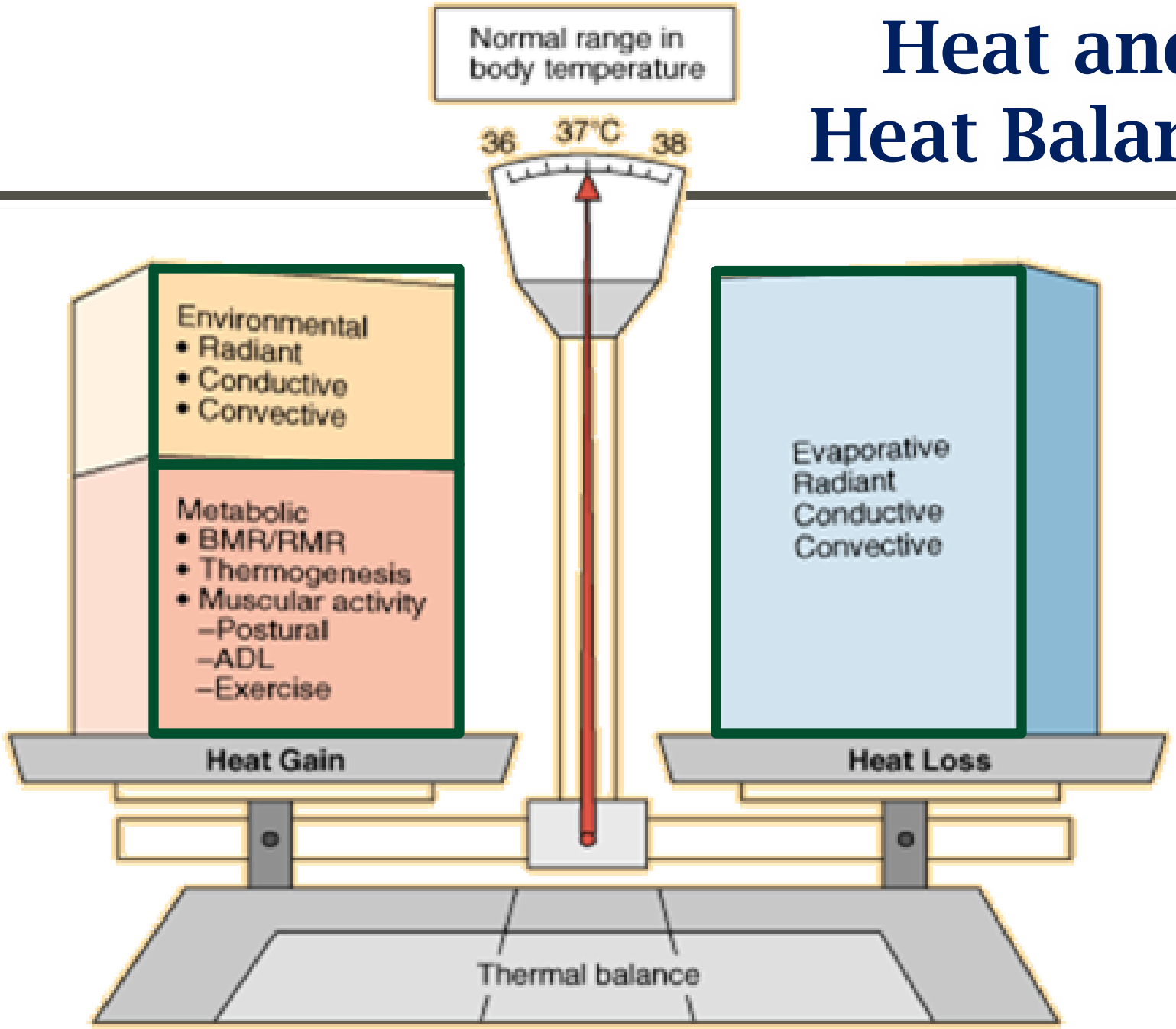
Keep skin covered & avoid plants with 3-leaf clusters

If you contact the plant wash hands with soap & water

Do not burn poison ivy or oak

- Smoke can blister the lungs causing illness & sometimes death

Heat and Heat Balance



Dangers of Heat Exposure

1. Heat cramps

2. Heat exhaustion

3. Heat stroke

Work During Coolest Times

Adjusting the work schedule to allow people to work during coolest part of day

Consider working outside earlier in the morning instead of mid afternoon

Shade

Erect shade shelters

Install shade canopies on equipment

Drink

The importance of staying hydrated cannot be understated

The feeling of thirst will not ensure sufficient fluid intake

Drink small amounts frequently throughout out the day

I.e. Drink one cup every 20 minutes

What to Drink?

- Water is the best fluid replacement
- Sweetened and carbonated drinks are not as effective
- Fruit juices or sports drinks should be diluted with water 50/50
- Drinks that are cooled to between 50-60 F absorb better

Personal Protective Equipment

Add a shade to your hard hat

Cooling garments such as vests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Office Ergoonomics

Ergonomics Is:

The study of the relationship between people, their activities, their equipment, and their environment.

Why Ergonomics?

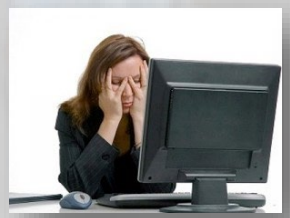
Poorly designed workstations can cause:

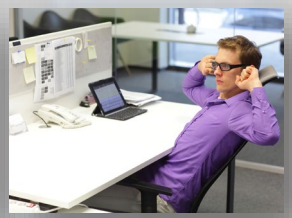
- Health problems
- Impair concentration
- Reduce productivity

Sitting in the same position for long periods of time can be tiring and stressful

Prolonged computer screen usage can cause:

- Eyestrain
- Headaches
- Fatigue
- Loss of concentration





Stretching

Stretching is an important daily activity

Reduce the chance of injuries

Improve your comfort

Self Assessment Form

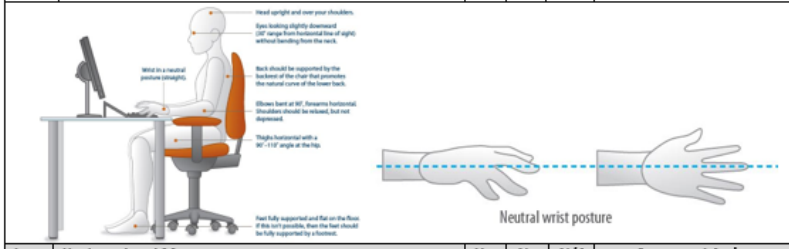
Logo here

OFFICE ERGONOMICS SELF-ASSESSMENT FORM

This Office Ergonomics Self-Assessment form is best completed by two people (i.e. with your supervisor or a co-worker). Having two people will enable you to sit at your workstation while a second person observes and assists you achieve the recommended posture.

There is a good and modern reference video available on YouTube which can help you visualize and better understand how to arrange your workstation: https://www.youtube.com/watch?v=ofnpBtO1-gA

Item	The Office Chair	Yes	No	N/A	Suggested Actions
1.	Can the height, seat and back of the chair be adjusted to achieve the posture outlined in the picture below?				• Obtain a fully adjustable chair
2.	Are your feet fully supported by the floor when you are seated?				• Lower the chair • Use a footrest
3.	Does your chair provide support for your lower back?				• Adjust chair back • Obtain proper chair • Obtain lumbar roll
4.	When your back is supported, you able to sit without feeling pressure from the chair seat on the back of your knees?				• Adjust seat pan • Add a back support
5.	Do your armrests allow you to get close to your workstation?				• Adjust armrests • Remove armrests



Item	Keyboard and Mouse	Yes	No	N/A	Suggested Actions
6	Are your keyboard, mouse and work surface at your elbow height?				• Raise / lower workstation • Raise or lower keyboard • Raise or lower chair
7	Are frequently used items within easy reach?				• Rearrange workstation
8	Is the keyboard close to the front edge of the desk allowing space for the wrist to rest on the desk surface?				• Move keyboard to correct position
9	When using your keyboard and mouse, are your wrists straight and your upper arms relaxed? *The keyboard should be flat and <u>not</u> propped up on keyboard legs as an angled keyboard may place the wrist in an awkward posture when keying.*				• Re-check chair, raise or lower as needed • Check posture • Check keyboard and mouse height

OFFICE ERGONOMICS SELF-ASSESSMENT FORM

		Yes	No	N/A	Suggested Actions
	vel and as close as possible to				• Move mouse closer to keyboard • Obtain larger keyboard tray if necessary
	use?				• Rest your dominant hand by using the mouse with your non-dominant hand for brief periods (mouse buttons can be changed within the computer control panel) • Investigate alternate mouse options.
		Yes	No	N/A	Suggested Actions
	irectly in front of you?				• Reposition monitor
	at least an arm's length on is dependent on the size creen resolution and the se of bifocal spectacles be at same height. ry monitor position it you then position the (s) to avoid twisting your extended periods. nitors equally position the itors directly in front of				• Reposition monitor (s) • Seek an alternative monitor if necessary i.e. flat screen that uses less space
	y below eye level?				• Add or remove monitor stand • Adjust monitor height
	face free from glare?				• Adjust overhead lighting • Cover windows • Obtain antiglare screen
	t for reading or writing				• Obtain desk lamp • Place on left if right-handed – place on right if left handed

RGONOMICS SELF-ASSESSMENT FORM

		Yes	No	N/A	Suggested Actions
	he usual work onally in the				• Rearrange workstation
		Yes	No	N/A	Suggested Actions
	tes? I.e.				• Set reminders to take breaks
	g at your				• Refocus on picture on wall every 30 minutes
		Yes	No	N/A	Suggested Actions
	rd for reading				• Obtain an angle board
	he screen or ed?				• Obtain document holder
	f you are writing				• Obtain a headset if using the phone and keyboard
		Yes	No	N/A	Suggested Actions
	onged periods nd mouse; d monitor or a				• Obtain appropriate laptop accessories

Start your day off safely… Dress for success

- Wear loose, comfortable clothing to allow free movement of hips & to maintain natural spinal curves.
- Avoid open-toed shoes and sandals, whenever possible.
- Wear comfortable footwear with a low heel to reduce leg and back strain & to help prevent slips and falls.

Good workstation set-up is based on individual needs.

But, there are some general principles that can be taken into account…

Rule #1: If you are uncomfortable, seek assistance!

Considerations in setting up a Computer Work Station

- How will the computer be used? How long?
- What kind of computer?
- What furniture will be used?
- What chair will be used?

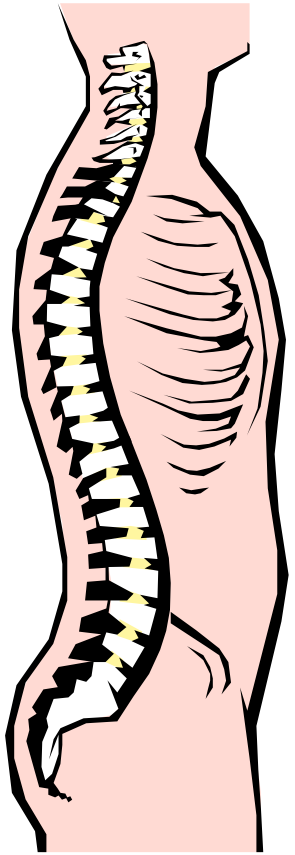
- What can you see?
- Posture!
- Where will the computer be used?
- Breaks
- Ergo. Gizmos

Ergonomics "Hit List"

- Slumped posture;
- Elbows out;
- Reach out of "easy reach" zone;
- Work outside the "comfort zone";
- Shoulder(s) too high/low;
- Twisting of neck or back;
- Wrists outside of neutral position;
- Squinted eyes.

Good posture is essential to your health & safety!

- 3 natural curves.
- Seated posture puts lots of strain on your body!
- Exaggerated curves are bad.
- Stretch frequently.
- Maintain or build strength.



Easy Reach

- **Items to think about moving into the “easy reach” zone...**
  - Keyboard
  - Mouse
  - Telephone
  - Calculator

Chairs:

- **Some adjustments to check out…**
  - Seat height, depth, angle/tilt,
  - Back height, adjustability, and angle/tilt,
  - Lumbar support,
  - Arm rest height,
  - Swivel.

Your Health & Safety Requires Stretching/Exercise "Breaks"!

- **Two types:**
  - Aerobic exercise
  - Micro breaks
- **Micro Breaks:** short breaks to relax, restore, re-nourish, gently stretch.

Review

1. Driving
2. Material handling
3. Backing
4. Using machines
5. Using tools
6. Working outdoors
7. Office ergonomics


ANY
QUESTIONS
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