

The Forestry Association of South Carolina's

TOP

REFERENCE MANUAL

For The TIMBER OPERATIONS PROFESSIONAL

WELCOME

The Forestry Association of South Carolina's Timber Operations Professional program started in 1993 with the goal of advancing the logging profession by providing the best available information on safety, environmental issues, and business management.

This manual is provided as supporting and supplemental information for the TOP initial training class.

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Resources and Forestry Facts

ONLINE RESOURCES

Safety and Trucking

- The National Timber Harvesting and Transportation Safety Foundation provides resources including First-Year Safety Program, Logging Safety Resource Guides, Safety manuals, and more. <https://loggingsafety.com/>
- The OSHA Logging eTool provides access to a wide range of resources including applicable regulations, sample safety and health plans, and resources for employers. <https://www.osha.gov/SLTC/etools/logging/index.html>
- The Forestry Association of SC Logging Safety Guide and OSHA logging standard are available at <http://www.scforestry.org/top> The Safety Guide was developed by the FASC TOP Committee, SC Timber Producers Association, and Forestry Mutual Insurance Company.

Environmental, Conservation, and Regulatory

- The South Carolina Best Management Practices for Forestry are maintained by the SC Forestry Commission. The SC BMP Manual, contacts, monitoring reports, and other info is available at <http://www.state.sc.us/forest/menvir.htm>
- The Center for Invasive Species and Ecosystem Health is at <https://www.bugwood.org/>
- The SC Department of Natural Resources' Rare, Threatened and Endangered Species Inventory can be found at <http://dnr.sc.gov/species/index.html>
- Further information about cultural and historic resources can be found at the SC Department of Archives and History <http://scdah.sc.gov/> and the SC Institute of Archaeology and Anthropology at <http://artsandsciences.sc.edu/sciaa/front-page>

Business and Finance

- The SC Small Business Development Centers at <http://www.scsbdc.com/> offer a wide range of services and support such as free consultation, business planning, financing options, and more.
- The US Department of Labor provides many resource, such as this reference guide to the Fair Labor Standards Act at <https://www.dol.gov/whd/regs/compliance/hrg.htm>. The US Equal Employment Opportunity Commission also provides resources for small businesses at <https://www.eeoc.gov/>



\$21 Billion

Total economic impact
of South Carolina's
FOREST industry is
\$21 Billion annually.

Snapshot of

SOUTH CAROLINA'S FORESTS

FOREST AREA

- South Carolina has 13 million acres of forestland -- 67% of the state's total land area.
- Hardwood timber types occupy over 52% of the state's forestland. Softwoods occupy 48%.
- South Carolina's forestland acreage has averaged 12.6 million acres since 1968.

ECONOMIC IMPACT

- Forestry is number one among manufacturing industries in jobs (84,000+) and labor income.
- Total economic impact of South Carolina's forest industry is \$21 billion annually.
- South Carolina exports \$1.27 billion in forest products each year.
- Timber is the state's number one harvested crop at \$759 million annually.

FOREST OWNERSHIP

- 88% of South Carolina's forests are privately owned.
- 63% of private forests are family-owned.
- The average "family forest" is 80 acres. 56% of these owners live on the land.
- Forest industries own 137,400 acres, down 93% since 2001 and continuing to decline.
- Public agencies manage 12% of South Carolina's forests.

FOREST INVENTORY

- South Carolina's forests now contain 25 billion cubic feet of wood, more than at any time in the past century.
- The state's forests, both hardwood and softwood, are growing more wood than is being harvested.
- Net annual softwood growth is double the growth rate of 30 years ago. The present annual growth of 935 million cubic feet per year is the highest recorded.
- Net annual hardwood growth rates have steadily increased since Hurricane Hugo. The present annual growth of 321 million cubic feet per year is 39% above pre-Hugo levels.

ALSO OF INTEREST

- SC's Best Management Practices for Forestry successfully protect water quality with 97% compliance.
- Over 439,000 acres are enrolled in the SC Tree Farm Program.

Information provided by SC Forestry Commission and USDA Forest Service. For more about the state's forest resource, contact the SC Forestry Commission at 803/896-8800 or www.trees.sc.gov.

Forestry Association of South Carolina, 4901 Broad River Rd., Columbia, SC 29212
803/798-4170 ■ www.scforestry.org ■ facebook.com/SCForestryAssociation



Trees, wood,
and paper
products
make our
lives better
in countless
ways.

Goods From The Woods

Wood is a natural, attractive and versatile material that makes life better in countless ways. It's renewable and environmentally friendly. We wear it, eat it, write on it, sit on it, build with it, many times without even knowing it. Over 5,000 products used every day are made from trees. Unlike fossil fuels, metals and other natural resources used in making products, trees can be planted and regrown in an endless cycle so we can enjoy the benefits they provide -- clean air, clean water, recreation, wildlife habitat and products -- both now and in the future.

FRUITS & NUTS

The fruits, nuts, berries and seeds of many trees are an important source of food for wildlife and people. Some of the most common are apples, peaches, pecans, walnuts, coffee and spices such as mace and nutmeg. Other fruits and nuts: oranges, pears, chestnuts.

LEAVES

While growing on a tree, leaves produce oxygen, help filter pollutants from the air, provide shelter for many wildlife species and shade to keep us cool. When harvested, leaves of the carnauba tree are used to produce furniture polish, car wax, crayons, lipstick and the coating on many medicine tablets. Whole leaves from some trees, such as bay, are used in cooking, while oils of other leaves, such as eucalyptus, are extracted for fragrances and flavorings. Other products made from foliage: garden mulch.

STUMPS

Pine stumps provide wood rosin and liquid terpenes used in making many products, including pine cleaners, orange-flavored soft drinks, and laundry detergents. Hardwood stumps produce sprouts that grow into new trees, assuring future hardwood forests. Other products made from stumps: sports drinks.

BRANCHES

Branches of large trees and trunks of smaller trees are used to make thousands of paper products, including writing paper, tissues and boxes. Chemical by-products of the paper-making process are used in producing cleaning compounds, skin lotions, artificial vanilla flavoring, photographic film and many molded plastic products such as eye-glass frames, football helmets, toothbrushes and buttons. Other products made from branches: carpeting and upholstery backing, rayon, plastic twines, computer casings, luggage, cellophane, newspapers, baby food, imitation bacon bits, cereal, colognes.



BARK

Bark is used for a variety of purposes ranging from medicine to garden mulch to seasoning for foods. The willow tree, for example, provides the essential elements of aspirin, while the laurel tree provides cinnamon used to flavor many foods. Cork for wine bottles and fishing tackle comes from the cork oak tree. Bark also is burned to produce energy and used as a dye for fabrics, and shoe polishes. Other products made from bark: cosmetics, poultry bedding, and oil spill control agents.



TRUNKS

Trunks of trees are primarily used to make solid wood products such as furniture, musical instruments, lumber and handles for tools and sporting equipment. Trunks also are peeled into thin sheets and used as veneer for plywood and furniture. Other products made from trunks: baseball bats, charcoal, canoe paddles, guitars, swing sets, birdhouses, crutches, fences, and sleds.

GUMS

Gums, which are found in the sap of trees, are used in the manufacture of a variety of products including food, adhesives, paints and medicines. In foods, gums serve as thickening agents, provide a creamy texture, act as binders to keep ingredients from separating and help retain moisture. In ice cream and other frozen desserts, gums prevent formation of crystals. Gums of some trees are used to make adhesives such as glue and hair spray, and act as drying agents in paint and printing ink. Other gums have antiseptic properties and are used in making soaps and cough syrups. Other products made from gums: cough drops, shampoo, dish washing liquid, and adhesive bandages.



ROOTS

In addition to providing food for the tree, roots play an important role in keeping our waters free of pollutants. They stabilize the soil to prevent erosion and sedimentation, and by absorbing nutrients to feed the tree, they prevent these nutrients from entering rivers and streams. Other products made from roots: sassafras tea, and root beer.

Safety and Trucking



LOGGER SAFETY *Guide*

Safety requirements, interpretative guide and record book for TIMBER HARVESTERS.

Published by the Forestry Association of South Carolina. Adapted from Forestry Mutual Insurance Company and NC Forestry Association by the FASC's TOP Task Force, SC Timber Producers Association, and SC Office of OSHA Voluntary Programs.

MANUAL IDENTIFICATION

Use one manual per logging crew and shop location

Company_____

Crew name_____

Owner(s)_____

Address_____

Phone numbers

Owner_____ **Mobile**_____

Foreman_____ **Mobile**_____

Others_____

Date manual first used:_____

Date to request new manual: (every 12 months from receipt)_____

NEW MANUAL RE-ORDER / \$5.00 PER COPY

(or you can download a free copy by going to www.scforestry.org/top)

Forestry Association of South Carolina
4901 Broad River Road
Columbia, SC 29212
(803) 798-4170

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HOW TO USE THIS BOOKLET

KEEP THIS BOOKLET ON THE JOB SITE AT ALL TIMES

Booklets should be used for a one year period. Another booklet should be downloaded or requested prior to the twelfth month. Refer to inside cover for ordering information.

In the top center of each page is a box with the words **DAILY, WEEKLY, MONTHLY, ANNUALLY** or **CONTINUALLY** in it which indicate the frequency of the required information.

Blank lines (_____) require written information such as company name, descriptions, signatures, dates, etc. Entries should be made using ink (not pencil). If additional pages are needed, please photocopy and attach accordingly.

You may photocopy materials out of this book and keep this copy as a master. This booklet contains sample forms, sample policies and guidelines for maintaining safety records. Formats are suggested and can be modified by each operation. Use of this booklet and completion of suggested forms will assist OSHA (Occupational Safety & Health Act) Requirements as related to logging operations. A list of agencies and contacts are included for information and consultation. Add additional information as needed for your operation(s) and business.

Please visit <http://www.scforestry.org/top> for a link that will take you to the Federal OSHA Logging Operations Standards 29CFR1910.266.

This booklet IS NOT a complete safety manual with everything you need. It is intended to be a record of activities and a source of useful information. Each company is encouraged to begin their own manual with detailed information to backup this booklet. Each company is responsible for complying with all OSHA Logging Operations Standards 29CFR1910.266.

Updated versions will be available as needed. Comments on manual use and suggested improvements should be directed to:

**SC Department of Labor
OSHA Office of Voluntary Programs
P O Box 11329
Columbia, SC 29211**

WHAT TO EXPECT FROM A SOUTH CAROLINA OSHA INSPECTION

CONTINUOUS

A SC OSHA Inspector's Credentials

When an OSHA compliance officer arrives at the establishment or inspection site, the office shall display official credentials. The compliance officer will ask to meet with the employer or an appropriate employer representative. Employers should always ask to see the compliance officer's credentials.

Opening Conference

In the opening conference, the compliance officer will explain how and why the establishment or site was selected for an inspection. The officer will instruct whether the inspection will be comprehensive or partial. Also, the compliance officer will determine whether the establishment or site is undergoing consultation from an OSHA funded consultant program or whether an inspection exemption is being pursued or has been received. If so, the inspection may be terminated. The compliance officer will also specify the following:

- State the purpose of the visit.
- Scope of the inspection and the applicable standards. OSHA Logging Operations Standard 29 CFR 1910.266.
- Ascertain the correct business information: name, mailing address, telephone number, number of employees, etc.
- Preview the accident and injury records (OSHA Form 300), written safety and health programs.
- Determine whether there are any trade secrets at the establishment or site as a result of questioning the employer or employer's representative. Trade secrets are treated confidentially.
- The employer will be asked to select an employer representative to accompany the compliance officer during the inspection. This selection process may include a bargaining agency representative, safety committee selection or employee's selection.

Inspection Process

The inspection tour will start at the beginning of the work process to the finished product. The compliance officer will observe safety and health conditions and practices, interview employees privately and make every effort to minimize any work interruptions. The compliance officer will also, if necessary, take photos, monitor employee measurements, etc. The officer may also examine records, collect examples, monitor employees' exposure and survey existing engineering controls.

Closing Conference

At the conclusion of the inspection, the compliance officer will conduct a closing conference with the employer and the employee representative(s). A free discussion will take place of the alleged violations of OSHA Standards (or ANSI, etc.) that were observed during the inspection. Additional problems and needs may be discussed for Safety & Health.

The compliance officer will not indicate any specific proposed penalties. The employer is informed of appeal rights and can request for an informal conference or notice of contestment. The employer has 30 calendar days from the time of the citation and proposed penalty to notify the SC OSHA Director in writing.

Free consultative services, training materials and technical advice are available from the SC Department of Labor, OSHA Consultation Division, and Training & Technical Assistance by calling (803) 896-7744.

FREE LOGGING SAFETY CONSULTATION

ANNUALLY

The South Carolina OSHA Office of Voluntary Programs will visit logging sites to offer free advice on reducing hazards and eliminating injuries. The OSHA consultant will evaluate your programs, equipment and procedures and assist in establishing a work site safety program. After receiving your request for a general OSHA compliance inspection an OSHA consultant will contact you directly to arrange a meeting and inspection. You are protected from a general compliance inspection while the consultant is working with your operation(s). The protection begins after the consultant arrives and begins working with you.

OSHA has targeted logging as a special emphasis program for more general compliance inspections due to the number of injuries and fatalities. This free consultative service can assist in bringing your logging job(s) into OSHA compliance. Compliance will assist in avoiding OSHA fines incurred from general compliance inspections as well as reduce and/or eliminate the potentials for accidents, injuries and fatalities.

Keep a copy of your request form on the jobsite until the consultative session begins.

REQUEST FOR ON-SITE SAFETY CONSULTATION LOGGING OPERATIONS (Please print clearly)

Company Name: _____

Contact Person: _____

Mailing Address: _____

Work Phone: _____ Home Phone: _____

I would like to request a free safety evaluation of my operation. Contact me as soon as possible.

Requested By: _____

Title: _____ Date: _____

Mail to:	SC OSHA Voluntary Programs	803-896-7744
	Division of Occupational Safety & Health	
	P O Box 11329	
	Columbia, SC 29211-1329	
Fax to:	SC OSHA Voluntary Programs	803-896-7750

JOB, SAFETY, HEALTH & ASSOCIATED POSTERS

CONTINUOUS

Poster	ID Number	Contact
Combined State and Federal <i>Includes:</i> Safety and Health on the Job Wage and Hour Act Worker's Compensation Notice Unemployment Insurance Americans with Disabilities	OSHA Poster	SC Department of Labor 110 Centerview Drive Columbia, SC 29212 Phone: (803) 896-4342
OSHA 300 Summary of Work Related Injuries and Illnesses	OSHA 300-A	SC Department of Labor Public Information Phone: (803) 896-4342
Equal Employment Opportunity *Federal*	0-383-798	EEOC 1835 Assembly Street Columbia, SC 29201 Phone: (803) 765-5981
Minimum Wage Standards Polygraph Protection Act Family & Medical Leave Act *Federal Laws*	WH-1088 WH-1462	Wage and Hour Division 1835 Assembly Street Columbia, SC 29201 Phone: (803) 765-5981
Noise Exposure	1910.95	E.A.R. Corporation 5457 W. 79 th Street Indianapolis, IN 46268-0940 Phone: (800) 678-4163

These posters are displayed in the following locations for all employees to see:

EXTREME DANGER CONDITIONS

CONTINUOUS

BE ALERT OF THESE DANGERS AT ALL TIMES!

- Are workers that are exposed to overhead hazards wearing hard hats?
- Are lodged or hung trees safely tagged and pulled down as soon as possible?
- Does the loader operator avoid swinging a boom over other workers?
- Do deck workers maintain a safe distance from the loader?
- Do chainsaw fellers check for overhead hazards before felling a tree?
- Do chainsaw fellers avoid working in windy conditions?
- Are workers a safe distance from trees being felled?
- Are workers a safe distance from moving equipment, pull logs and other workers?
- Are felling and loading operations located safe distances from power lines?

QUICK SAFETY CHECKLIST

CONTINUOUS

(Use this copy as a master form. Make copies and use as needed during the year)

Date _____

General Operations

YES NO

All employees properly trained in the safest way to perform their job(s)	_____	_____
All employees in visual or audible contact with other employees	_____	_____
All employees wearing hardhats when exposed to overhead hazards	_____	_____
Chainsaw operators wearing all required personal protective equipment	_____	_____
All equipment operated a safe distance from other equipment and employees	_____	_____
Adequate handholds and footing surfaces provided on equipment	_____	_____
Employees using 3-point contact mounting and dismounting equipment	_____	_____

Loader/Deck Area

YES NO

Operator does not swing boom or loads over workers	_____	_____
Truck drivers exit cab and stay safe distance from loading operation	_____	_____
All employees on ground stay safe distance from loading area	_____	_____
Loader has protective cab guarding	_____	_____
Logs placed properly on trucks (tightly secured below standards)	_____	_____

Felling Operations

YES NO

Minimum two tree length distance between felling and closest worker	_____	_____
All lodged and hung trees safely pulled down as soon as possible	_____	_____
Chainsaw safety devices present and operational	_____	_____
Overhead hazards checked before felling	_____	_____
High wind conditions avoided when manually and mechanically felling	_____	_____
Manual felling cuts result in directional felling	_____	_____
Domino tree felling or using pusher trees prohibited	_____	_____
All employees maintain at least 300 feet from high speed disc cutters	_____	_____
High speed cutter teeth, teeth holders and disc properly maintained	_____	_____
Protective cab structure and guards in place on mechanical cutters	_____	_____

Manual Limbing and Bucking

YES NO

Area clearly identified and free of random equipment movement	_____	_____
Skidder operators have clear view of approach and eye contact with limbers	_____	_____
Limbers/buckers determine direction of limb or log movement before cutting	_____	_____
Spring poles safely released and removed	_____	_____
Chainsaws controlled during cuts and traveling between cuts	_____	_____

Skidding Operations

YES NO

Adequate guarding of cab front, sides and rear	_____	_____
Safe operating speeds and seat belt worn by all operators	_____	_____
Passengers prohibited	_____	_____

COMPANY SAFETY POLICY

ANNUALLY

Safe Policy for _____
(company name)

It is the policy of _____
(company name) to provide as safe a workplace as possible for our employees. **SAFETY IS OUR NUMBER ONE PRIORITY.** *Accidents and injuries are preventable.*

Our Safety Policy includes:

1. A responsible employee in a position of authority will be appointed Safety Coordinator.
2. _____
Employee Name has been appointed to fill this position.
3. Owners, supervisors, foremen and employees are responsible for implementing this policy by working in a safe manner.
4. Regularly scheduled safety meetings will be held with all employees.
5. All accidents will be reported, investigated and actions taken to prevent reoccurrence.
6. All new employees will be trained in safe working practices for the particular jobs and closely supervised until they are fully capable of safe performance.
7. All employees are required to use personal protective equipment provided by this company or the employee. Equipment will be kept in good condition.
8. Employees will report any and all accidents to their immediate supervisor.
9. All employees are expected to cooperate in keeping work areas clean and free of hazards. Employees will report any observed hazard to their immediate supervisor.
10. Each employee is required to keep a safe distance from other employees while moving equipment and other hazards.
11. Employees will operate equipment as instructed in a safe and reasonable manner. Equipment operator's manuals will be available to employees.

COMPANY SAFETY POLICY

ANNUALLY

Minimum Safety Rules for _____
(company name)

1. All accidents, no matter how slight, must be reported to your supervisor IMMEDIATELY.
2. Any employee injured on the job or requiring medical treatment must first report the injury to her/his supervisor. A medical emergency is an open wound requiring stitches, loss of consciousness, or any injury involving broken bones. If you go to the Emergency Room or to a physician on your own, you may have to pay your own bill. The company has the right to refuse payment when the company has approved a medical provider for treatment and you elect to use the services of another physician without obtaining consent from the company.
3. Personal protective equipment (hard hats, chaps, eye protection, hearing protection, gloves, etc.) will be provided and must be worn in designated areas at all times.

Designated areas where personal protective equipment is required are as follows:

4. All workers must wear appropriate footwear. Tennis shoes, platform shoes, sandals, etc. are not acceptable. Chainsaw operators must wear cut resistant safety footwear.
5. Use of alcohol and/or illegal narcotic drugs on the job or the debilitating effects of their prior use shall not be permitted and shall be grounds for immediate termination of employment.
6. Machine guards and/or protective shields, barricades, safety devices, etc. shall not be removed except by authorized personnel such as mechanics, maintenance personnel, etc. and shall be reinstalled as soon as maintenance activities are completed.
7. Machine and equipment operators must insure that all guards and shields are in place and in proper working condition prior to beginning and during operations.
8. Equipment shall be LOCKED and TAGGED OUT prior to performing any maintenance, making any adjustments, or removing debris. Allow coast down time for all parts to completely stop moving before starting work.
9. When "jump starting" mobile equipment, employees must insure that its running gear is in neutral, brakes are locked, head/blades and/or buckets are lowered, and that no safety device designed to prevent machine movement is being by-passed.
10. HORSEPLAY and running shall not be permitted on the premises, to include all work areas inside/outside buildings and parking lots.

11. If you are unfamiliar with an operation or machine, you must first check with your supervisor and receive proper training prior to proceeding.
12. Any unsafe condition noted must be reported to your supervisor, who is responsible for having the conditions corrected prior to proceeding.
13. When mobile equipment, skidders, dozers, front end loaders, feller bunchers, etc. are not in operation or parked, blades, buckets, cutting heads, etc. must be lowered to ground level.
14. Operators must wear seat belts when mobile equipment is being operated. All employees must wear seatbelts while driving or riding in all motor vehicles.
15. Hitching a ride on any mobile equipment, skidders, dozers, front end loaders, feller bunchers, etc. is not allowed.
16. Employees shall not talk, signal or distract in any manner another employee while they or you are operating moving and/or mobile equipment, chainsaws, skidders, loaders, feller bunchers, etc.
17. Before starting to cut, the employee cutting the tree must make sure all other employees are a distance from the stump at least twice the height of the tree being felled.
18. Workers must keep a minimum distance of at least two tree lengths between themselves and mobile equipment and/or felling operations.
19. Never leave a lodged or hung tree. The area in which the lodged tree is located is to be flagged and the skidder operator notified to pull the hazardous tree to the ground immediately.
20. Employees working on the group, i.e. stumpers, limbers, skidder operators, etc. shall always observe for overhead hazards, i.e. lodged trees, hung limbs, etc.
21. Employees cutting down trees shall have a clear path of retreat before beginning a cut to ensure that a line of escape is available.
22. Always plan the direction of fall of any tree being felled. Proper undercut must be made on all trees where necessary. Never cut a standing tree completely through. Sufficient wood should be left between the undercut and the felling cut that the tree can hinge to prevent kickback.
23. Chainsaw operators must always grip the saw firmly with both hands and never cut with the tip of the chain saw blade.
24. All chain saws must be equipped with a properly functioning chain brake.
25. Employees shall avoid standing between logs that may roll while being bucked or position themselves so as to be thrown or struck while logs or the loader is moving poles.
26. Knuckle boom loader operators must never swing the boom over employees.

27. Loader operators shall never load log trucks above tallest stationary standard. The load must be stabilized to secure and balance the load. SC legal height is 13 feet 6 inches (13' 6").
28. Truck drivers must be at a safe distance away from the truck during loading or unloading operations.
29. When in the immediate vicinity of a log truck each employee shall constantly be aware of, and position himself in such manner so as to insure that he will not be struck by material falling from the truck.
30. All truck drivers must comply with all State and Federal laws, statutes, and regulations relating to highway safety (speed, weight limits, hours of service, traffic signals and signs, etc.)
31. Each employee will be trained in and required to use proper lifting techniques and body mechanics. When confronted with lifting and/or moving any object for which the employee must exert more force than required in the normal performance of his routine duties, he is to either seek the assistance of an adequate number of employees to lift and/or move the object in a safe manner, or lift and/or move it by mechanical means.

NOTE: These safety rules have been developed for the protection of your safety and health. Abiding by these rules will make our operation more efficient and successful; however, repeated violation of these safety rules will be grounds for termination of employment.

Actions to be taken for repeated violations are:

First Offense: _____

Second Offense: _____

Third Offense: _____

Other Disciplinary Actions: _____

I have read and understand the safety rules listed above and agree to comply with the company's safety requirements.

EMPLOYEE SIGNATURES

DATE

PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

CONTINUOUS

Personal Protective Equipment Required By _____
(company name)

Check (✓) PPE Required:

PPE	Loader	Skidder	Buncher	Sawhand	Chipper	Truck Driver
Hard Hat						
Eye Protection						
Hearing Protection						
Safety Shoes/Boots						
Saw Chaps/Leggings						
Gloves/Hand Protection						
High Visibility Vest						
Other						
Other						
Other						
Other						
Other						

I understand the company requirements for proper Personal Protective Equipment and use.

EMPLOYEE SIGNATURES

DATE

EQUIPMENT OPERATION MANUALS

CONTINUOUS

Equipment operation manuals must be with each machine on the job site. Use them as training materials with each new employee before the new job begins. Review the manuals each year with all employees who will operate that specific piece of equipment.

[illegible]

COMPANY TRAINING POLICY

ANNUALLY

Training Policy for _____
(company name)

How and when are employees trained?

How do existing employees receive “refresher” training?

How is training documented? (Equipment, First Aid/CPR, HAZCOM, Hearing Conservation, Minimum Safety Rules, Safety Meeting, Personal Protective Equipment, Emergency Response, etc.)

Who will attend safety workshops or training courses and where will they be held?

What training materials are used? (videos, handouts, checklists, etc.)

What is the training time schedule for new and existing employees?

DRUG AND ALCOHOL POLICY

ANNUALLY

Drug & Alcohol Policy for _____

(company name)

In consideration for employment, I hereby agree to the following rules and regulations pertaining to illegal drugs, alcohol and legally prescribed medical drugs.

1. I agree to notify my employer of the need for me to take any prescription drug(s) that may impair the safe performance of my duties.
2. I agree not to operate any equipment or motor vehicle(s) while taking a prescribed drug that may impair the safe performance of my duties.
3. I agree never to drink alcohol when operating employer owned or leased vehicles or equipment.
4. I agree never to use any illegal or controlled substance while employed.
5. I agree never to report for work while under the influence of alcohol or illegal drugs. I will advise my supervisor upon reporting to work if I am taking medication prescribed by a doctor that may impair the safe performance of my duties.
6. I agree that if I am asked to take a test for illegal or controlled substances and refuse, that it will constitute my voluntary resignation immediately.
7. I agree that if I violate any of the above rules and regulations, my employment will be terminated immediately.
8. Post-Accident Procedure: In the event of an on-the-job injury requiring medical attention, a test for illegal or controlled substance may be given using either blood or urine screening. A positive result will serve as grounds for immediate termination.

Date: _____

Signed: _____
(Employee Signature)

(Print Name)

Witness: _____
(Witness Signature)

(Print Name)

Use as a master copy. Signed photocopies maintained in employee's personnel file.

LOCKOUT/TAGOUT POLICY

ANNUALLY

Lockout/Tagout Policy for _____
(company name)

1. All logging equipment, equipment attachments, transport vehicles and implements will have a lockout or tagout procedure to protect employees conducting service, repair or maintenance. Actions will be based on procedures in the equipment and vehicle operators manual.
2. Equipment will be shut down and place in a Zero Energy State (ZES) for areas on the equipment where work will be performed. Examples of stored energy include GRAVITY (rolling down a hill, broken floor jack), HYDRAULIC PRESSURE (falling boom, falling blade, arms or grapple closing), ELECTRICAL (equipment switch-on, electrical shock), CHEMICAL (fuel can), AIR PRESSURE (changing tires), and THERMAL (high-temperature – hot liquid).
3. Persons authorized to service and repair equipment must eliminate energy from the affected equipment and lockout or tagout the equipment to be sure another person does not energize the equipment. Tags and locks should be readily available and all employees trained in their use. Locks are a prevention tool and tags are a warning tool.
4. No person is to remove or by-pass a tag or lock. Only the employee who placed the tag or lock may remove them. Lockout and/or tagout procedures will reduce the risks of accidents and injuries.

I have read and understand the Company Policy for Lockout / Tagout and agree to follow the state procedures.

EMPLOYEE SIGNATURES

DATE

MACHINE LOCKOUT PROCEDURES

MACHINE NAME & ID NUMBER

OPERATOR

CIRCLE THE ENERGY SOURCES FOR THIS MACHINE

ELECTRICAL

MECHANICAL

GRAVITY

PNEUMATIC

HYDRAULIC

THERMAL

AUTHORIZED EMPLOYEE – LOCKOUT PROCEDURES

1. Turn the IGNITION SWITCH OFF. REMOVE KEY.
2. Disconnect battery before performing repairs on electrical equipment.
3. Set air operated brakes and block wheels.
4. Fully lower blade, lifting device and attachment to the ground. If they must be elevated for maintenance or repairs, chain, block or secure blade, loading or lifting attachment devices with positive means of support to prevent falling.
5. Release hydraulic pressure by engaging controls.
6. Release pneumatic (air) pressure by valves or bleeding the system.
7. Allow thermal energy to dissipate before maintenance or repairs are performed on or near engine, hydraulic systems, and/or fluids.
8. Allow all moving parts to come to a complete stop before performing any repairs or maintenance.
9. Assure machine is locked out and at a Zero Energy State.

RESTORING MACHINE TO NORMAL OPERATIONS

1. Remove all tools, loose parts and cords from the machine.
2. Reinstall and secure all guards and panels. Close all panels and doors.
3. Remove blocks, chains and securement devices. CAUTION – Do not stand under the blade, lifting device or attachment at any time.
4. Make sure the controls are off.
5. Clear the area of other employees before starting and moving the machine.
6. Notify employees the machine is ready for normal operations.

ADDITIONAL SAFETY PRECAUTIONS

DO NOT ALLOW ANYONE TO BE POSITIONED OR MOVE UNDER RAISED EQUIPMENT OR ATTACHMENTS. CRUSHING INJURIES MAY OCCUR.

HAZARDOUS COMMUNICATION PROGRAM

CONTINUOUS

Hazard Communication Program for _____
(company name)

This HAZCOM Program was developed to make employees aware of chemical hazards. Information is provided to employees about chemicals used on the job through a Master List of Chemical Names and Safety Data Sheets (SDS) kept on the job site in a booklet, proper labeling of containers, training new employees and annual reviews for all employees.

The HAZCOM Program Coordinator for this company is _____ {Name}. The Coordinator is responsible for program oversight, maintenance and training.

Complete Chemical List

A list of any hazardous materials used on our job sites is available at _____ {Location}. This list is updated as needed.

Master Chemical List

A list of common and frequently used hazardous materials is available at _____ {Location(s)}. This list is kept with the SDS file on the job site and has an SDS for each chemical listed. First Aid treatments are shown. Employees are to follow recommended guidelines for chemical use.

Safety Data Sheets (SDS)

Information on hazardous materials found on the job site is available to any and all employees. The SDS file is found on the job site at _____ {Location}.

Container Labeling

Hazardous material containers will be clearly labeled as to: *Contents, Correct Hazard Warning or Symbol, Name and Address of Manufacturer*. Labeling is not required for portable containers intended for immediate use. Report damaged or unreadable labels to your immediate supervisor. Damaged or unreadable labels are to be replaced.

Training

1. New employees must attend a training session before working with hazardous materials.
2. This training is to cover:
 - a. Information contained in SDS.
 - b. Physical and health hazards for job site chemicals.
 - c. How presence or release of materials is detected.
 - d. How to protect against hazards by personal protective equipment, special handling, and other controls.
 - e. Emergency procedures in case of leaks, spills or reactions.
 - f. First aid procedures to follow if employees are exposed.

HAZARDOUS COMMUNICATION PROGRAM

CONTINUOUS

3. All employees must receive annual refresher training in above and immediate training if a new material is added or new hazard is determined.
4. Supervisors must receive training adequate to answer employee questions and monitor job site hazards.
5. Any outside contractor will be advised of any hazards existing on the job site, location of SDS's and must provide proper labeling and SDS for any chemical brought on the job site.

Additional Information

Any employee can obtain additional information by contacting the designated HAZCOM Program Coordinator listed above.

The HAZCOM Program above has been reviewed with me and I understand my rights and responsibilities.

EMPLOYEE SIGNATURES

DATE

HAZCOM MATERIALS MASTER LIST

CONTINUOUS

HAZCOM Materials List for _____
(company name)

A SDS for HAZCOM Materials below is available at:

(SPECIFY SDS LOCATION)

MATERIALS:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

List will be updated as needed. Master HAZCOM list prepared by:

(Name) (Title) (Date)

Use form as a master. Copy and complete materials list. Use copy for updates.

EMERGENCY RESPONSE PLAN FOR HAZARDOUS MATERIALS

CONTINUOUS

Emergency Response Plan for _____

(company name)

Most spills will involve fuel oil, motor oil or hydraulic oil. Only fuel oil is classified as a “hazardous material”. The following actions will be used to handle leaks and spills and to prevent any environmental damage. Designated persons will be trained as a first response team. Training will include: how to contain spills, how to clean up spills, recognizing hazards in clean up and limits on ability to clean up.

Reporting the Spill

Any leak or spill must be reported to an immediate supervisor. The reporting sequence is as follows:

Employee → Supervisor → Company Owner → SC DHEC 803-253-6488

Spills that threaten lives or have significant environmental threat must be reported immediately. If you cannot reach someone in the chain of command then report directly to SC DHEC.

When talking to SC DHEC be sure to:

- Give good directions to the spill site.
- Do not hang up until directed to do so.
- Record name of person with whom you spoke to and time of call.
- Write a brief report including calls made, public agency answers and responses, actions taken by you and other company employees.

Handling the Spill

If the material is listed as hazardous or you do not know what it is...

- Do not attempt containment or clean up.
- Stay a safe distance away.
- Allow no one to enter the area. Safely flag the area if necessary.
- Large volumes of gasoline or other volatile substances should be avoided.
- Call and wait for the first response team.

If the material is known and is not hazardous...

- Stop the release if you have been trained on operating/opening/closing the container.
- Fire and other dangers do not exist.

Continued...

EMERGENCY RESPONSE PLAN CONT'D...

CONTINUOUS

Our trained employees *First Response Team*:

Spill kit tools and supplies consist of:

Spill kit location: _____

These employees have reviewed this Emergency Response Plan and understand their duties.

EMPLOYEE SIGNATURES

DATE

BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

CONTINUOUS

Bloodborne Pathogens Exposure Control Plan for _____

(company name)

This plan has been developed to minimize and prevent exposure of employees to disease causing microorganisms in human blood and bodily fluids. All employees who could be exposed to blood or infectious materials are involved in this program. The OSHA Bloodborne Pathogens Standard applies to those persons who are first aid trained and those who would be exposed while not in a first aid capacity. This could be interpreted to be all employees on a logging job, who by the nature of their work, would be exposed.

Bloodborne Pathogens

Those agents, primarily viruses, present in human blood, semen, vaginal secretions, internal body fluids, and any body fluid contaminated with blood. Urine, feces, and vomit are not considered infectious unless contaminated with blood. The two worst pathogens are considered to be HIV/AIDS (Human Immunodeficiency Virus) and HBV (Hepatitis B Virus). Of these two, HBV is the most prevalent and most contagious. HBV can be fatal. HIV leads to the fatal disease of AIDS.

Hazards

HIV/AIDS and HBV can be spread in the workplace by blood contact with an open wound (scratch or cut), blood contact with mucous membranes (mouth, eyes, nose), being stuck with a used hypodermic needle (diabetic use), or being cut with a contaminated sharp edge (scissors or knife).

Clothing and other materials can become contaminated and can be sites for infection. An employee can be exposed by using improperly cleaned equipment where blood and/or body fluids are present. Touching and removing blood soaked clothing or bandages can also lead to infection. Someone away from the job can also become affected such as a spouse or garbage collector who comes in contact with the contaminated material.

Prevention

- **Protective Equipment:** Protective items must be used during administration of First Aid or CPR (disposable rubber gloves, eye protection, and mouthpiece or airway device). These must be readily available on the job site. Employees should know the location and have access to these items.
- **Handling:** *ONCE* used rubber gloves must be properly and safely disposed of. Employees must wash their hands immediately after removal of disposable gloves. Equipment in contact with blood or body fluids must be washed immediately with soap and water.
- **Clothing and Articles:** Personal clothing and equipment must be cleaned, laundered, disposed of or replaced, if contaminated. The logger supervises the disposal. Consider calling the local Health Board or other medical authorities. Sharp objects must be placed in puncture-proof bags.

continued...

BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN CONT'D

Housekeeping: All equipment and work areas exposed to blood or other body fluids must be cleaned with a disinfectant. All tarps and protective covers should be cleaned or replaced, if contaminated. Eating, drinking, smoking, and applying contact lens are prohibited in work areas where there is a possibility of contact with human blood or body fluids.

Hepatitis B Vaccinations: Any person who has had an occupational exposure has the right to request a series of three injections. The logger may arrange for the three injections over a six month period prior to the exposure or offer this series within 24 hours of a first time exposure. The employee, normally a first-aid, is not required to take the vaccination. If he/she declines then a form must be signed stating the decision. Injections are at no cost to the employee. [Refer to 29 CFR 1910.1030, Appendix A].

Post Exposure and the Follow-Up: The employee reports the exposure immediately to his supervisor. The logger writes down the method of exposure and details the incident. Personal data such as identification can be included in the medical file. Blood from the victim and exposed person is collected and tested. Medically indicated treatment to prevent disease will be given to the employee. Counseling of the employee regarding results of the finding and documentation from the health care provider will be give to the employee. A record of illnesses of the employee after the incident shall be documented for one (1) year.

Training: An annual training session will address this plan. Names of attendees and the names of certified individuals will be documented. It is recommended that this be done in conjunction with first aid/CPR training.

EMPLOYEE SIGNATURES (*) indicates First Aid Responder

DATE

Recordkeeping:

- Employee illnesses for one (1) year after exposure.
- Training records for three (3) years.
- Employee medical records for thirty (30) years after leaving employment.
- A copy of the 1910.1030 Standard must be available.

Program Coordinator: _____ [Name]

HEARING CONSERVATION – WHAT IT MEANS FOR EMPLOYERS

CONTINUOUS

Hearing loss can happen slowly over a period of time, or it can happen instantly with exposure to a loud, sudden noise. Either way, it can affect you as an employer.

If your employees work in conditions where they have to shout to be heard, your company probably falls within OSHA guidelines with regard to hearing conservation. Effective April 1983, OSHA amended the requirements for Occupational Noise Exposure. The Hearing Conservation Amendment reduced the allowable noise exposure for employees to 85 decibels per eight-hour period. Most machinery used in the logging industry ranges from 85-110 decibels.

If you have such noise levels, you should have a hearing conservation program in place. You might say, “I provide hearing protection, isn’t that enough?” Not according to OSHA:

A complete hearing conservation program consists of five areas:

1. Sound level measurements
2. Audiometric testing and evaluation
3. Hearing protection
4. Education
5. Recordkeeping

Sound Level Measurements: You, the employer, have to know how loud your equipment is to know if you should have a program. These measurements determine what type of hearing protection your employees should use. They also help determine who should be included in the program. Many insurance companies will measure your sound levels free of charge. The SC Department of Labor also has a program to measure noise levels for small businesses, although sometimes there is a waiting period. Contact OVP at (803) 896-7744. You can also take your own sound level measurements if you have a calibrated sound level meter. Most industrial audiological companies can explain how to do this. Some companies may allow you to borrow a sound level meter. These options can save your company money; however, certain criteria must be met.

Audiometric Testing: Hearing tests are conducted at least once each year. The first test is called the baseline test. This determines the employee’s hearing threshold – the level at which they can just hear a tone presented at each frequency. Each year thereafter, an annual test is conducted. The results are compared to the baseline to measure any changes in hearing. An audiologist or medical professional makes appropriate recommendations: a change in hearing protection, ensuring employees are wearing their protection correctly, medical referral. If there is a significant change at certain frequencies, known as a Standard Threshold Shift (STS), the employee and incident is recorded on the OSHA-300 Forms.

Hearing Protection: Employees should be provided with adequate hearing protection. This can be in the form of formable, disposable ear plugs, hard runner plugs, ear muffs, customized hearing protection, etc. There are a variety of different options. It’s not enough, however, just to provide hearing protection. As an employer, it’s also your responsibility to make sure the hearing protection is worn and it’s worn correctly. Hearing protection should be treated just like any other protective devices. How do you handle

continued...

an employee who doesn't wear safety glasses or an employee who doesn't wear safety boots? An action process and/or policy should be available for these situations.

Education: Education is considered to be one of the most important aspects of the hearing conservation program. OSHA requires specific topics be covered in safety sessions which should be conducted each year. Employees are much more likely to wear their hearing protection if they understand how it protects them.

Recordkeeping: When OSHA inspectors come into the workplace, one of the first things they ask for is documentation. Written documentation proves that testing and training were conducted. You should keep all employee test results, sound level measurements and records of educational sessions (who attended and topics covered). It is not only important to have a hearing conservations program to avoid OSHA citations, but also to protect the health and well-being of your employees. Hearing loss is painful, progressive, permanent and preventable!

EMPLOYEE SIGNATURES

TEST DATE

HEARING CONSERVATION PLAN

ANNUALLY

Hearing Conservation Plan for _____
(company name)

Protecting the hearing of employees is a priority. This operation will take the following steps to help prevent hearing loss.

1. All employees will wear hearing protection in areas where noise levels are above 85 decibels.
2. Noise Level Decibels can be expected in the following ranges at full power:
 - a. Chainsaw 105-110 decibels
 - b. Skidder 100-105 decibels
 - c. Feller Buncher 100-105 decibels
 - d. Loader 100-105 decibels
 - e. Chipper/Grinder 100-110 decibels

An annual noise level check, listed above, should be made to identify high noise areas.

3. Employee training will be conducted for those exposed to noise above 85 decibels, including:
 - A safety meeting on hearing conservation
 - A discussion on proper types of protection
 - Being told to wear hearing protection
 - Documentation on a safety meeting record form
4. Employees exposed to noise over 85 decibels will wear one of the following approved types of hearing protection:
 - Formable, disposable ear inserts or hard rubber ear inserts
 - Ear muffs attached to hardhats
 - Ear muffs attached to head band
 - Customized hearing protection acceptable for job application

FIRST AID KIT CONTENTS

ANNUALLY AND WHEN USED

Kits must be available on each job site and in transport vehicles.

Large First Aid Kits on job site are located: _____

The contents of the first-aid kit listed should be adequate for small work sites, consisting of approximately two or three employees. When larger operations or multiple operations are being conducted at the same location, additional first aid kits should be provided at the work site or additional quantities of supplies should be included in the first aid kits. Contents include:

1. Gauze pads (at least 4x4 inches)
2. Two large gauze pads (at least 8x10 inches)
3. Box of adhesive bandages (band aids)
4. One package gauze roller bandage at least 2 inches wide
5. Two triangular bandages
6. Wound cleaning agent (such as sealed moistened towelettes)
7. Scissors
8. At least one blanket
9. Tweezers
10. Adhesive tape
11. Latex gloves
12. Resuscitation equipment such as resuscitation bag, airway or pocket mask
13. Two elastic wraps
14. Splint
15. Directions for requesting emergency assistance

Compact Kits could be carried by chainsaw operators working away from the logging deck. At minimum, kits should contain:

1. Wound compress
2. Latex gloves
3. Assorted adhesive bandages (band aids)
4. Antiseptic wipes

All items should be packaged to remain clean and dry.

Contents lists are based on the Federal OSHA Logging Operations Standard. Refer to the Logging Operations Standard 29 CFR 1910.266.

FIRST AID TRAINING RECORD

ANNUALLY

First Aid Training Record for _____
(company name)

The following employees have completed the indicated training. Photocopies of signed certification cards are on file at _____ [Location]

SC OSHA requires the employer shall ensure there are at least two (2) designated employees at each active landing who are trained and certified in First Aid & CPR to immediately respond and provide emergency assistance if needed with the remainder of employees at the landing (on the jobsite) trained at a level of the individual's competency.

TRAINING COMPLETION DATES

Employee Signature	First Aid	CPR	Bloodborne Pathogens
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAFE BEHAVIOR OBSERVATIONS

OPTIONAL (NOT REQUIRED)

Safe behavior observations are simple notes on how an employee is observed working. Work behavior is the key to eliminating accidents because it involves all aspects of equipment, job site terrain, weather, and human behavior and decisions. Potential hazards should be identified for major job activities using supervisor and crew input.

Write in how to avoid these hazards on the forms. Later, observations should be made by a supervisor or another employee and the results shared with the employee observed. Points of interest should be shared at crew safety meetings.

Safe Behavior Observation Forms are suggested for the following jobs or work sites:

Chainsaw Operation (example attached)

Shop Area

Skidder Operation

Loader Operation & Deck Area

Fellerbuncher Operation

Haul Truck Operation

Crawler Tractor Operation

Chipper Operation

Develop Safe Behavior Observation Forms for other operational areas.

SAFE BEHAVIOR OBSERVATIONS

CONTINUAL BUT OPTIONAL (NOT REQUIRED)

Safe Behavior Observation for _____
(company name)

[EXAMPLE FORM]

Job: Chainsaw Operation

Behavior

Inspect chainsaw before use for proper chain tension, good repair, loose bolts and screws, levels of fuel and chain lubricant, filter condition and that all safety features work. Wear required and necessary personal protective equipment. Start saw from a stable surface clear of debris and combustible material. Position body properly with secure footing. Set chain brake, turn on switch, position choke and pull starter rope. Once started, release trigger and be sure chain does not move at engine idle. Never carry saw unless chain brake is engaged or engine off. Keep blade pointed to the rear when transporting. Inspect work area for hazards and plan an escape route before cutting. Never cut above shoulder level. Keep chain teeth sharp. Control saw at all times. Wrap the thumb around the top saw handle bar. Use open-faced cuts and back cuts to directionally fell trees. Limbing and topping done to prevent turning or rolling of logs. Spring poles safely removed. Take rest breaks when necessary. Allow saw time to cool before refueling or adding lubricant.

Observations (✓ Behavior)	Safe	Unsafe	Comments
1. Chainsaw inspection	_____	_____	_____
2. Saw started properly	_____	_____	_____
3. Inspection of starting site and cutting area	_____	_____	_____
4. Proper carrying technique	_____	_____	_____
5. Inspection of work area	_____	_____	_____
6. Escape route planned	_____	_____	_____
7. Saw never used above shoulder level	_____	_____	_____
8. Saw in control at all times	_____	_____	_____
9. Proper open-faced cuts and back cuts	_____	_____	_____
10. Logs stable when limbing and topping	_____	_____	_____
11. Adequate work breaks taken	_____	_____	_____
Total Observations SAFE	_____		
Total Observations UNSAFE		_____	
% SAFE Observations	_____	%	[% SAFE = (# SAFE/11) x 100]

Comments: _____

By: _____ Date: _____

SAFE BEHAVIOR OBSERVATIONS

CONTINUAL BUT OPTIONAL (NOT REQUIRED)

Use as a Master Form for job. Copy, complete job behavior & use for observations.

Safe Behavior Observation for _____
(company name)

Job: _____

Behavior _____

Observations (✓ Behavior)	Safe	Unsafe	Comments
1	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
Total Observations SAFE	_____		
Total Observations UNSAFE		_____	
% SAFE Observations	_____	%	

Comments: _____

By: _____ Date: _____

ANNUAL HEAT STRESS TRAINING

CONTINUAL BUT OPTIONAL (NOT REQUIRED)

Background: In the wood product industries, most work is performed outside or in a facility that cannot be air-conditioned. The high temperatures are accompanied with high humidity levels during the summer months. When these conditions exist, employees are more likely to encounter heat-related illnesses.

What must an employee know: As a supervisor or employee, you should know how to recognize a victim of heat-related illnesses. Understanding the signs of heat-related illnesses could protect you and others from heat stroke. Employees must watch each other and familiarize themselves with the symptoms of heat illnesses.

Some symptoms to watch for:

- Red flushed skin
- Weakness
- Dizziness
- Nausea
- Seizures
- Headache
- Rapid pulse
- Unconsciousness
- Internal body temperature of 106° or higher

High temperatures and humidity stress the body's ability to cool itself, and heat illness becomes a special concern during hot weather. There are three major forms of heat illness: **heat cramps**, **heat exhaustion**, and **heat stroke**, with heat stroke being a life threatening condition.

- **Heat Cramps** - Heat cramps are muscle spasms which usually affect the arms, legs or stomach. Frequently they don't occur until sometime later after work, at night, or when relaxing. Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion. Although heat cramps can be quite painful; they usually don't result in permanent damage. To prevent heat cramps, drink electrolyte solutions such as Gatorade during the day and try eating more fruits like bananas.

- **Heat Exhaustion** – Heat exhaustion is more serious than heat cramps. It occurs when the body's internal air-conditioning system is overworked, but hasn't completely shut down. In heat exhaustion, the surface blood vessels and capillaries which originally enlarged to cool the blood collapse from loss of body fluids and necessary minerals. This happens when you don't drink enough fluids to replace what you're sweating away.

Symptoms of heat exhaustion include: headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgement, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200), and low to normal blood pressure.

- **Heat Stroke** – Heat stroke is a life threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly

levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion before progressing into the last stroke stage, but this is not always the case. It should be noted that, on the job, heat stroke is sometimes mistaken for heart attack. Therefore, it is very important to be able to recognize the signs and symptoms of heat stroke – and to check for them anytime and employee collapses while working in a hot environment.

The early symptoms of heat stroke include a high body temperatures (103° F), a distinct absence of sweating (usually), hot red or flushed dry skin, rapid pulse, difficulty breathing, constricted pupils; in addition to any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion; but more severe, bizarre behavior, and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108°F.

First Aid Actions: evaluate the symptoms and follow these actions:

- **Heat Exhaustion:** Take the employee to the break room or shaded area for emergency cooling or CPR/First Aid treatment. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks. Try to cool them down, and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink water to replace lost body fluids.
- **Heat Stroke:** Call 911 and get an ambulance on the way as soon as possible. It is vital to lower a heat stroke victim's body temperature. Seconds count. Pour water on them, fan them or apply cold packs.

What an employee can do: Employees can take other preventative measures to combat the heat. Know and react to symptoms of heat related health problems. Learn and use the following:

Smart Safety Rules:

- Drink plenty of fluids throughout the day.
- Avoid consuming drinks that contain alcohol or caffeine.
- Avoid eating heavy meals before working in the heat. Eat light. The more calories you consume, the more body heat you produce.
- Avoid wearing dark, tight fitting clothing.
- Cover as much of your body as possible.
- Choose the proper type and amount of clothing. Cotton allows skin to breathe and absorbs sweat.
- Wide-brimmed hats protect from direct sunlight.

Don't depend on thirst to signal when and how much to drink. Instead, try to drink 5 to 7 ounces of fluids every 15-20 minutes.

ANNUAL HEAT STRESS MANAGEMENT PROGRAM

CONTINUAL BUT OPTIONAL (NOT REQUIRED)

Our policy is to provide as safe as a workplace as possible for our employees. All employees are expected to cooperate as a condition of employment. All employees will be trained on the recognition and prevention of heat related illnesses using the Heat Stress Program.

Emergency Procedures:

In the event of a heat related incident, medical emergency or personal injury, notify _____ or your supervisor, or call 911 as soon as possible. First aid and emergency cooling will be provided until emergency medical assistance arrives. If the person can be moved, carry by stretcher, or walk the individual to the break area to administer first aid or emergency cooling. If the injuries do not allow for movement, then give first aid or emergency cooling at that location.

Company Policy:

- 1. Managers, supervisors and employees are responsible for implementing this policy.
- 2. All employees will be trained in safe working practices and heat illness prevention.
- 3. Cool potable water is available at the service truck. Employees are encouraged to drink water and stay away from caffeinated beverages.
- 4. Employees are encouraged to take breaks in shaded areas or in other cool areas.
- 5. Employees are allowed to self-relieve themselves as needed for water breaks.
- 6. Supervisors and employees are instructed to water out for each other. Training is provided to supervisors and employees on heat related illnesses.
- 7. For new employees or employees not naturally acclimatized, a lighter workload and longer rest periods will be allowed for the first 3-5 days of work. Natural acclimatization will be determined by previous similar work experiences and weather temperature and humidity during those previous work experiences.
- 8. On days when the temperatures exceed 90° and relative humidity exceeds 40% and work demand requires moderate to heavy work, employees are encouraged to drink 5-7 ounces of water every 20 minutes while working in these conditions.

After you have read and fully understand the Heat Stress Management Program policies, please sign and date.

EMPLOYEE SIGNATURES

TEST DATE

DIRECTIONS & CONTACTS FOR EMERGENCY RESPONSE

**CONTINUOUS – COMPLETE A FORM EACH JOBSITE. HAVE FORM READILY
AVAILABLE TO ALL EMPLOYEES**

**Directions & Phone Numbers for Emergency
Response**_____

(company name)

Local Rescue Squad Phone Number(s):

Area_____

Phone_____

Area_____

Phone_____

Area_____

Phone_____

Hospital(s):

City/County_____

Phone_____

City/County_____

Phone_____

City/County_____

Phone_____

City/County_____

Phone_____

Directions to Current Jobsite: Crew #_____

Tract Name_____

Sketch of nearby roads leading to hospitals (attach map if needed):

Nearest helicopter landing area if insured worker was to be removed from logging site:

List landmarks visible to helicopter pilot:

Ground Positioning System (GPS) coordinates: Latitude_____ **Longitude**_____

SAFETY MEETING TOPICS

MONTHLY

Frequent safety meetings are very effective in maintaining everyone's safety awareness. A short weekly safety meeting is recommended. Other times a lengthier and more detailed meeting will be necessary for training, demonstration and/or discussion.

Topics with an asterisk (*) are required by SC OSHA to be reviewed annually with employees.

OSHA Logging Operations Standards 29 CFR 1910.266 require MONTHLY SAFETY MEETINGS be conducted. Use the enclosed SAFETY MEETING FORMS to document these monthly meetings.

- * Hearing Conservation Program
- * HAZCOM / Spill Response Plan
- * Zero Energy State (ZES) / Lockout Procedure
- * Fire Extinguisher Training
- * SDS Review
- * Driver Training / DOT Review
- * CPR / First Aid Review / Bloodborne Pathogen Review
- * Personal Protective Equipment
- Company Safety Policies
- Heat Stroke & Heat Exhaustion
- Log & Transport Truck Inspection
- Chainsaw Safety – Felling, Limbing & Bucking
- Landing & Deck Area Safety
- Equipment Operation Safety & Manuals Review
- Driver Safety
- Logging Equipment & Vehicle Maintenance Safety

Select other topics important to your employees and specific operations.

SAFETY MEETING RECORD

MONTHLY

(company name)

Date: _____

Location: _____

Topic: _____

Presented By: _____

Brief outline of discussion (or attach training material)

Employees in Attendance (Signatures)

_____	_____
_____	_____
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INFORMATION & CONTACTS

Forestry Association of South Carolina

4901 Broad River Road
Columbia, SC 29212
Guy Sabin

Phone: (803) 798-4170
Fax: (803) 798-2340
Website: www.scforestry.org
Email: gsabin@scforestry.org

SC Timber Producers Association

P O Box 811
Lexington, SC 29071
Crad Jaynes, Executive Director

Phone: (800) 371-2240 / (803) 957-9919
Fax: (803) 957-8990
Website: www.scloggers.com
Email: bcjpaw@windstream.net

SC Department of Labor, Licensing & Regulation Office of OSHA Voluntary Programs

P O Box 11329
Columbia, SC 29211-1329
John Ciesielski, OSHA Consultant
Van Henson, Training & Education Supervisor
Harvey Jessup, OSHA Consultant

Phone: (803) 896-7744
Fax: (803) 896-7750
Website: www.scllr.gov
(803) 896-7797 or john.ciesielski@llr.sc.gov
(803) 896-7769 or van.henson@llr.sc.gov
(803) 896-7797 or harvey.jessup@llr.sc.gov

SC OSHA Enforcement – General Information

OSHA Standards Interpretations – Health
OSHA Standards Interpretations – Safety
To report a fatality

Phone: (803) 896-7673
(803) 896-4362
(803) 896-7795
(803) 896-7672

SC Forestry Commission

Mail: P O Box 21717
Columbia, SC 29221
Physical: 5500 Broad River Road
Columbia, SC 29212

Phone: (803) 896-8800
Website: www.state.sc.us/forest/

Clemson Cooperative Extension Service

Forestry Extension
272 Lehotsky Hall
Clemson, SC 29634

Phone: (864) 656-0606
Website: www.clemson.edu/extension/

Insurance Information:

Workers Comp Agency _____
Gen. Liability Agency _____
Com. Auto Agency _____
Equipment Agency _____

Phone _____
Phone _____
Phone _____
Phone _____

Other Important Contacts

Phone _____
Phone _____
Phone _____
Phone _____



**Forestry
Association**
OF SOUTH CAROLINA

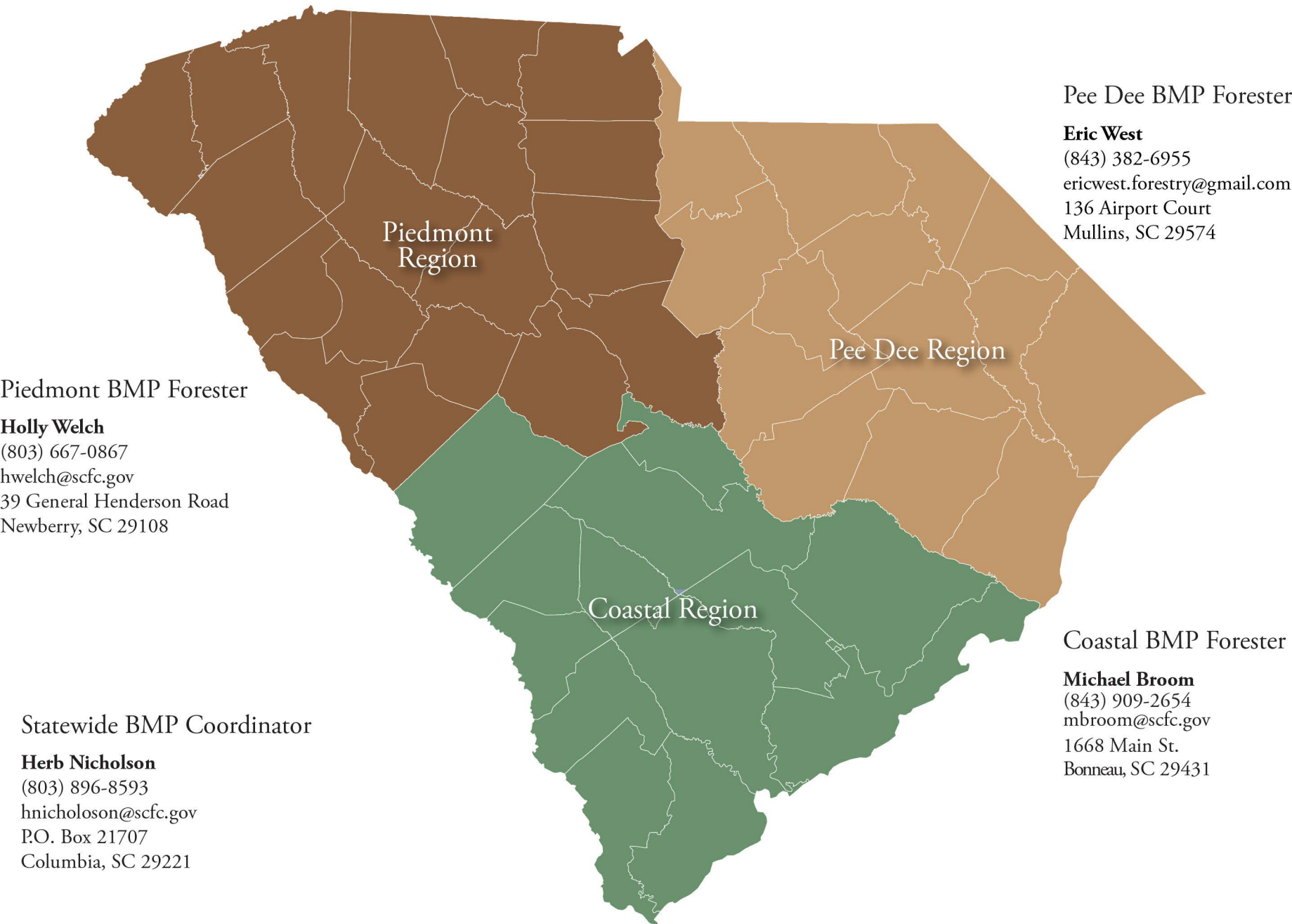
4901 Broad River Road, Columbia, SC 29212

PHONE: 803/798-4170, FAX: 803/798-2340

www.scforestry.org ■ facebook.com/SCForestryAssociation

Environmental and Regulatory

SCFC Regions and BMP Contacts





FOREST RESOURCES ASSOCIATION INC. **LOSS CONTROL**

600 JEFFERSON PLAZA, SUITE 350
ROCKVILLE, MARYLAND 20852

PHONE: 301/838-9385

FAX: 301/838-9481

OVERVIEW

LCO-44

PETROLEUM SPILL RESPONSE & CLEANUP

May 2010

www.forestresources.org/MEMBERSAREA/serpub/LCO-44.html

BACKGROUND: Hydraulic hoses break, cylinders leak, and diesel fuel spills. You know you're supposed to clean it up, but do you know how, or what the reporting requirements are? Loggers are responsible for managing spills and must comply with all spill response regulations, including employee training, appropriate notifications, and cleanup.

Spill Response – The following process is recommended in the event of any spill of a petroleum-based product, in order to protect the safety of employees and to protect the environment.

- 1) Assess the risk of the spill to people and the environment. When in doubt, refer to the Material Safety Data Sheet (MSDS) for the potential hazards.
- 2) Protect yourself with proper personal protective equipment.
- 3) Stop the release at the source.
- 4) Contain the spill – construct barricades using soil, impermeable mats, or absorbent socks/pads. Prevent movement of the spilled material to drainage ditches or streams.
- 5) Cleanup - Remediate in place if allowed by specific state. This may be done by spreading, scarifying, or through the use of a biologically active remediation product. If the spill or contaminated soil may impact water, move the soil to an area that will not pose a threat to water before remediation. If in-place remediation is not an option, soak-up free liquid with absorbent material, and store contaminated soil and material safely until proper disposal can occur.

Take care of small spills daily, if not immediately, by keeping on site a container that is (or can be) labeled specifically for that purpose. When you are through logging the tract, transport the container to an authorized collection center. In the case of larger spills, contact a professional service, unless you have had previous experience handling such situations. Maintain a current contact list of spill remediation contractors at the job site.

Notification – Any petroleum spill in water, or with the potential to reach water, is considered reportable. Federal law requires reporting any sheen on water in ditches, streams, lakes, etc. to the EPA National Response Center - 800-424-8802. Your initial report, however, should generally be at the state level, as state employees will be your primary contact for assistance and guidance. Many states will perform any necessary federal reporting for you. Ask about this service when you call to report a spill. At the state level, reporting requirements for spills not associated with water vary widely, from “no reporting,” to “report only spills which may impact the environment,” to “report all spills.”

Most states have a set number of gallons as the threshold to trigger reporting. Learn your state's requirement, and how quickly a spill must be reported.

Training – Annually conduct and document simulated “spill drills” at a safety meeting. You should keep your state's emergency response number available at the job site at all times, and all employees should know how handle a spill and contact the proper authority.

NOTE: FRA has partnered with BREG Environmental to provide loggers with easy-to-use, economical spill protection and control products for on-site use: http://www.forestresources.org/slideshow/spill_prevention_form.htm. FRA also offers an educational video/leader's guide/sample spill plan: FRA product 01-A-11, *Hazardous Chemical Spill Prevention and Control for Logging Operations*. Contact FRA to order, or for additional information on these products.

Please follow equipment manufacturers' recommendations for safe operation and maintenance procedures.

Business and Finance

The Basics of Logging Cost Analysis: “FOLLOW ALONG”

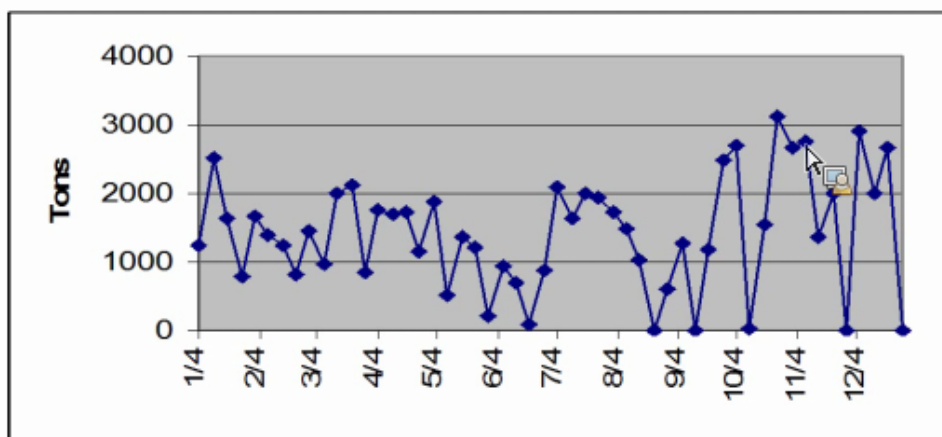
Logging Business owners ask...

- What is my cost per ton to cut and haul timber?
- What can I do to make my business more profitable?
- Is there any way to estimate the cost of logging before starting and finishing a tract?
- What happens to my costs and profits when the cost of fuel or other inputs spike?

Course Outline

- Production records – you must know this!
 - Days worked – this matters too
 - Reading and using financial statements
 - How many tons to break even each week?
 - Ways to put this to work for YOU
-

1. Production Records



Key Production Factors

Loads Delivered per day x Days worked per Year x Tons Hauled per load = TONS PER YEAR

Productions Levels

- We tend to remember our good weeks longer than our bad weeks (and our larger fish, lower golf scores, etc.)
- When asked about their average production level, most loggers overstate their true average (they forget bad weeks.)
- They are not dishonest, just human.
- The difference in profit between the true average and their estimate can be BIG.
- To effectively manage your costs, you need to know your true average production level, not just your potential production rate.

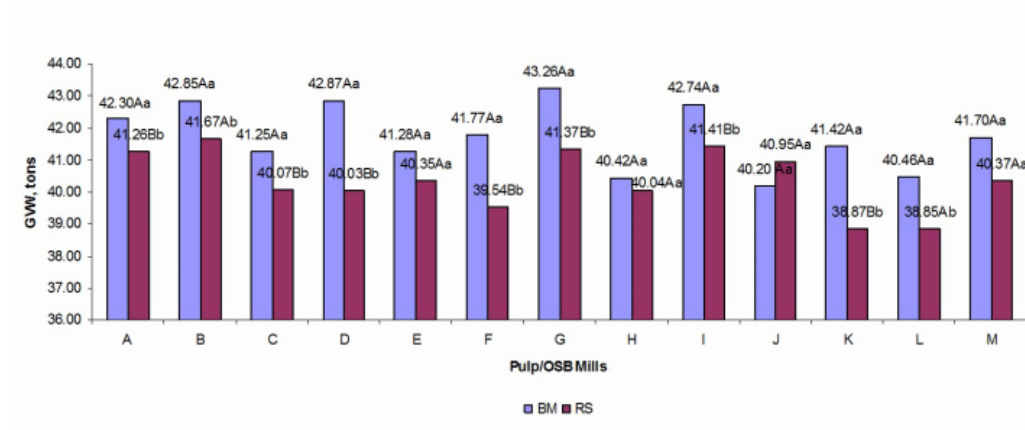
Perception vs. Reality Example = \$50,000+ in PROFIT

	Goal	Average
Loads per Week	84	78
Tons per Week	2,090	1,950
Rate Paid, \$/ton	21.00	21.00
Cost, \$/ton	19.54	19.96
Profit, \$/ton	1.46	1.04
Annual Profit	\$ 152,570	\$ 101,400

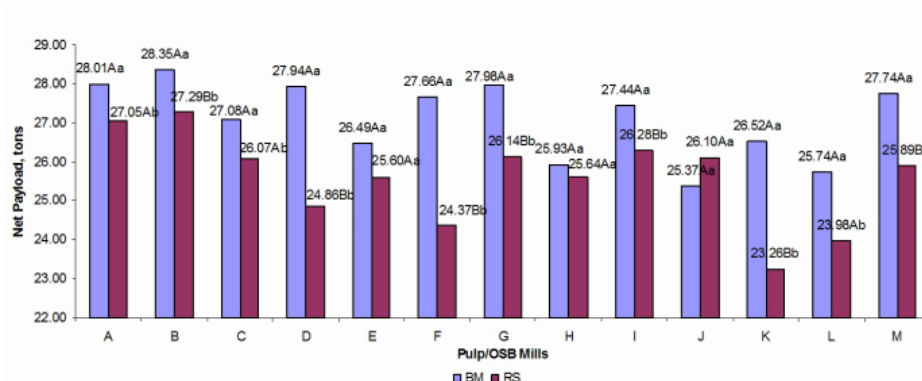
Production Information

- Load tickets
- Enter yourself or download from mills
- GOLD MINE of information – mine it!
- Loads
- Tons of wood per load
- Tare weights
- GVW

Benchmark Loggers – Average GVW



Benchmark Loggers – Net Payload



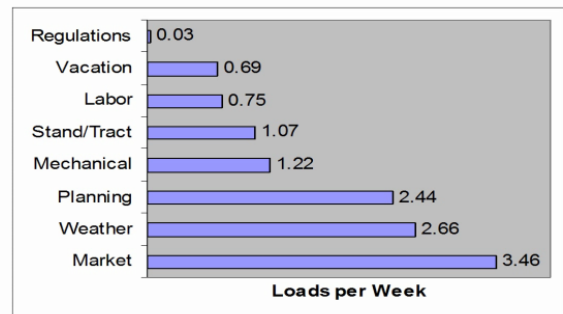
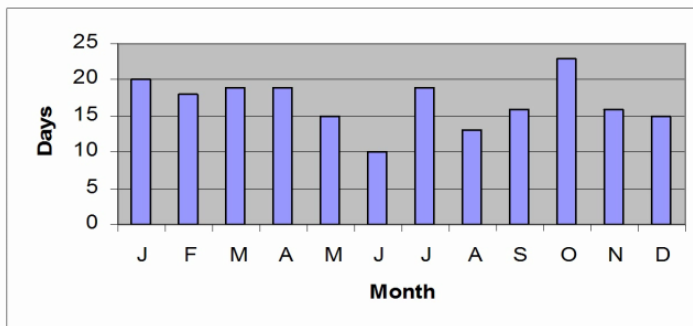
Stop & Discuss – Production

- Loads per day or week
- What is true average?
- $\text{Truck GVW} - \text{Tare Weight} = \text{Payload}$
- Use chart to see variability in each
- Reduced variability = CONTROL

2. DAYS WORKED

What caused missed days or tons?

- You need records to know this.
- A diary, notebook or organizer on the seat of the pickup works fine.
- Write it down or you forget it.
- What can I control and what is out of my control?



Greene, W.D., J.H. Mayo, C.F. deHoop, and A.F. Egan. 2004. Causes and costs of unused logging capacity in the southern USA and Maine. Forest Products Journal 54(5): 29-37.

Missed Days – Possible Causes

- Market: Quota, mill downtime, slow unloading
- Weather: woods too wet, roads too wet
- Mechanical: equipment down
- Labor: not enough, poor quality
- Moving
- Timber conditions

Production is KEY

- No mill knows your production better than you do – exploit that.
- Days x Loads x Payload – Max all 3
- Know WHY not just WHAT happened
- ACT to improve these three factors

Stop & Discuss – Days Worked

- Loads per week
- X Tons per Load
- X Days per Week = ANNUAL PRODUCTION
- GOAL is to MAX ALL THREE

3. READING & USING FINANCIAL STATEMENTS

Accounting methods seek to answer two basic questions:

1. How well did the business perform for a given time period? (Income Statement)
2. Where does the business stand at a given point in time? (Balance Sheet)

Income Statement

- Reports financial activity of the business *over a given period of time*.
- Monthly, quarterly, annual reports
- Revenues – Expenses – Net Income
- Detailed categories for sources of revenues and expenses

Sample Income Statement (Source: Jay Jackson, Moncks Corner, SC)

ABC Logging, Inc. Income Statement for the period ending December 31, 2012			
REVENUES:			
Logging Fees			\$ 1,265,328
Interest		\$ 240	
Income from Sale of Equipment	\$ 55,253		
less salvage value	\$ (41,440)	\$ 13,813	
Total Revenues:			\$ 1,279,381
EXPENSES:			
Salaries	\$ 320,772		
Unemp. Tax	\$ 4,200		
Benefits	\$ 71,578		
Maint/Rep	\$ 175,783		
Fuel/Oil/Tires	\$ 302,176		
Insurance	\$ 50,243		
Wk Comp	\$ 35,148		
Admin.	\$ 19,098		
Txs/Lcnss	\$ 11,137		
Contract Hauling	\$ 44,030		
Depreciation - Equipment	\$ 177,771		
Depreciation - Buildings	\$ 1,538	\$ (1,213,472)	
NET OPERATING INCOME:			\$ 65,909
Less: Interest Expense	\$ (39,822)		
NET TAXABLE INCOME:			\$ 26,088
Less: Income Taxes (20%)	\$ (5,218)		
NET INCOME:			\$ 20,870

Balance Sheet:

Reports financial activity of the business *on a specific date*.

- Typically provided with an annual report
- Assets = Liabilities + Equity
- Equity = Assets – Liabilities
- Equity = Capital Stock + Retained Earnings
- A running score of the status of the business over its life (after any dividends are paid)

Sample Balance Sheet (Source: Jay Jackson, Moncks Corner, SC)

ABC Logging, Inc. Annual Balance Sheets for the periods ending December 31, 2011 and 2012				
<u>Assets:</u>	<u>2012</u>	<u>%</u>	<u>2011</u>	<u>%</u>
Current Assets:				
Cash	\$ 48,000	7%	\$ 32,032	7%
Accounts Receivable	\$ 22,376	3%	\$ 21,872	5%
Prepaid Expenses	\$ 8,400	1%	\$ 8,320	2%
Total Current Assets:	\$ 78,776	12%	\$ 62,224	13%
Fixed Assets:				
Land	\$ 20,000	3%	\$ 20,000	4%
Buildings	\$ 60,000	9%	\$ 60,000	12%
Equipment	\$ 1,456,000	227%	\$ 1,322,400	275%
Less Accumulated Depr:	\$ (972,053)	-151%	\$ (984,064)	-205%
Total Property & Equipment:	\$ 563,947	88%	\$ 418,336	87%
Total Assets:	\$ 642,723	100%	\$ 480,560	100%
<u>Liabilities & Stockholder's Equity</u>				
Current Liabilities:				
Accounts Payable	\$ 46,400	7%	\$ 44,800	9%
Taxes Payable	\$ 10,240	2%	\$ 8,387	2%
Mortgage Notes Payable	\$ 156,551	24%	\$ 74,071	15%
Total Current Liabilities:	\$ 213,191	33%	\$ 127,258	26%
Long-Term Liabilities:				
Mortgage Notes Payable	\$ 206,943	32%	\$ 151,583	32%
Total Long-Term Liabilities	\$ 206,943	32%	\$ 151,583	32%
Total Liabilities:	\$ 420,134	65%	\$ 278,841	58%
Stockholder's Equity:				
Common Stock, par value \$10 per share	\$ 50,000	8%	\$ 50,000	10%
Retained Earnings	\$ 172,589	27%	\$ 151,718	32%
Total Stockholder's Equity:	\$ 222,589	35%	\$ 201,718	42%
Total Liabilities & Stockholder's Equity	\$ 642,723	100%	\$ 480,560	100%

Fixed vs. Variable Costs:

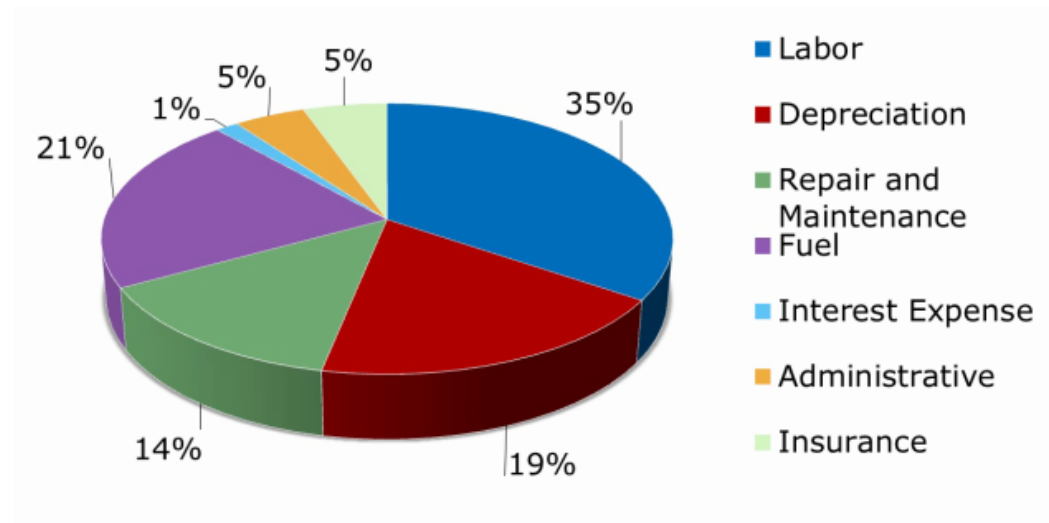
Fixed Costs do not vary with the amount of wood produced or the time worked during any time period. They are a fixed amount each week, month or year.

Variable Costs are directly influenced by the amount of wood produced or the amount of time worked.

Expense Categories:

- Some will be defined by IRS or other reporting needs.
- Others should be defined to give you detailed information about your business.
- Do not combine fixed costs and variable costs in a category. Keep these separate. This is important in calculating your break-even level.

Southern Cut & Load Cost Components – 2013:



Six Costs Categories:

Summarize income statement expense into: Source: Loving (1991)

1. Consumable Supplies (variable)
2. Labor (variable & fixed)
3. Equipment (fixed)
4. Insurance (variable & fixed)
5. Contract hauling (variable)
6. Administrative & Overhead (fixed)

Stop & Discuss – Cost Records

- You already have these – use them!
- Income Statement & Balance Sheet
- Fixed vs. Variable Costs
- Six General Categories

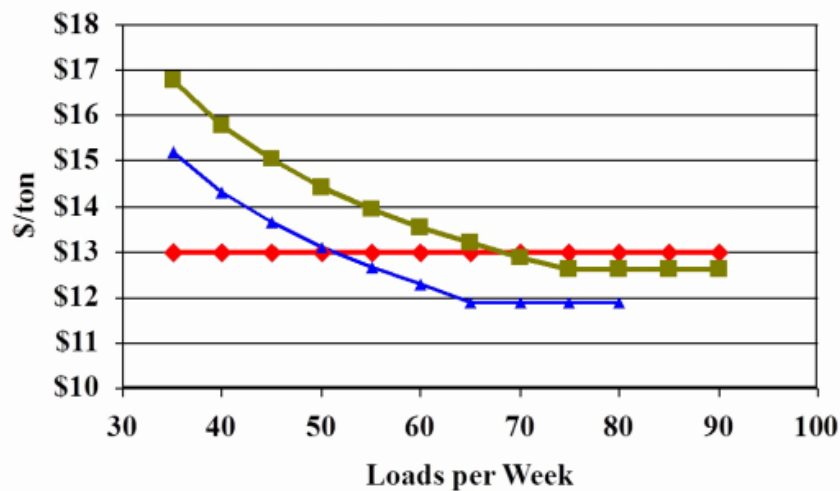
4. HOW MANY TONS TO BREAK EVEN EACH WEEK?

Break-Even Level

- How much production do we need to cover costs and start making a PROFIT?

- We can use a weekly, monthly, quarterly or annual basis. All have their uses.
- Loggers often use this as a minimal loads per week target in managing their operations.
- Longer time periods such as month or a quarter are often more useful to handle weather effects.

Cost vs. Production



Keep in Mind:

- Any way of summarizing costs that work for you is ok.
- Be sure to separate fixed costs from variable costs.
- Need to know operating days per year.
- Need to know tons produced.

Break-Even Level Example:

- East Texas logging contractor – 2001 costs
- 235 days target operating year
- 56,594 tons produced (9-10 loads/day or 241 tons)
- \$760,233 total expenses
- \$13.43 per ton actual costs

(cost figures in 2001 dollars – not adjusted)

Fixed Costs:

- Fixed costs of \$356,771.
- Owner labor (\$100K) is fixed, others variable.
- Equipment, insurance, overhead.
- 235 days per year.
- \$1,518 per day of fixed costs.

Variable Costs:

- Variable costs of \$403,462.
- All labor except owner.

- Consumable supplies and contract hauling.
- 56,594 tons per year.
- \$7.13 per ton.

Break – Even Level EXAMPLE:

How many tons did he need to produce per day to break even if he was paid \$14 per load?

Variable costs of \$7.13 per ton.

Fixed costs of \$1,518 per day (@235 days / year)

$\$14 - \$7.13 = \$6.87$ of fixed costs per ton

Divide \$1,518/day by \$6.87/ton = 221 tons

\$/Ton vs. Days & Tons/Day

Tons/Day	Operating Days per Year					
	235	240	245	250	255	260
175	15.80	15.62	15.45	15.28	15.12	14.97
200	14.72	14.56	14.41	14.26	14.12	13.99
225	13.88	13.73	13.60	13.47	13.35	13.23
250	13.20	13.07	12.95	12.84	12.72	12.62
275	12.65	12.53	12.42	12.32	12.22	12.12
300	12.19	12.08	11.98	11.89	11.79	11.70

Stop & Discuss:

Break – Even Production Level

Need to Know:

- **Tons per year**
- **Days per Year**
- **Fixed Cost per DAY**
- **Variable Cost per TON**

5. WAYS TO PUT THIS TO WORK FOR YOU

OPTIONS:

- What you can do with these concepts depends upon how much and what type of information is available to you.
- This will be different for a wood buyer or procurement forester than for a logging contractor.

LOGGING CONTRACTOR:

- Financial Information
 - Income statement
 - Balance sheet
 - Tax returns
 - Fuel consumption
- You already have some or all of these reasons.
- Know how to use them.
- Decide which measures or ratios to follow.

Options for the Logging Contractor:

- Production records
 - Tons and Loads by Week
 - By product
 - Truck weights (gross, tare, payload)
- Days worked
- Reasons for missed days and productions
- Fuel consumption by machine
- How much detail to track (benefit vs cost)?
- You decide – everyone is different.

How Often to Monitor?

- By week?
- By tract?
- By month?
- By quarter?
- By year?
- Whenever a significant issue arises.

Cost per Ton by Tract YTD

Tract	Loads	Payload	Tons	Days	Moves	\$/Ton
635	55	14.85	817	5	1	?
708	244	26.26	6407	16	2	?
723	91	26.67	2427	7	1	?
681	204	23.93	4882	14	2	?

Cost by Tract

- Assume for your operation...
 - Fixed costs of \$1,800 per day
 - Variable costs of \$10.00 per ton
- What was the cost per ton on each tract?
- What is my average cost per ton YTD?

Example – Tract #635

- 5 days @ \$1,800 per day = \$9,000 fixed costs
- \$9,000 divided by 817 tons = \$11.02 per ton
- Total costs per ton = \$11.02 + \$10.00 = \$21.02
- Why? Small payloads are a major reason

Example – Tract #635: What if Bigger Payloads?

- What if payloads had averaged 25 tons?
- 33 loads needed (instead of 55)
- 3 days to cut tract (instead of 5)
- 3 days @ \$1,800 per day = \$5,400 fixed costs
- \$5,400 divided by 817 tons = \$6.61 per ton
- Total cost per ton = \$6.61 + \$10.00 = \$16.61
- Total Savings = \$3,603 in 3 days

Example – Tract #708

- 16 days @ \$1,800 per day = \$28,800 fixed costs
- \$28,800 divided by 6,407 tons = \$4.50 per ton
- Total cost per ton = \$4.50 + \$10.00 = \$14.50
- Why? Long time on tract (+), large payload (+), good daily production (+), 2 moves to tract (-).

Cost per Ton by Tract

Tract	Loads	Payload	Tons	Days	Moves	\$/Ton
635	55	14.85	817	5	1	21.02
708	244	26.26	6407	16	2	14.50
723	91	26.67	2427	7	1	15.19
681	204	23.93	4882	14	2	15.16

When to Update Your Costs?

- At least each quarter, update your fixed costs per week or day and your variable cost per ton.
- For fixed costs, you might use the number of working days in the past 12 months.
- For variable costs, use the tons produced in the past 12 months.
- These are moving averages and dampen the impact of short-term changes.

Why Try to do This?

- If you have the records, you will immediately be able to estimate the cost of:
 - Fuel price increases
 - Insurance price hikes
 - Legislation affecting labor costs or benefits
- Mill managers get a stack of numbers every morning. If you have a prayer of getting their attention, you need to know your numbers.

Examples of Safety Manual and Truck Driver Rules

BACKGROUND

Each crew truck is provided with a Safety Manual. In addition, each truck is provided with this condensed version of the Safety Manual which gives the basic safety protocols by which we expect crews to operate.

It is the responsibility of the crew leader to update the Safety Manual monthly to include the tailgate safety presentations given out by the Safety Coordinator. The crew leader, after discussing the presentation with the Safety Coordinator will give the tailgate presentation at a time that does not compromise production and at a time in which the entire crew can give its full attention to the material being presented.

NOTE: crew leaders are responsible for the safe operation of all aspects of a harvest job when no other higher members of the management team are present. This includes the oversight of all drivers who haul from their harvest sites.

BASIC SAFETY RULES

1. Loading trucks
2. Trimming and securement
3. Flagging and lighting
4. PPE (personal protective equipment)
5. Refueling
6. Daily maintenance
7. ZES (zero energy state)
8. Chainsaws
9. Trim (pole) saws
10. Fires

The pages that follow give the protocols that are to be followed for each of these ten items listed above. Please note that these are the BASIC rules and that there are many other aspects of safety and safe machine operation that are not listed here nor discussed in this condensed version of the Safety Manual.

LOADING TRUCKS

It is the policy of this company that drivers are required to exit the cab of their truck and to remain a safe distance from the truck while it is being loaded. There are NO exceptions to this rule.

If the driver refuses to exit the cab, the loader operator is instructed NOT to load that trailer and to contact the crew leader immediately. If the loader operator is the crew leader, then the call should be made to dispatch to have that driver leave the dock area.

Drivers who have exited their cab should go to the area in which the crew truck is parked, which is generally a safe distance from all machinery that is servicing the dock. All personnel on the ground must wear a hard hat and drivers must wear some form of reflective garment.

TRIMMING AND SECUREMENT

On docks where it is practical to do so, all drivers must pull away from the loader to trim their trailers and to secure their load.

If the dock is constructed or situated such that the driver cannot pull away from the loader to trim and secure their load, then the loader operator must NOT continue to sort logs while the driver is in the immediate area of danger from moving or swinging logs or other debris.

It is the responsibility of the crew leader to enforce this rule on each dock site. When choosing a dock site give consideration to this need to have space in which to pull away for these duties.

FLAGGING AND LIGHTING

It is the current policy of this company to have each load that leaves the woods to have two flags and a working strobe affixed to the load in a manner that meets the requirements of the state of Georgia.

The rationale behind this change is that adding the additional flag and strobe to loads in SC helps to make the load more visible to the traveling public and to reduce our exposure to accidents. To add this additional protection also serves to show the public that we are operating in a responsible and safe manner.

The crew leader or loader operator should monitor the loads leaving their dock and keep a record of any drivers who fail to properly flag and light a load.

PPE - (personal protective equipment)

At a minimum, a hard hat is required for any employee who is outside of a piece of equipment while the dock is operational.

If the employee is engaged in activity that will potentially expose him to the dangers posed by moving traffic, then a reflective vest shall be required in addition to the hard hat.

Hearing protection is encouraged but is not mandatory. Ear plugs are available upon request.

Eye protection (safety rated glasses) is required if the employee is engaged in a job duty that may expose him to the dangers of flying small objects.

REFUELING

All equipment shall be refueled away from any source of open flame. Engines shall be shut down and properly grounded before beginning the refueling process.

NO SMOKING is allowed while refueling a piece of equipment.

Never leave a piece of equipment being refueled unattended. In other words, do not walk away and leave the nozzle flowing fuel.

If filling a portable fuel container, place that container on the ground before beginning the refill process to reduce the change of sparks that may ignite the fuel.

If you are filling from the service truck's tank, replace the hose properly when you shut down the pump.

Never refuel a hot chainsaw.

DAILY MAINTENANCE

A well maintained piece of equipment is safer to operate, making daily maintenance checks a requirement.

It is the crew leader's choice whether the checks will be done before starting work or after the work day is completed. Maintenance checks after the day's work allow for a cool-down time on all machines which reduces fire hazards after the crew leaves the dock area.

ZERO ENERGY STATE (ZES)

All equipment, when being shut down or when the operator is dismounting the machine, shall have all blades, booms, grapples, or cutter heads lowered fully to the ground.

NOTE: if the operator intends to be away from the machine for more than a couple of minutes, the unit should be shut down and not left to idle while the operator is away.

CHAINSAW USE

All personnel who use a chainsaw on the job are required to wear saw chaps, a hard hat, and eye protection. Ear (hearing) protection is recommended but is not mandatory. Ear plugs and safety glasses are available upon request. (note that you must turn in the old safety glasses to receive new ones at no charge)

Do not walk over rough ground with the saw running and the bar pointed forward in the direction of travel.

Do not “drop start” a saw.

The saw operator is responsible for daily maintenance of the saw and for seeking replacement parts (new chains) through the crew leader.

It is the crew leader’s responsibility to secure all needed safety equipment for their crew (glasses, ear plugs, or replacement chaps) when the old ones are damaged.

POLE (TRIM) SAW USE

All personnel who run a pole saw shall wear a hard hat and eye protection at a minimum. Wrap-around sunglasses are acceptable if they are rated as safety glasses.

All personnel who run a pole saw are responsible for maintenance checks with EACH use. Refill oil and gasoline before the saw runs dry. Replace cutting chains and/or tighten chains to prevent running off.

WARMING FIRES

Place all warming fires in a safe area, away from traffic movement and from all equipment.

NEVER refuel equipment near a warming fire.

NEVER leave a fire burning when leaving the dock (end of day).

Truck Driver Safety Rules

1. All accidents/ Injuries no matter how slight must be reported to your supervisor IMMEDIATELY.
2. Any employee injured on the job or requiring medical treatment must first report the injury to her/his supervisor. A medical emergency is an open wound requiring stitches, loss of consciousness, or any injury involving broken bones. If your injury requires an emergency room visit, then a drug and alcohol test must be performed. If you go to the Emergency Room or to a physician on your own, you may have to pay your own bill. The company has the right to refuse payment when the company has approved a medical provider for treatment and you elect to use the services of another physician without obtaining consent from the company.
3. Personnel protective equipment (i.e. hard hats, eye protection, ear protection, gloves etc.) will be provided and must be worn in designated areas at all times.
4. All workers must wear adequate footwear. Tennis shoes, platform shoes, sandals, etc. are not acceptable.
5. A zero tolerance drug and alcohol policy is in effect – see Company Drug and Alcohol Policy.
6. Equipment shall be LOCKED AND TAGGED OUT prior to performing any maintenance, making any adjustments, or removing debris. Allow coast down time for all parts to completely stop moving before starting work. Make sure the equipment is at a “zero energy” state.
7. If you are unfamiliar with an operation or machine, you must first check with your supervisor prior to proceeding.
8. HORSEPLAY and running shall not be permitted on the premises, to include all work areas in/outside the buildings and parking lots.
9. Physical violence will not be tolerated; violations will include disciplinary action up to and including termination.
10. Pre and post trip inspections of equipment/vehicles must be completed daily.
11. Any unsafe condition noted must be reported to your supervisor, who is responsible for having the conditions corrected prior to proceeding.
12. Daily log sheet/time card sheet is to be completed daily.
13. Three points of contact rule must be observed when entering and or exiting equipment or vehicles at all times.
14. Employees must wear seat belts when tractor-trailers, service trucks, or other vehicles are being operated or when riding as a passenger in a company vehicle.

15. Unauthorized passengers are prohibited on all company vehicles and equipment without prior approval from management, i.e., hitchhikers.
16. All truck drivers must comply with all State and Federal Motor Carrier Safety Administration (FMCSA) statutes and regulations relating to highway safety (i.e., speed & weight limits, drive time, flagging, tarps, signage, etc.).
17. Ensure safety of yourself and your vehicle when on customer property in regards to terrain; hazards that could cause damage to vehicle and or property; knowing vehicle height to recognize potential overhead hazards, etc.
18. Clear vehicle of debris after being loaded and after unloading, i.e. mulch, bark, dirt, sand, etc.
19. Employees shall not talk, signal, or distract in any manner another employee while they or you are operating moving and/or mobile equipment, i.e., chain saws, skidders, loaders, feller bunchers, etc.
20. Workers must keep a minimum distance of at least two tree lengths between themselves and logging equipment.
21. While on the work site, employees shall always observe for overhead hazards, i.e., lodged trees, hung limbs, loading operation, etc.
22. Employees shall avoid standing between logs that may roll while being bucked or position themselves so they cannot be thrown or struck while logs or the loader is moving poles.
23. Driver is responsible for his load. Loader operator shall never load log trucks more than 1/2 the height of the diameter of the outer logs over stationary standards. The load must be rounded in the middle so as to secure and balance the load. The driver is responsible to communicate any correction to the loader operator
24. Employee must be aware of power lines while entering and exiting job sites and while strapping downs loads.
25. At the deck drivers can only remain in the cab of the truck if logs are not swung over the cab. Drivers that remain in the truck during loading or unloading operations must stay in the cab and must not enter and exit vehicle while it is being loaded/unloaded. Rules for individual mills may require all drivers to exit the truck during loading/unloading operation.
26. Truck drivers that leave the cab must be at a safe distance away from the truck during loading or unloading.
27. When in the immediate vicinity of a log truck each employee shall constantly be aware of, and position himself in such manner so as to insure that he will not be struck by material falling from the truck.

28. Each employee will be trained in, and required to use, proper lifting techniques and body mechanics. When confronted with lifting and/or moving any object for which the employee must exert more force than that required in the normal performance of his routine duties, he is to either seek the assistance of an adequate number of employees to lift and/or move the object in a safe manner, or lift and/or move it by mechanical means.

29. Employee must abide to all Federal & State laws, also Company Policy concerning cell phone usage.

NOTE: These safety rules have been developed for the protection of your safety and health. Abiding by these rules will make our operation more efficient and successful; however, repeated violation of these safety rules will be grounds for termination of employment. The following actions may be taken for repeated violations:

First _____
Offense: _____
Second _____
Offense: _____
Third _____
Offense: _____


Other disciplinary actions:

I have read and understand the safety rules listed above and agree to comply with the company's safety requirements.

EMPLOYEE SIGNATURE:

DATE:

[illegible][illegible]

A detailed close-up photograph of tree bark, showing a rough, cracked, and scaly texture. The bark is light brown and grey, with deep vertical and horizontal fissures. The texture is highly irregular and organic.

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