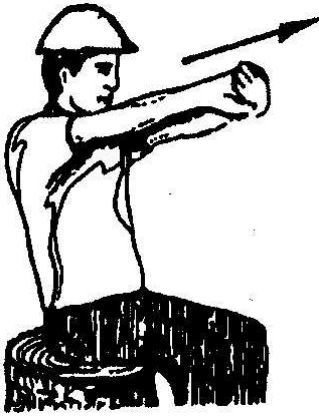


REDUCING MACHINE OPERATOR FATIGUE

a Training Brochure for Machine Operators

Special thanks to the Logging Industry Research Organization, Human Factors Group, of New Zealand, for allowing FRA to use material from its report.



- Maintain good body position in your machine.
- Take short breaks for muscle relaxation.
- Build breaks into your workday.
- Do stretching exercises several times a day.

1) WORKING POSTURE

It is important to maintain good body position while in the machine. Adjust the seat, arm rests, and controls to suit yourself. Some basic machine operator body position guidelines are:

- Keep your shoulders and arms as straight and relaxed as possible.
- Keep your wrists straight whenever possible.
- Avoid leaning forward or to the side in your seat for extended periods of time.
- Sit back in your seat, so that your lower back and thighs are supported. Feet should be flat on the floor without any pressure points on the underside of thighs or calves.

2) MUSCLE RELAXATION

Relax your arms and hands for a few seconds every few minutes to relieve muscle tension.

3) BREAKS

Build short breaks into your workday. Get out of your machine and move around--don't just sit down! Be active performing other tasks.

4) STRETCHES

The following stretches can be used to relieve muscle fatigue. Ease into the stretches.

Stretch 1:

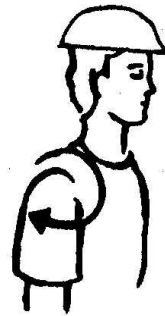
WRISTS AND FOREARMS

Lift your arms out in front of you. Keeping your arms straight, move your hands in circles, first in one direction, then in the other. This is good for wrists and forearms

Repeat 5-15 times in each direction.

Stretch 2:

SHOULDERS



Rotate your right shoulder forward, up and back, and then in the opposite direction. Repeat this for your left shoulder. Keep your spine straight, and be careful not to move your chest upwards. This is a good shoulder stretch.

Repeat 5-15 times on each side.

Stretch 3:

ARMS AND SHOULDERS

Stand or sit with one elbow bent at chest height, with your palm on your chest.

- a. Extend your other arm out in front of you at shoulder height with your hand turned in and your palm facing away from you.



- b. Now slowly reverse the arms--one hand is pulling in to you; the other pushing away.

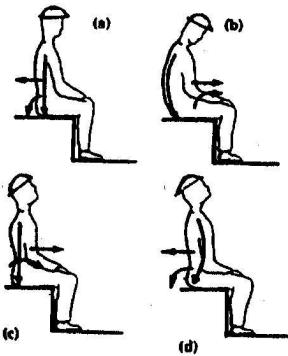
This is good for your arms and shoulders.

Repeat slowly 5-15 times.



Stretch 4:
LOWER BACK

- Sit up straight, and look straight ahead.
- Breathe out as you roll your pelvis back, and slump to look at your navel.
- Then, as you breathe in, straighten up, roll your pelvis up, and lift your head. When doing this,



your head and pelvis should move together. As you look up, breathe out fully through your mouth. Your knees should move apart, and your shoulder blades should come together at the back, and your chest should expand.

- Breathe in as you return to the start position. Do not move forward or back --simply up and down.

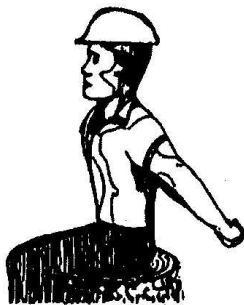
This is a good back stretch.

Repeat 5 times.

Stretch 5:
SHOULDERS AND ARMS

Behind your back, hold one hand in the other (palms up). Slowly turn your elbows inward while straightening your arms (pulling your shoulder blades together).

This is an excellent stretch for shoulders and arms.



Hold for 5-15 seconds, repeat twice.



Stretch 6:
ARMS AND UPPER BACK

Holding one hand in the other, straighten your arms in front of you. Your palms should be facing away from you as you do this stretch. (Don't let your shoulders go forward.)



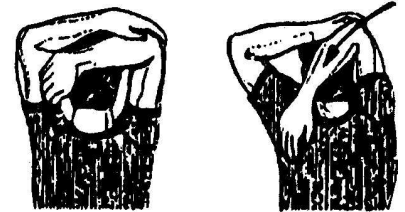
Feel the stretch in your arms and through the upper part of your back.

Hold for 20 seconds, repeat at least twice.

Stretch 7:
UPPER ARMS AND SHOULDER

With arms overhead, hold the elbow of one arm with the hand of the other arm. Gently pull the elbow behind your head, creating a stretch. Do it slowly; hold for 15 seconds. Repeat on your other side.

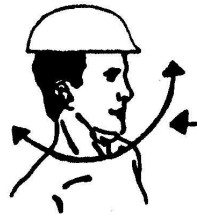
This is a simple stretch for your triceps and the top of your shoulders.



Repeat 3 times on each side.

Stretch 8:
NECK AND UPPER BACK

Looking straight ahead, pull chin inwards, creating a double chin, and gently turn to the left, then the right. You should feel the stretch at the side of your neck. Pull your shoulders down gently to increase the effectiveness of the stretch. This will stretch your neck and upper back.



Repeat 2-3 times.



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