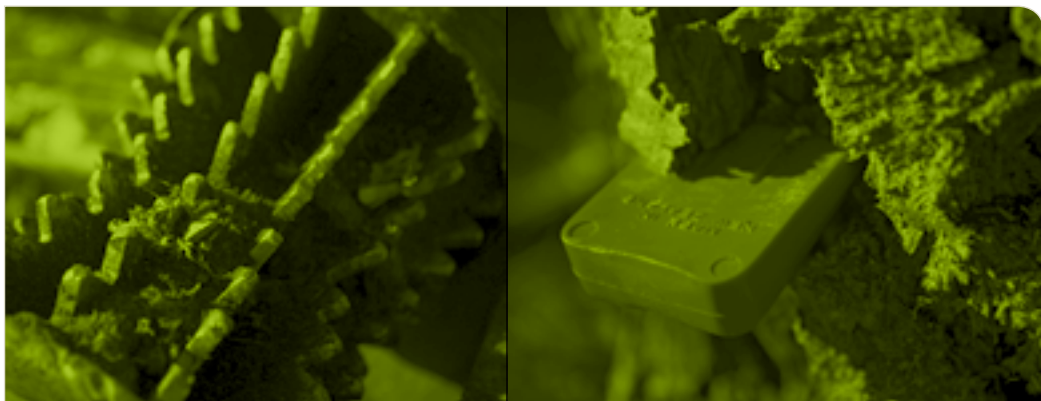




# Approved Code of Practice for Safety and Health in Forest Operations

DECEMBER 2012



DOL 12241 MAR 13



**Ministry of Business,  
Innovation & Employment**



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## ACKNOWLEDGEMENTS

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This update would not have been possible without the considerable input of the members of the Review Steering Committee.

- › FITEC
- › NZ Forest Owners Association
- › Forest industries Contractors Association
- › Rayonier / Matariki
- › PF Olsen Ltd
- › Pan Pac
- › Ministry of Business, Innovation and Employment
- › Accident Compensation Corporation
- › Nelson Forests Ltd
- › Hancock Forest Management

The review committee would also like to thank the individuals who supplied feedback during the review of the rules.



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## NOTICE OF APPROVAL

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The forestry industry plays an important role in New Zealand's economy, and the industry works hard to educate its members to a high standard. However, it is an industry with significant risks and has suffered a large number of fatalities and work-related injuries over the years.

This Approved Code of Practice (ACOP) has been developed in partnership with industry representatives and other agencies and it focuses on improving safety practices and reducing workplace accidents in the industry. It will contribute towards the Minister of Labour's target of reducing workplace deaths and serious injuries by at least 25 percent by 2020.

The Ministry of Business, Innovation and Employment (MBIE) Forestry Sector Action Plan 2010–2013 committed to reviewing and updating key guidance and codes of practice for the forestry sector and I am pleased to give my approval to this ACOP.

This Approved Code of Practice (Section 20 Health and Safety in Employment Act) is a statement of preferred work practices. A Court may consider it when considering compliance with relevant sections of the HSE Act. If an employer can show compliance with all the matters it covers, a Court may consider the employer has complied with the Act.



**Hon. Christopher Finlayson**

*Acting Minister of Labour*



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## FOREWORD

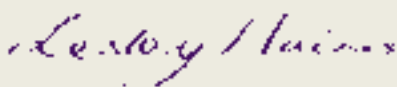
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It gives me great pleasure to introduce this Approved Code of Practice for Safety and Health in Forest Operations.

The Ministry is resolute in its commitment to work in partnership with industries to reduce the number of workplace fatalities, injuries and occupational disease. Between 2003 and 2008, the forestry sector had the highest rate of fatal work-related injuries. Between 2002 and 2008 forestry and logging had the highest rate of serious harm notifications, at 18.4 per 1,000 FTEs per year. This is more than six times the rate for all sectors at 2.9 per 1,000 FTEs per year. The rate of ACC claims for the forestry sector is almost six times the rate for all sectors.

This toll is too high. We must all work together to ensure that all working New Zealanders return home at the end of their working day to their families, their friends, and their communities. We encourage you to work with us to help achieve our goal of reducing worker injuries by at least 25 percent by 2020.

Members of the forestry industry have worked hard with the Ministry to develop this Code. This ACOP reflects the quality input from stakeholder and I am confident it will lead to higher and sustainable levels of health and safety in the industry.



**Lesley Haines**

*Acting Deputy Chief Executive  
Safety and Regulatory Practice  
Ministry of Business, Innovation and Employment*



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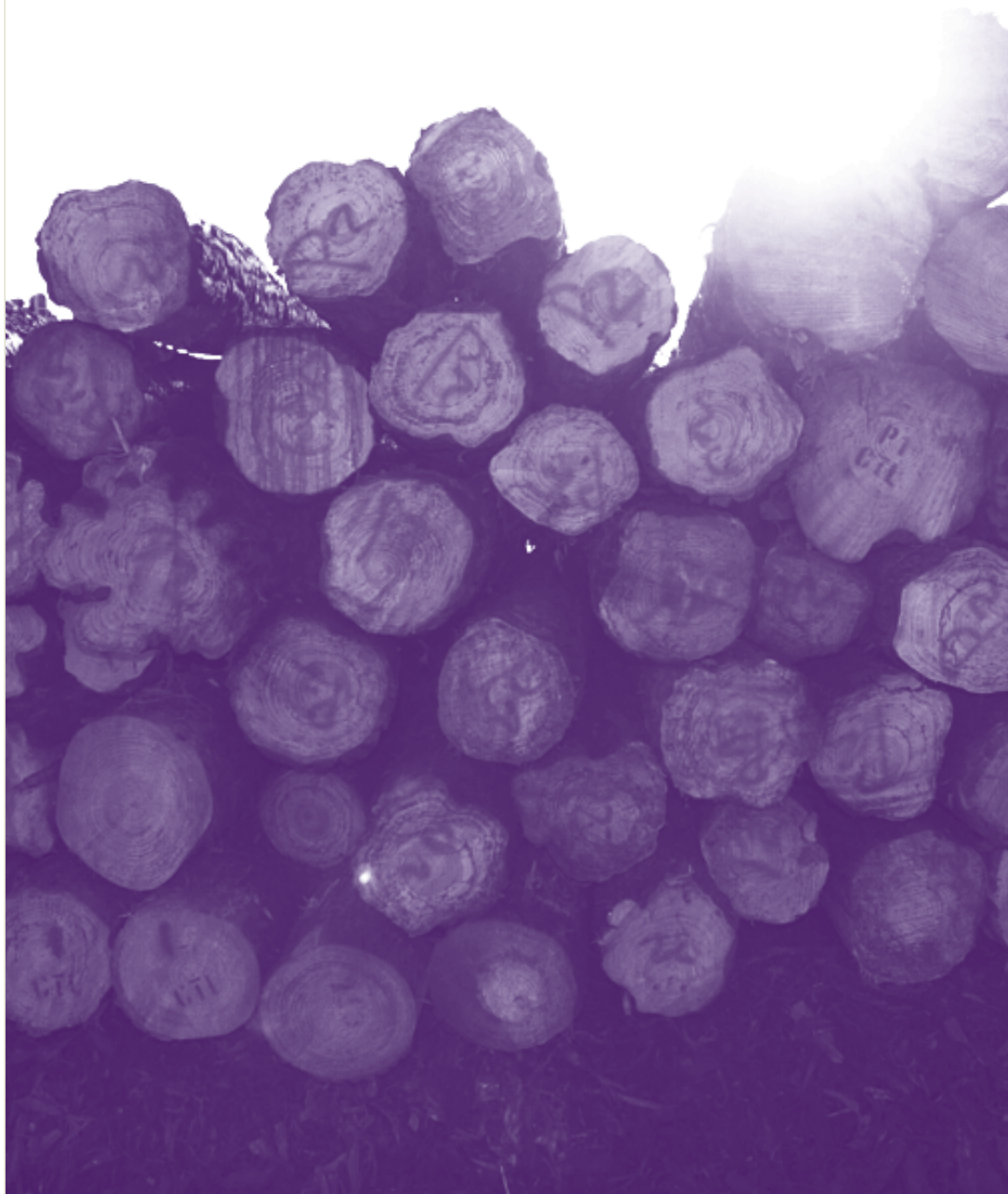




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# INTRODUCTION

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## → 1. INTRODUCTION

A code of practice applies to anyone who has a duty of care in the circumstances described in the code – which may include employers, employees, the self-employed, principals to contracts, owners of buildings or plant, and so on.

An approved code does not necessarily contain the only acceptable ways of achieving the standard required by the Act. But, in most cases, compliance will meet the requirements of the Act, in relation to the subject matter of the code.

An approved code does not have the same legal force as a regulation, and failure to comply with a code of practice is not, of itself, an offence. However, observance of a relevant code of practice may be considered as evidence of good practice in a court.

### 1.1 PURPOSE

This code has been prepared by representatives of the forestry industry and the Ministry of Business, Innovation and Employment (MBIE). The purpose of this code is to provide practical guidance to employers, contractors, employees, and all others engaged in work associated with forestry, on how they can meet their obligations under the Health and Safety in Employment Act 1992 and its associated Regulations.

### 1.2 SCOPE AND APPLICATION

This code is applied to forest operations, including planning, establishment, silviculture, harvesting and transportation of log and log products.

### 1.3 INTERPRETATION

“Shall” means the instruction is mandatory for compliance with the code.

“Should” means that the recommendation be adopted where practicable.





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# GENERAL SAFETY

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## 2. GENERAL SAFETY

### 2.1 EMERGENCIES

- 2.1.1 The employer (or person in charge) shall ensure that emergency procedures are developed for dealing with emergencies that may arise at the work area, and ensure that persons at the work area fully understand them.

The site emergency procedure shall include:

- › work area location (e.g., physical and map / GPS coordinates)
- › communication (means and use)
- › transport (e.g., positioning, availability and readiness)
- › evacuation process
- › emergency equipment (e.g., first aid, rescue equipment, hazardous substance containment equipment).

- 2.1.2 No person shall work alone unless there is an effective means of getting help in an emergency.

### 2.2 FIRST AID

- 2.2.1 Where crew work is taking place, there shall be a minimum of two crew members available onsite with a current first aid certificate.

Persons working alone shall hold a current first aid certificate.

Reference: Ministry of Business, Innovation and Employment guidelines First Aid for Workplaces – A Good Practice Guide.

- 2.2.2 A clearly marked first aid kit shall be kept:

- › in each work vehicle
- › at each work area.

*Note: Vehicle kits can substitute for those required at a work area, provided the vehicle remains at the work area.*

- 2.2.3 All first aid kits shall be kept fully stocked, and stored so as to ensure contents are protected against contamination.
- 2.2.4 Chainsaw operators (except those working on a skid site) shall carry on their person at least two large sterile wound dressings or haemostatic gauze pads protected against contamination by dust, heat, moisture or any other source.

## 2.3 ALL PERSONS IN THE FOREST

- 2.3.1 Every person undertaking forestry work shall be either under documented training and close supervision, or deemed competent.
- 2.3.2 No person shall work at or visit a forest operation while impaired by drugs and/or alcohol.  
Reference: NZFOA Plantation Forestry Code of Practice – Eliminating Drugs & Alcohol from the Workplace.
- 2.3.3 No person shall enter a work area until they have drawn attention to their presence and have been acknowledged.
- 2.3.4 No person shall work in a manner likely to cause harm to themselves or others.
- 2.3.5 No person shall position themselves where there is danger of materials being dislodged and rolling or falling into their work area.
- 2.3.6 No person under the age of 15 shall operate a chainsaw or operate machinery in a forestry operation.  
All persons under the age of 15 working in a forestry operation shall be under documented training and close supervision.
- 2.3.7 Persons who are on a work area for the purpose of on-the-job training or gaining work experience shall be treated as an employee.

## 2.4 PRINCIPALS

- 2.4.1 The principal shall verify that the employer has in place a documented safety management system before commencing operations and shall periodically audit the effectiveness of this system.
- 2.4.2 The documented safety management system shall comply with the requirements of the Act, the Regulations 1995, the Hazardous Substances and New Organisms Act 1996 (HSNO Act), and codes of practice relevant to the operation being undertaken.
- 2.4.3 The principal shall ensure contract agreements clearly incorporate and define responsibilities and duties under:
  - › the Act
  - › the Regulations
  - › the HSNO Act.

2.4.4 The principal shall identify significant hazards specific to each work area which are caused by operations over which they have control and then:

- › supply the employer with documentation on the hazards
- › jointly with the employer, determine measures to control the hazards.

Reference: Appendix 2 Examples of Hazard Information

## 2.5 EMPLOYERS

2.5.1 The employer shall ensure that a competent person is in charge of each operation, who shall supervise and ensure work is supervised and performed in a safe manner.

2.5.2 Employers shall have a documented health and safety system that is effective and meets the requirements of the Act and the Regulations and codes of practice relevant to the operation being undertaken, incorporating the following components as a minimum:

- › A health and safety policy
- › A drug and alcohol policy, including testing
- › Training and supervision
- › Safety meetings
- › Hazard management
- › Auditing and inspection programmes
- › Accident/incident reporting and investigation
- › Emergency procedures
- › HSNO management.

Reference: NZFOA Plantation Forestry Code of Practice – Eliminating Drugs & Alcohol from the Workplace.

## 2.6 EMPLOYEES

2.6.1 No employee shall work in a manner likely to cause harm to themselves or others.

2.6.2 Employees have a right to refuse to undertake work that they consider likely to result in serious harm.

- 2.6.3 Employees have an obligation to attempt to resolve the matter with their employer.

## 2.7 VISITORS

- 2.7.1 Visitors to a work area shall have approval of the person in charge. The person in charge shall ensure that any visitors are:
- › briefed on the relevant hazards, site rules and emergency procedures
  - › designated a safe area
  - › guided so that they are not harmed in the place of work.
- 2.7.2 The signing of a visitors register, on its own, shall not qualify as visitor management.
- 2.7.3 The person in charge of the work area shall stipulate the minimum requirements for protective clothing and equipment for visitors.

## 2.8 HAZARD MANAGEMENT

- 2.8.1 All employees must identify and regularly review hazards in the place of work (existing, new and potential) to determine whether they are “significant hazards” and require further action.
- 2.8.2 Operations that are affected by adverse weather or other events shall be suspended if hazardous conditions cannot be satisfactorily controlled.
- 2.8.3 Where night work is required, the employer shall ensure that the level of illumination does not cause a hazard.

## 2.9 WORKER HEALTH

- 2.9.1 Working hours shall be agreed so as to provide all workers adequate opportunity to manage fatigue, including:
- › regular rest breaks
  - › a meal break
  - › a daily or nightly sleep period
  - › shared driver responsibilities.

Reference: Employment Relations Act 2000 (ERA)

- 2.9.2 The employer shall ensure that employee training includes nutrition and hydration, and the negative impact of stress, fatigue, and substance abuse to the level of an appropriate NZQA unit standard. (For example – Unit Standard 22994 *Demonstrate knowledge of factors that affect the performance of forestry workers*, and any subsequent amendments or previous equivalents.)
- 2.9.3 With the employee's consent, the employer shall ensure employees have health assessments to monitor any effects from exposure to significant health hazards associated with their work area that can cause a chronic condition.
- Note: This shall include a minimum of a baseline health assessment of new employees to be conducted within the first three months of permanent employment and followed up thereafter annually.*

## 2.10 VEHICLES TRANSPORTING WORKERS

- 2.10.1 Vehicles used for conveying workers shall have a valid Warrant of Fitness/Certificate of Fitness and be road worthy.
- 2.10.2 Tools or equipment carried in the passenger compartment of a vehicle carrying workers shall be secured.
- 2.10.3 Each person travelling in a vehicle shall:
- › have a suitable place to sit
  - › sit in a properly secured seat
  - › wear a seatbelt where fitted.

Where a seatbelt is fitted it shall be used when the vehicle is in motion.

## 2.11 DRIVING

- 2.11.1 All drivers shall hold a driver's licence appropriate to the class of vehicle being driven.
- Drivers on roads shall comply with the requirements of the Road Controlling Authority (RCA).
- 2.11.2 Drivers on roads shall abide by all road signage.
- 2.11.3 Vehicles shall be driven at a speed which allows the vehicle to be stopped within half the length of clear road that can be seen in front of the vehicle.



- 2.11.4 All vehicles driven on forest roads shall have the headlights or day running lights on.

## 2.12 SIGNAGE AND TEMPORARY TRAFFIC CONTROL

- 2.12.1 Traffic management including signage shall be used in accordance with:
- › the New Zealand Transport Agency Code of Practice for Temporary Traffic Control or RCA for public roads
  - › Best Practice Guidelines for Temporary Traffic Control for private roads.
- 2.12.2 Formal authorisation shall be obtained and compliance made with any conditions set by the RCA or land owner before any signs warning of operations are placed and work commences.

## 2.13 WORKING AT HEIGHTS

- 2.13.1 Workers in positions where they may fall shall use suitable equipment to prevent them from falling.
- For rules specific to working at heights in silvicultural operations refer to section 10: Establishment and silviculture.

## 2.14 WORKING AROUND 'LIVE' POWER LINES

- 2.14.1 All overhead power lines shall be treated as being electrically live unless formally advised otherwise by a competent person or network representative.
- 2.14.2 Workers, mobile plant, machinery and any equipment operating around live power lines shall comply with the minimum approach distances and other provisions as set out in *Approved Code of Practice for Safety and Health in Tree Work Part 2: Maintenance or removal of trees around power lines 1996*, or any document which supercedes it.
- 2.14.3 Trees within two tree lengths of power lines shall not be felled until a felling plan has been agreed between the asset -/network owner, the forest owner/manager, and the contractor.
- For additional information please refer to the *Guide to Electrical Safety for Forestry and Woodlot Felling and Logging Operations* published by the Electricity Engineers' Association.





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# PERSONAL PROTECTIVE EQUIPMENT

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## 3. PERSONAL PROTECTIVE EQUIPMENT

### 3.1 GENERAL HEALTH

- 3.1.1 The employer shall provide all appropriate personal protective equipment to protect employees from harm due to any hazard at the work area, and shall ensure it is used correctly, inspected, and maintained to fulfil its protective function.

### 3.2 HIGH-VISIBILITY CLOTHING

- 3.2.1 High-visibility clothing shall comply with either:
- › AS/NZS 4602, Class D,D/N,N or 1906, Class 1,2,3
  - › the NZ Forestry Guidelines for High-Visibility Clothing.
- 3.2.2 High-visibility clothing must be worn on the outside of other clothing.

### 3.3 LEG PROTECTION

- 3.3.1 All workers using a chainsaw shall wear protective legwear that complies with either:
- › AS/NZS 4453.3: 1997 Protective clothing for users of hand-held chainsaws, Part 3, Protective Legwear
  - › any other Standard embodying the same or more stringent criteria.
- 3.3.2 Repairs to protective legwear shall not involve the alteration of the protective inner fabric.
- 3.3.3 Where the protective inner fabric has been damaged in any way the legwear shall be discarded and replaced.

### 3.4 SAFETY FOOTWEAR

- 3.4.1 Workers engaged in forest operations shall wear footwear which provides foot and ankle support, traction and protection appropriate to the task they perform.
- Footwear worn in all forest operations shall have protective toe caps complying with either:
- › AS/NZS 2210.1:2009 Safety, protective and occupational footwear Part 1
  - › any other Standard embodying the same or more stringent criteria.

3.4.2 When fitted, laces shall be securely tied at all times.

### 3.5 SAFETY HELMETS

3.5.1 Safety helmets meeting the relevant standard shall be worn at all times when a person is either:

- › operating a quad bike or other ATV
- › involved in a tree felling operation
- › at an active harvesting operation site
- › working on a fire line.

Exception: Mobile plant operators who are fully protected by a certified operator protective structure need not wear helmets when within the confines of the cab.

3.5.2 Safety helmets shall comply with either:

- › AS/NZS 1801:1997 Occupational protective helmets
- › ATV – NZS 8600:2002
- › any other Standard embodying the same or more stringent criteria.

*Note: Helmets worn specifically for fire fighting purposes shall be to the AS/NZ 1801:1997 standard and also have a neck flap (of heat resistant material) and a chin strap when required.*

3.5.3 Safety helmets shall be of high-visibility colours for daytime work.

*Note: "White" is not considered a high-visibility colour. Recognised industry colours are dayglo yellow and orange.*

Exception: White helmets may be worn specifically for:

- › fire fighting purposes
- › riding on ATVs.

3.5.4 Helmets shall be inspected regularly for damage and deterioration.

3.5.5 Helmets shall be replaced:

- › immediately if damaged
- › three years after the issue date (if recorded) or in accordance with the manufacturer's specifications.

3.5.6 Where the issue date is not recorded the helmet shall be replaced three years after the manufacture date.

3.5.7 Hoodies and peak caps shall not be worn under helmets.

### 3.6 HEARING PROTECTION

- 3.6.1 Class 5 hearing protection shall be worn when working with or around chainsaws or forestry machinery.
- 3.6.2 Hearing protectors shall comply with either:
- › AS/NZS 1270:1999 Hearing protectors
  - › any other Standard embodying the same or more stringent criteria.
- 3.6.3 Owners of machinery shall take all practical steps to minimise at source excessive noise levels which may impair the workers hearing.
- 3.6.4 Any clothing or item that interferes with the hearing protection shall not be worn or used while working.
- Exception: Prescription glasses.

### 3.7 EYE PROTECTION

- 3.7.1 Eye protection shall be used for chainsaw use or where there is potential for harm.
- Exception: Where the eye protection itself is likely to cause a greater hazard.
- 3.7.2 Eye protection other than forestry-type mesh visors shall comply with either:
- › AS/NZS 1337:1992 Eye protectors for industrial applications, Amendment 1 Sept 1994: Amendment 2 Oct 1997
  - › any other Standard embodying the same or more stringent criteria.

### 3.8 GLOVES

- 3.8.1 Gloves of the appropriate material shall be worn when there is potential for harm.
- 3.8.2 Gloves shall comply with either:
- › NZS 5812:1982 Industrial protective gloves Reconfirmed:1989
  - › any other Standard embodying the same or more stringent criteria.

### 3.9 **FALL RESTRAINTS FOR SILVICULTURE, HARVESTING AND SEED COLLECTION**

- 3.9.1 Safety harnesses, belts and lanyards used in silviculture, harvesting and seed collection shall comply with either:
- › AS/NZS 1891 Industrial fall-arrest systems and devices, Part 1 Harness and ancillary equipment and Part 3 Fall-arrest devices
  - › any other Standard embodying the same or more stringent criteria.

### 3.10 **RESPIRATORY PROTECTIVE DEVICES**

- 3.10.1 Respiratory protective devices shall be used when there is potential for harm to persons exposed to:
- › dust
  - › gases
  - › fumes
  - › chemicals.
- 3.10.2 Respiratory protective devices shall comply with either:
- › AS/NZS 1715:1994 Selection, use and maintenance of protective respiratory devices and 1716:1994 Respiratory protective devices, Amendment 1 Feb 1996
  - › any other Standard embodying the same or more stringent criteria.

### 3.11 **CHEMICAL HANDLING**

- 3.11.1 Personal protective clothing shall be worn during the handling, mixing and application of chemicals.

The protective clothing to be worn shall comply with the instructions detailed on the manufacturer's Safety Data Sheet (SDS) for the specific substance being used.

Refer to section 9: Hazardous substances.

# 4





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# TOOLS & EQUIPMENT

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## 4. TOOLS AND EQUIPMENT

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### 4.1 GENERAL

- 4.1.1 All tools and equipment shall only be used for their intended purpose, kept in safe working condition and correctly maintained.
- 4.1.2 Defective or damaged tools or equipment shall be repaired or replaced as necessary.
- 4.1.3 When cutting vegetation with hand tools workers shall be separated by either:
  - › a minimum of three metres, or
  - › twice the height of the tallest vegetation being cut.
- 4.1.4 Tools shall be properly secured when transporting.
- 4.1.5 Cutting and digging tools with unprotected blades shall not be carried over the shoulder.
- 4.1.6 When refuelling portable equipment the following shall be adhered to:
  - › No smoking
  - › Stop the motor
  - › Move at least three metres away from the refuelling area before restarting.

### 4.2 CHAINSAWS

- 4.2.1 All chainsaws shall comply with NZS 5819:1982 Chainsaw Safety, reconfirmed 1989.
- 4.2.2 All chainsaws shall be used and maintained in accordance with the manufacturer's specifications.
- 4.2.3 Hand-held chainsaws shall be in safe working order and have all safety features fitted. Safety features include:
  - › a safety mitt
  - › an inertia chain brake
  - › a chain catcher
  - › a rear hand-guard

- › anti-vibration mounts
- › a throttle lock-out
- › an on-off switch
- › a muffler and spark arrestor.

For rules and exemptions specific to top handle saws refer to section 10: Establishment and silviculture.

- 4.2.4 Chainsaw chain shall be maintained in accordance with the manufacturer's specifications.

### Starting

- 4.2.5 Only approved starting methods shall be used. These are:
- › cold start (saw on the ground)
  - › warm start (saw on the ground or step-over method).

When starting a chainsaw the operator must maintain three points of contact with the saw.

Note: For starting/using a chainsaw off the ground, see the *Approved Code of Practice for Safety and Health in Arboriculture*.

### Operation

- 4.2.6 A chainsaw shall not be used if:
- › any safety device is inoperable
  - › the saw chain does not remain stationary when the motor is idling
  - › the saw will not idle correctly
  - › the cutter bar, handles or controls are loose
  - › any parts are damaged, missing or ineffective.
- 4.2.7 No person shall use a chainsaw while standing on stockpiled, stacked or heaped stems or logs.

## 4.3 BRUSHCUTTERS

- 4.3.1 Brushcutters shall have all safety features fitted and in working order including:
- › a throttle lock-out

- › an on-off switch
  - › a muffler and spark arrestor
  - › blade guards.
- 4.3.2 Brushcutter harnesses where fitted shall be worn and adjusted in accordance with the manufacturer's specifications.
- Release mechanisms on the harness shall be in working order.

#### 4.4 **LADDERS**

- 4.4.1 Ladders shall comply with either:
- › AS/NZS 1892.1:1996 Portable ladders
  - › any other Standard embodying the same or more stringent criteria.
- 4.4.2 All ladders shall have their safe working load certified by the manufacturer.
- 4.4.3 Ladders shall be used for their intended operational purpose.
- 4.4.4 Lean-to ladders shall have:
- › a working platform of at least 400mm wide and 200mm deep, with a non-slip surface
  - › a V shape to fit against the tree
  - › pointed stiles (feet) to give increased stability during use.

In addition, lean-to ladders used in ultra-high pruning shall have a chain which can be secured around the tree located at the second or third rung from the top of the ladder.

#### 4.5 **SPRAYING**

- 4.5.1 Manual spraying equipment shall not be used if it is leaking agrichemical onto the worker.

#### 4.6 **PRUNING**

- 4.6.1 Tools such as pruners, jacksaws and epicormic removers shall be carried in a suitable pouch that protects the operator from the blade when the tool is not in use.

#### 4.7 STEPS

- 4.7.1 Steps (used to reach branches beyond reach from the ladder) shall be:
- › designed for that purpose
  - › of sufficient strength and durability to sustainably carry the weight of the worker
  - › attached to the tree with a suitably rated chain if elevating the worker more than three metres off the ground.

#### 4.8 STIRRUPS

- 4.8.1 Stirrups attached to steps shall be of sufficient strength and durability to sustainably carry the weight of the worker and be checked for wear at each work break.





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# WIRE ROPE

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## 5. WIRE ROPE

### 5.1 GENERAL

- 5.1.1 All load-bearing wire rope used in forest harvesting work shall have an independent wire rope core or a wire strand core and comply with either:
- › BS/NZS 302: Part 5:1987 Specification for ropes for hauling purposes
  - › any other Standard embodying the same or more stringent criteria.
- 5.1.2 All load-bearing wire ropes used in forest harvesting work shall be used so that the safe working load of one third of the minimum breaking strength of the rope is not exceeded.
- 5.1.3 Eyes in all ropes and strops shall be either:
- › spliced, with ends tucked in at least three times on one side, and two on the other
  - › swaged with a clamping device installed by a certified rigging supplier of wire rope.
- Exception: Eyes spliced into guylines shall have three tucks both sides.
- 5.1.4 Wire rope shall only be cut with a recognised wire rope cutting device.
- 5.1.5 Eye-to-eye splices shall only be used in strawline application.
- 5.1.6 Wire rope shall be visually inspected regularly and replaced if it shows signs of excessive wear or physical damage. Indicators of excessive wear or damage may include:
- › broken strands
  - › visible crush damage
  - › corrosion which extends into core.



- 5.1.7 Knots in wire rope shall only be used to secure a strawline hook in a strawline connection, and temporary reconnection of broken strawline.
- 5.1.8 Open-sided “C” hooks (ie, no retention mechanism) shall not be used to join lengths of wire rope in any forestry operation.
- 5.1.9 White metal babbitting shall only be performed by a certified rigging supplier of wire rope.





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# MOBILE PLANT

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## 6. MOBILE PLANT

### 6.1 GENERAL

- 6.1.1 The operator's cab of a mobile plant shall comply with either:
  - › the Approved Code of Practice for Operator Protective Structures on Self-Propelled Mechanical Mobile Plant
  - › any subsequent revisions, or other documents which may supersede it.
- 6.1.2 Seatbelt provision shall comply with either:
  - › the Approved Code of Practice for Operator Protective Structures on Self-Propelled Mechanical Mobile Plant
  - › any subsequent revisions, or other documents which may supersede it.
- 6.1.3 Seatbelts shall be worn at all times on all mobile plant.
- 6.1.4 Where there is a provision for doors (hinges, door jams, and latches), doors shall be fitted and closed while the plant is in use.
- 6.1.5 Mobile plant required to work at night shall be equipped with working lights to illuminate the work area.
- 6.1.6 Mobile plant with any structure that may come in contact with overhead power lines shall have a warning sign displayed in the cab.
- 6.1.7 Mobile plant shall be equipped with a braking mechanism capable of holding itself and its load on any slope on which it is operated.
- 6.1.8 All pulleys, shafts, and belts shall be guarded to the minimum original manufacturer's specifications.
- 6.1.9 Where operating noise levels may cause damage to hearing an ear protection warning sign shall be displayed.
- 6.1.10 Vehicles/mobile plant used for forest operations shall display a valid Warrant or Certificate of Fitness if they are to be used on a public road.

## 6.2 USING MOBILE PLANT

- 6.2.1 Mobile plant and machinery shall be operated to the manufacturer's specifications.
- 6.2.2 Where the stability of mobile plant is compromised by slope, weather or ground conditions then a specific hazard management plan shall be developed, implemented, and monitored.
- 6.2.3 Mobile plant shall not be operated on slopes that exceed the maximums in accordance with the manufacturer's specifications (or their agent).
- 6.2.4 Operators of mobile plant shall hold a valid licence with a special type endorsement if operating on a public road.
- 6.2.5 No person shall:
  - › get on or off moving mobile plant
  - › ride on mobile plant not provided with proper seating
  - › ride on a load carried or towed by a mobile plant.
- 6.2.6 Mobile plant cabs shall have all objects secured.
- 6.2.7 When mobile plant is shut down or left unattended with the engine running:
  - › brakes shall be applied where fitted
  - › blades and accessories shall be resting on the ground.
- 6.2.8 The mobile plant operator must remain in the cab if operating closer than two tree lengths of tree felling (for more information refer to section 11.4).
- 6.2.9 Any piece of mobile plant that becomes unsafe, or is suspected to be unsafe, shall be shut down and secured. The mobile plant shall be inspected, repaired and tested before returning to service.
- 6.2.10 Emergency exits shall not be hindered by protective structures.
- 6.2.11 Mobile plant operators shall ensure people are clear before slewing driving or positioning mobile plant. They must also ensure that people are clear before moving any stems, logs or logging debris.
- 6.2.12 Mobile plant shall be stopped, and have the brake applied, before anyone approaches to unhook a drag.

### 6.3 MECHANISED PROCESSORS

- 6.3.1 All harvester heads shall be locked or supported and the cutting unit deactivated when any maintenance is carried out.
- 6.3.2 All mechanised processors shall have as a minimum:
  - › 12.5mm polycarbonate or equivalent strength material in their windscreen
  - › chain shot protection on main saw.

### 6.4 WINCH-ASSISTED HARVESTING ON STEEP SLOPES

- 6.4.1 All mobile plant using the assistance of a wire rope and/or winch shall be specifically designed, tested, demonstrated to be safe, and certified by a Chartered Professional Engineer to be safe when operated on steep slopes.
- 6.4.2 The tension on the wire rope shall be restricted to 33 percent of its breaking load at all times.
- 6.4.3 The maximum operating weight of the mobile plant shall not exceed the rated breaking load of the wire rope.
- 6.4.4 An emergency back-up system shall be incorporated into the operation to ensure the stability of the mobile plant should the winch, wire rope or anchor fail.
- 6.4.5 All winch-assisted mobile plant operations shall have a documented safe working best practice, including as a minimum:
  - › hazard management
  - › machine and wire rope inspection and maintenance routines
  - › operator fatigue plans
  - › work alone procedures
  - › an emergency plan.
- 6.4.6 All winch-assisted mobile plant shall be constructed to provide adequate emergency access and egress points that can be activated internally and externally.

### 6.5 MAINTAINING MOBILE PLANT

- 6.5.1 Mobile plant shall be maintained in a safe operating condition in accordance with the manufacturer's specifications.

- 6.5.2 Alterations to safety-critical structural, mechanical and electrical components of mobile plant outside the manufacturer's specifications shall either be approved by the manufacturer (or their agent) or a Chartered Professional Engineer.
- 6.5.3 Maintenance tasks on mobile plant while the engine is running shall only be completed by a competent or qualified person. Where maintenance is completed by two or more people, one person shall take responsibility.

## 6.6 SHIFTING MOBILE PLANT

- 6.6.1 Loading and unloading mobile plant onto a transporter or other vehicle shall only be done by a competent person.

## 6.7 USING ALL-TERRAIN VEHICLES

- 6.7.1 An approved helmet that meets NZS 8600:2002 shall be worn by all persons operating, or riding as a passenger, while the all-terrain vehicle (ATV) is mobile.

Reference: Guidelines for the Safe Use of Quad Bikes.

- 6.7.2 Passengers shall only be carried when the ATV has provision for this purpose.

Any person operating an ATV shall be competent.

- 6.7.3 Ramps used for the loading of an ATV onto a utility or trailer shall have a fail-proof attachment device and be rated for the entire weight of the ATV and operator.

## 6.8 USING POWER-OPERATED ELEVATING WORK PLATFORMS

- 6.8.1 Power-operated elevating work platforms shall be operated in accordance with the manufacturer's specifications and the Code of Practice for Power-Operated Elevating Work Platforms.

## 6.9 GRAVITY ROLLING

- 6.9.1 The operating weight of the roller used for gravity rolling shall not be greater than half the weight of the tractor.







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# SAFETY AT CONTROLLED FIRES AND BURNOFFS

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## 7. SAFETY AT CONTROLLED FIRES AND BURNOFFS

### 7.1 ATTENDING FIRES

Note – National Rural Fire Authority (NRFA) standards apply.

- 7.1.1 A procedure for managing ground personnel on a fire site shall be established prior to any controlled burn-off or fire fighting activity.
- 7.1.2 All ground personnel shall be signed in and out of the fire site.
- 7.1.3 All personnel involved in fire fighting activities shall either have attained Unit Standard 3285 Protect Personal Safety at Vegetation Fires, or be under the close supervision of a person who has Unit Standard 3285.

All personnel shall receive a safety briefing before entering the fire site.

### 7.2 PERSONAL PROTECTIVE EQUIPMENT

- 7.2.1 The minimum standard of dress on the fire line shall conform to the NRFA standards including:
  - › steel-capped, rubber-soled leather footwear that gives support to the ankles
  - › overalls of fire resistant material, with high-visibility reflector strips, Velcro cuffs for the ankles and neck
  - › safety helmet with chin strap and neck flap when working in the vicinity of aircraft
  - › safety goggles or visor
  - › leather gloves.

### 7.3 PERSONAL SAFETY

- 7.3.1 No person shall leave or be isolated from their crew whilst on the fire line.
- 7.3.2 An effective escape route shall be established and known by all personnel on the fire line.
- 7.3.3 An effective means of communication shall be maintained between all personnel at the fire line at all times.

7.3.4 Persons shall be protected from and exposure minimised to:

- › metabolic heat
- › radiant heat
- › high noise levels
- › smoke inhalation
- › chemical exposure.

7.3.5 All personnel shall maintain awareness of potentially dangerous situations at all times.

Reference the NRFA “pink card” on LACES and Dangerous Situations to Watch Out for.

#### 7.4 **USE OF HAND BURNERS**

7.4.1 When using a hand burner, the operator shall be monitored by another person.

#### 7.5 **VEHICLES AT FIRES**

7.5.1 Vehicles (except fire appliances in use) shall be parked facing the direction of escape and in a position where other vehicles may pass.

7.5.2 The doors, windows and air vents shall be shut and the keys left in the ignition.





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# ROAD AND LANDING CONSTRUCTION AND EARTHWORKS

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## 8. ROAD AND LANDING CONSTRUCTION AND EARTHWORKS

### 8.1 ROADS

- 8.1.1 Roads shall be constructed and maintained to engineering standards appropriate for the intended use.

Refer to the *New Zealand Forest Engineering Manual*, available from the NZ Forest Owners Association.

- 8.1.2 Hazards caused by opposing traffic on one-lane roads shall be addressed through road design and/or traffic control.
- 8.1.3 Roads and tracks used for scheduled access shall be maintained to ensure the safe and unassisted passage of the class/type of vehicle for which its use is intended.
- 8.1.4 The gradient of any road used for transporting logs or wood produce shall not be greater than one in five (11 degrees or 20 percent).

Exception: Roads used only by purpose-built vehicles may be in excess of the stated gradient limit provided:

- › the vehicles are designed to cope with the steeper gradient
- › the operation has a documented site-specific hazard control procedure.

### 8.2 BRIDGES

- 8.2.1 Bridges and their approaches shall be designed and constructed to engineering standards appropriate for the intended use.
- 8.2.2 A bridge inspection programme shall be designed by a suitably experienced Chartered Professional Engineer.

The inspection programme shall include as a minimum inspection interval and criteria, and the names of the person(s) qualified to conduct the inspections.

- 8.2.3 Bridges with a load carrying capacity of less than Class 1 (7.1 tonne per axle) shall have their capacity signposted.

### 8.3 LANDINGS

- 8.3.1 All landings shall be planned and constructed to allow safe operations.
- 8.3.2 All logging operations shall be planned to allow for:
- › stems, stockpiles and log stacks
  - › safe areas
  - › vehicle parking
  - › fuel and chemical storage
  - › load-out areas
  - › where applicable, the yarder to be safely positioned, with at least two thirds of the stem/drag to be landed safely and securely
  - › truck turn around.

### 8.4 EARTHWORKS

- 8.4.1 Where earthworks such as service tracking, fire breaking or road formation is carried out, all hazardous trees shall have been made safe prior to the completion of this operation including:
- › hung-up trees
  - › leaning trees
  - › trees whose roots have been disturbed.
- 8.4.2 Over-burden, cast material, rocks or stumps shall not be placed or left where they may create a hazard to subsequent operations.







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# HAZARDOUS SUBSTANCES

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## 9. HAZARDOUS SUBSTANCES

### 9.1 GENERAL

- 9.1.1 The transport, use and storage of all hazardous substances shall be in accordance with the HSNO Act and its Regulations, NZS 8409:2004 Management of Agrichemicals and New Zealand Transport Agency (NZTA) requirements.
- 9.1.2 Hazardous substances stored on site shall be:
  - › stored safely and in accordance with the regulations
  - › located where an accidental spill cannot enter a waterway
  - › separate from equipment maintenance areas.
- 9.1.3 Safety Data Sheets (SDS) shall be available on site for all hazardous substances being used or stored. The SDS shall be kept where it can be accessed by all staff within 10 minutes of needing it.
- 9.1.4 All containers shall be labelled so that there is no doubt as to their contents.
- 9.1.5 A hazardous substance inventory shall be maintained for all substances on site.

### 9.2 AGRICHEMICALS

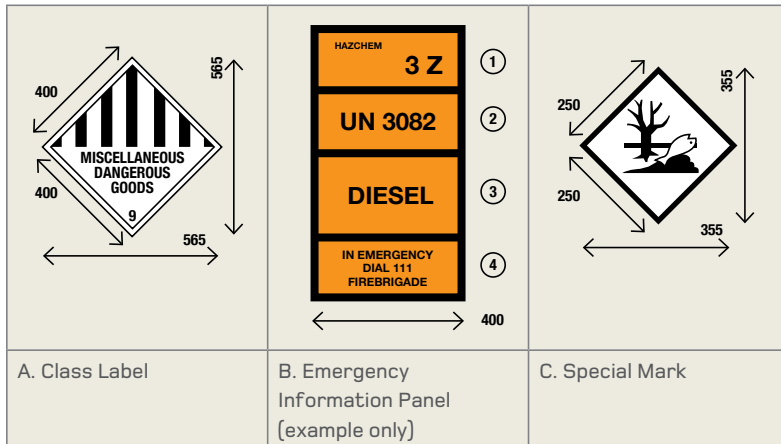
- 9.2.1 The person in control of chemical application operations shall hold a current suitable qualification such as “Growsafe” and, if required, hold an “approved handler” test certificate.
- 9.2.2 Where the substance in use is classed as an acutely toxic substance, the approved handler shall be present on site at all times during the operation.
- 9.2.3 Workers handling agrichemicals shall be instructed and supervised by the person in control in the identification, application, and disposal of substances being used.
- 9.2.4 All persons shall work in a position that avoids inhaling spray drift during the application of agrichemicals.

### 9.3 FUEL AND OIL TRANSPORT

**Bulk transport of diesel and petrol (tank capacity greater than 450 litres)**

- 9.3.1 All tanks shall be placarded as specified in diagram 1 and 2.

Diagram 1: Labels for fuel tanks



- 9.3.2 Trailer tanks and tank wagons shall be placarded on the rear and both sides of the tank. A Class label shall be placed on the front of the tank.

Diagram 2: Emergency Information Panel for diesel and petrol

|                      | DIESEL (high flash point)             | PETROL                      |
|----------------------|---------------------------------------|-----------------------------|
| Class Label          | Misc Dangerous Goods Diamond          | Flammable (Class 3) Diamond |
| Haz Chem Code        | 3Z                                    | 3YE                         |
| UN Number            | 3082                                  | 1203                        |
| Proper Shipping Name | DIESEL                                | PETROL                      |
| Emergency Info       | IN AN EMERGENCY DIAL 111 FIRE BRIGADE |                             |
| Special Mark         | Ecotoxic (Class 9) diamond            |                             |

- 9.3.3 Stationary tanks, e.g., sled tanks, shall be placarded on opposite sides, or the front and rear.
- 9.3.4 Utility vehicle slip-on tanks (capacity greater than 450 litres) shall be placarded on opposite sides, or the front and rear.

### Additional transporting requirements

- 9.3.5 Utility vehicle slip-on tanks less than 450 litres shall be placarded with one label set in a manner that allows the hazardous nature of the contents to be clearly recognisable.
- The labels shall be as large as practicable.
- 9.3.6 When transporting more than 2,000 litres of diesel or more than 250 litres of petrol, emergency response information shall be kept in the drivers cab in an accessible location.
- 9.3.7 When transporting more than 250 litres of petrol, the drivers licence shall have a “D” endorsement.
- 9.3.8 When carrying flammable liquids in passenger vehicles, the containers shall be secured in a properly constructed compartment which is:
- › separate from the passenger compartment
  - › accessible only from the exterior
  - › vented to the exterior.
- 9.3.9 Trailer tanks shall have a current Warrant of Fitness and registration.

### 9.4 FUEL AND OIL STORAGE AND USE

- 9.4.1 All tank pipes, seals, and fittings shall be leak-free and regularly inspected.
- All tanks shall have a functioning venting system and a method to measure the quantity of fuel remaining.
- 9.4.2 A stationary tank with a total volume greater than 5,000 litres shall have a Stationary Container Test Certificate. This certificate shall be renewed annually.
- 9.4.3 All stationary tanks with a volume greater than 1,000 litres shall have a secondary containment capable of containing 110 percent of the tank capacity.
- Note: a tank that is double skinned is regarded as secondary containment.
- 9.4.4 Where secondary containment is exposed to the weather, the containment device shall have drainage fitting that allows rainwater to be released. Contaminated water must be passed through absorbent materials specifically designed for hydrocarbon capture.

## Petrol – additional requirements

- 9.4.5 An “approved handler” shall be available where more than 100 litres of petrol is stored.
- 9.4.6 Secondary containment is required where volume stored is greater than 1,000 litres.
- 9.4.7 Only approved containers meeting the following standards shall be used:
  - › AS/NZS 2009:2001
  - › ASTM F-852-99e1.

These containers shall:

- › have an appropriate sealing cap
- › be made of metal or a durable plastic that will not react with the fuel
- › be clearly labelled or marked to identify the fuel and the potential hazards, e.g., petrol – highly flammable.

Containers greater than 25 litres in capacity must meet the above requirements and be marked with the UN packing symbol.

- 9.4.8 Petrol shall be stored at least three metres away from aerosol cans, LPG, oxygen and acetylene.
- 9.4.9 Documentation (certificates and registers) shall be available on request of a warranted Hazardous Substances and New Organisms Enforcement Officer or health and safety inspector. Where doubt exists, as to the origin or condition of any tank or container an inspector shall require a test certificate, issued by an Environmental Protection Authority approved Test Certifier.

## 9.5 EMERGENCY RESPONSE

- 9.5.1 At least:
  - › two 9kg foam or class “B” fire extinguishers shall be available where flammable liquids are on site
  - › one 9kg foam or class “B” fire extinguisher shall be available on the towing vehicle where trailers are being used.

## 9.6 EXPLOSIVES

- 9.6.1 Transportation, storage and handling of explosives shall be in accordance with the HSNO Act and its Regulations and New Zealand Transport Agency (NZTA) requirements.
- 9.6.2 Any person handling, using or transporting Class 1 substances (explosives) shall hold both:
  - › an Approved handler test certificate for class 1 explosives
  - › a Controlled Substances Licence for explosives.

# 10



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# ESTABLISHMENT AND SILVICULTURE

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## 10. ESTABLISHMENT AND SILVICULTURE

### 10.1 GENERAL

- 10.1.1 Bags, backpacks and harnesses shall be ergonomically designed.
- 10.1.2 Tools used for establishment and silviculture shall be purpose designed to reduce the potential for injury.
- 10.1.3 Cutting tools and spades with unprotected blades shall not be carried over the shoulder.

### 10.2 PLANTING

- 10.2.1 Tree planters shall avoid working directly beneath or above other workers on steep terrain where there is a danger from rolling objects.

### 10.3 MANUAL FERTILISING

- 10.3.1 The employer shall ensure that the potential hazards and safe handling procedures of the fertiliser in accordance with the manufacturer's specifications are clearly understood and followed by employees.

For additional information refer to the HSNO Act and its Regulations.

### 10.4 PRUNING

- 10.4.1 When carrying out pruning from a ladder, the operator shall wear a fall restraint device once they reach three metres (the height of the operator's feet from the ground) unless they have been deemed competent.

For information on the process of deeming competence for ladder pruning refer to the FITEC Best Practice Guidelines for Silvicultural Pruning.

- 10.4.2 Operators shall wear a fall restraint device at all times when pruning with their feet 4.5 metres or more above the ground.
- 10.4.3 Operators shall wear a fall restraint device with an adjustable lanyard when undertaking ultra-high pruning.



The lanyard shall:

- › be of steel or wire core construction
- › be fastened around the tree when the operator reaches the working height.

10.4.4 There shall be a person available on site to affect an aerial rescue during all ultra-high pruning operations.

10.4.5 All top handle saws shall have a cutter bar guard fitted.

10.4.6 Only top handle saws shall be used when ladder pruning with a chainsaw.

## 10.5 THINNING TO WASTE

10.5.1 A minimum of two people are required on site at all times during a thinning to waste operation.

## 10.6 SEED COLLECTION

10.6.1 Workers shall not climb without audible contact with another person who is able to affect an aerial rescue procedure if required.

10.6.2 When a climber's feet are three metres or greater above the ground they shall use either:

- › a climbing rope
- › a harness and lanyard
- › a safety line.

10.6.3 The climbing rope, slings or safety line shall be securely attached to at least one anchor point at all times.

10.6.4 The anchor point shall be sufficiently strong to take the full weight of the climber and their equipment.

10.6.5 The safety line shall be secured in such a way that a vertical fall of over 500mm is not possible.

For further information refer to the *Approved Code of Practice for Safety and Health in Arboriculture*.





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# TREE FELLING

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## 11. TREE FELLING

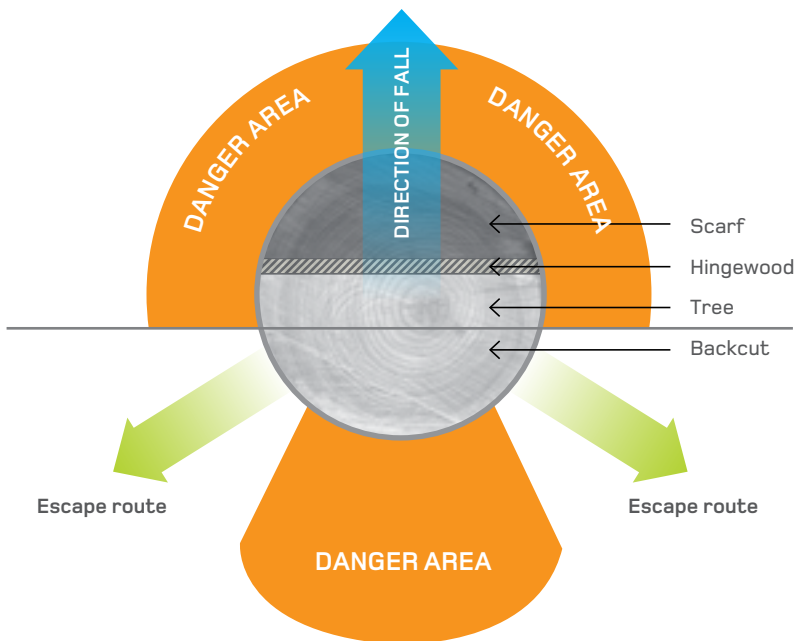
### 11.1 GENERAL

- 11.1.1 Clearfell tree fallers shall be in constant radio contact with another person.
- 11.1.2 A person shall always be available on site to monitor and assist with any tree felling activity if required.

### 11.2 ESCAPE ROUTES

- 11.2.1 For each tree being felled an escape route shall be cleared on the safest side.

*Diagram 3: Escape route positioning*



### 11.3 FELLING AIDS

11.3.1 When felling trees greater than 20 centimetres in stump diameter, the faller shall carry:

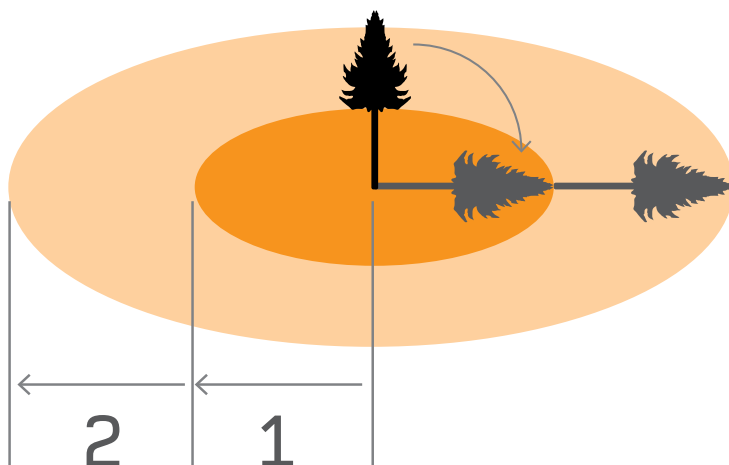
- › four wedges suitable for the size of tree being felled
- › a suitable tool for driving wedges.

Exception: For thinning to waste trees greater than 20 centimetres in stump diameter the faller shall carry a minimum of two wedges for the size of tree being felled.

11.3.2 Metal on metal contact during wedge use shall be avoided.

### 11.4 SAFETY ZONES – TWO TREE LENGTH RULE

*Diagram 4: The two tree length rule*



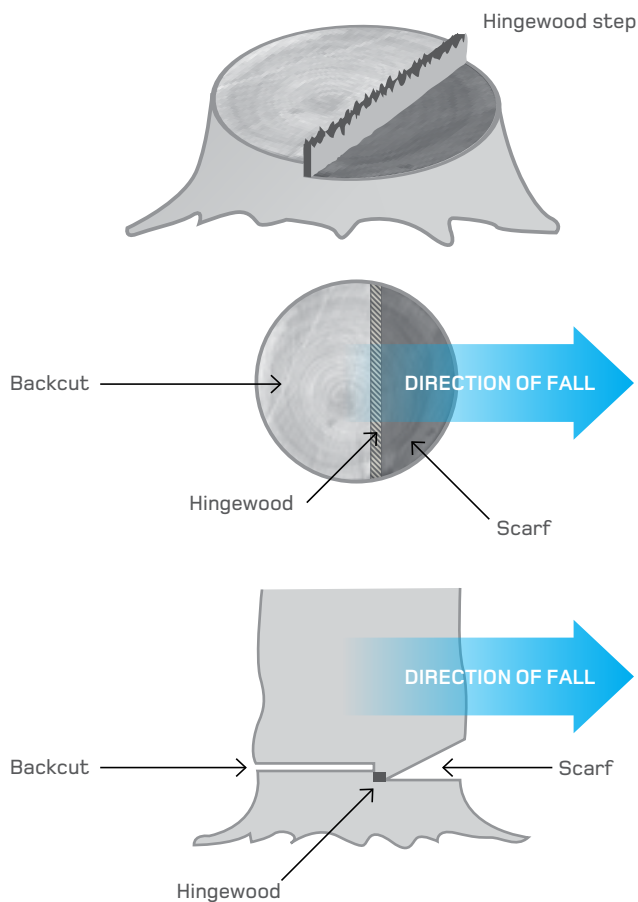
- 11.4.1 All fallers and harvester operators shall ensure that, within two tree lengths of the tree being felled, there are no:
- › mobile plant without appropriate protective structures
  - › working ropes – exception: cable yarder assisted felling or ropes that have been lowered to the ground and are not operating
  - › live powerlines – exception: where a felling plan has been authorised and agreed (for further information refer to section 2.14)
  - › other operations.
- 11.4.2 Mobile plant with the appropriate protective structures may work closer than two tree lengths but not closer than one tree length of felling operations unless they are directly assisting in the tree felling operation.
- 11.4.3 No person shall be closer than two tree lengths to a tree being felled, unless that person is:
- › the faller
  - › assisting the faller
  - › supervising
  - › training others or being trained
  - › observing or auditing.
- Any person within two tree lengths of a tree being felled shall be under the direct control of the faller.
- Exception: The faller is under the direct control of a trainer.
- 11.4.4 Aside from the tree faller no person shall operate a chainsaw within two tree lengths of a tree being felled.
- Buddy cutting is not permitted.
- 11.4.5 No tree shall be felled within two tree lengths of any road, railway or public access until the provisions of section 2.12: Signage and temporary traffic control have been complied with.

### 11.5 FELLING CUTS

11.5.1 All trees with a stump diameter greater than 20 centimetres shall be felled using a scarf, backcut and hinge wood.

11.5.2 The scarf and backcut of the tree being felled shall be completed before starting on the next tree.

*Diagram 5: Basic tree felling cuts*



- 11.5.3 Alternative cuts are permissible provided the faller is competent in those cuts.

## 11.6 HUNG-UP AND CUT-UP TREES

- 11.6.1 A hung-up or cut-up tree shall be brought to the ground immediately or the hazard managed until such time as it can be brought to the ground.

If the cut-up tree is to be brought down, refer to section 11.7: Tree driving.

- 11.6.2 Where a cut-up tree has sat back and needs to be recut, the scarf and backcut shall be a minimum of the tree diameter above the initial backcut.

## 11.7 TREE DRIVING

- 11.7.1 Tree driving shall only be used to fell trees that either:

- › are leaning against the intended direction of fall and cannot be safely felled using wedges
- › present additional hazards that could dislodge as the tree begins to fall, e.g., trees with a broken top
- › are hung-up or cut-up.

Refer to rule 11.6.1.

- 11.7.2 Tree driving shall not exceed one onto two trees.

- 11.7.3 When tree driving, the following minimum requirements shall be met.

- 11.7.4 The faller shall notify the person available to them that they intend to undertake a tree drive.

- › The faller shall notify the person available to them that the drive has been completed successfully.
- › If a one-onto-two tree drive is unsuccessful, falling shall cease until an observer is present to help plan management of that hazard.

- 11.7.5 A holding wedge shall be inserted in the backcut of each tree to be driven.

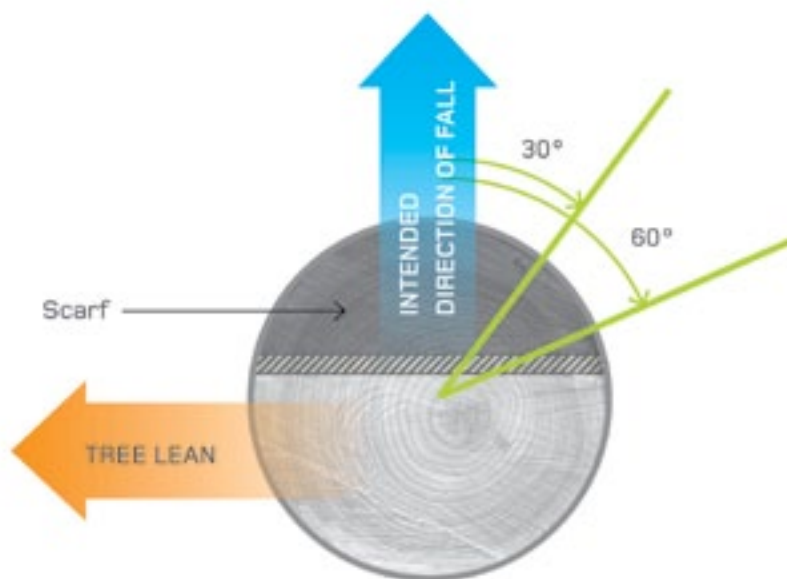
- 11.7.6 A minimum of two wedges shall be available to insert in the backcut of the driver tree.



## 11.8 MOBILE PLANT ASSISTED FELLING – GROUND BASED

- 11.8.1 The mobile plant shall have:
- › sufficient capacity and traction
  - › rigging of sufficient length and strength (if used) to assist the tree in the intended direction of fall.
- 11.8.2 The tree faller shall not work directly under any raised blade or mobile plant accessory.
- 11.8.3 When pushing trees over, the attachment used to make contact with the tree shall have the facility to stop the tree from sliding sideways.
- 11.8.4 When pulling trees over, the winch rope shall be attached at least two metres above the felling cuts.
- 11.8.5 The winching mobile plant shall be positioned between 30 and 60 degrees from the intended direction of fall on the side opposite the lean. (Refer to diagram 6)

*Diagram 6: Winch machine positioning*



- 11.8.6 The faller shall insert a wedge in the backcut of any mobile plant assisted tree.
- 11.8.7 The faller shall move to an agreed safe position before signalling for the tree to be pushed or pulled over.
- 11.8.8 No tree shall be felled in a direction or manner that will cause “shock loading” on the pulling rope.

#### **11.9 MOBILE PLANT ASSISTED FELLING – CABLE HARVESTING**

- 11.9.1 Cable harvesting assisted felling shall be planned to ensure:
  - › only one tree at a time shall be felled using this method
  - › an effective communication system is established between the tree faller and the yarder operator
  - › trees shall be directionally felled to avoid falling over working ropes
  - › no tree shall be felled in a way that will cause “shock loading” on the pulling rope.
- 11.9.2 When winching trees over, the winch rope shall be attached to the tree as high as practicable above the felling cuts.

#### **11.10 TREE JACKS**

- 11.10.1 There shall be two competent persons engaged on operations where tree jacks are used to fell trees against their lean.
- 11.10.2 Only tree jacks designed for tree felling shall be used.

#### **11.11 WIND THROW**

- 11.11.1 In areas of wind-thrown salvage, machine assisted felling shall be the first choice of felling mechanism.
- 11.11.2 Any manual faller required to work in wind throw shall have their competency assessed against NZQA Unit Standard 1270.
- 11.11.3 No person shall work directly under wind-wrenched trees.

#### **11.12 TRIMMING**

- 11.12.1 Workers shall not trim or head off at the felling face while standing on a tree which is suspended above the ground by more than 1.5 metres (ground level to the underside of the tree).







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# BREAKING OUT

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## 12. BREAKING OUT

### 12.1 GROUND-BASED EXTRACTION

- 12.1.1 All ground-based extraction operations shall have an effective and established communication system.
- 12.1.2 All workers in the operation shall be familiar with the communication system used in their workplace.
- 12.1.3 One designated person shall be responsible for sending signals to the extraction machine operator except in the case of an emergency situation.
- 12.1.4 Strops shall be attached within 1.5 metres (if practicable) from the butt end of a stem or log.
- Exception: When head pulling, strops may be attached further from the end of the stem or log.
- 12.1.5 The breaker-out shall not stand between the extraction machine and the stems or logs when directing the extraction machine into position on a downslope.
- 12.1.6 The extraction machine operator shall be able to see all breaker-outs before positioning the extraction machine for break-out.
- 12.1.7 The person signalling for break-out shall advise the extraction machine operator of any stem or log that has the potential to swing or upend during extraction.
- 12.1.8 Before signalling the extraction machine operator to break-out, the breaker-out(s) shall retreat to a safe position that is clear of:
- › any swinging or upending log or stem
  - › obstacles that may restrict movement or obscure vision
  - › material likely to be dislodged during extraction
  - › overhead hazards that may fall into the work area
  - › any rope bight.
- 12.1.9 The extraction machine operator shall be seated inside the cab with the seatbelt fastened when operating the winch.
- Exception: Radio-controlled winches equipped with a failsafe device.

- 12.1.10 The extraction machine operator shall not activate any machine function until the breaker-out is in a safe position and has given the appropriate signal.
- 12.1.11 Before any strops are attached, the extraction machine operator shall ensure that the machine is:
- › in neutral with the park brake applied
  - › stable with the blade lowered to the ground.

## 12.2 CABLE HARVESTING

### Signals

- 12.2.1 All cable harvesting operations shall use an effective and established communication system.
- 12.2.2 All workers involved in the extraction operation shall be familiar with the communication system used in their workplace.
- 12.2.3 An audible or verbal signal shall precede each major rope movement.
- 12.2.4 Responsibility for sending signals to the yarder operator shall rest with one designated person unless there is an emergency situation.
- 12.2.5 The following toots shall be used to signal the movement of ropes, carriage or rigging in all cable harvesting operations:
- › One continuous long – emergency
  - › Long, short – inhaul, ahead on main
  - › Short, short – outhaul, ahead on tail
  - › Short – stop any rope
  - › Short, short, short – feed slack, lower rigging (slack on main).
- 12.2.6 These rope movements may be signalled verbally or by the following toots:
- › Drag is clear – long, short (during inhaul)
  - › Slack tail – short short, pause, short, short, short
  - › Hold tail or clamp carriage and go ahead on main – short, short, long
  - › Raise skyline – short, short, short, short, short
  - › Lower skyline – short, short, short, short
  - › Send strawline – long, short, short, long
  - › Drag approaching landing – long.
- 12.2.7 Yarding shall cease if the communication system cannot be clearly heard.

## Breaking out

- 12.2.8 One person shall be designated the head breaker-out and shall be on the break-out face and responsible for:
- › controlling the break-out operation
  - › ensuring the safety of breaker-outs.
- 12.2.9 Head breaker-out shall be competent to the requirements of, and hold, NZQA Unit Standard 1258.
- 12.2.10 The head breaker-out shall watch the lines and drag until either:
- › the drag is out of sight
  - › the yarder operator takes over control
  - › another competent breaker-out is assigned to monitor the lines and drag.
- 12.2.11 During outhaul all breaker-outs shall be a minimum of 15 metres away from any moving rope.
- 12.2.12 Breaker-outs shall not be positioned underneath:
- › any moving rope
  - › a mechanical slack-pulling carriage feeding slack
  - › any carriage or butt rigging being raised or lowered during break-out
  - › a tensioned skyline during inhaul or outhaul
  - › operating ropes being shifted by a mobile tailhold.
- 12.2.13 Breaker-outs shall not enter the hook-on area until:
- › the “stop” signal has been given
  - › the carriage or rigging has stopped moving
  - › swinging strops can be safely controlled.
- 12.2.14 Where practicable, butt-pulled stems shall have their strops attached within three metres of the butt end of the stem.
- 12.2.15 Where practicable, head-pulled stems shall have their strops attached within five metres from the top end of the stem.
- 12.2.16 Any drag with a long stropped or gut-hooked stem shall be either:
- › immediately communicated to the yarder operator so others can be warned of the hazard
  - › stopped after break-out and the stem(s) re-hooked.
- 12.2.17 No stems or logs shall be cleared from the chute area unless the breaker-outs are in a safe position.



- 12.2.18 Service brakes shall be applied when the breaker-outs are under the rigging.
- 12.2.19 All breaker-outs shall be facing the drag at the safe retreat position before the go-ahead signal is given.
- 12.2.20 If a drag is fouled, tension shall be released in the mainrope, tailrope and slack-pulling rope, (if appropriate), before any attempt is made to release strops or cut any stem with a chainsaw.

### Safe retreat position

- 12.2.21 Before harvesting commences the principal and contractor shall agree on a system to determine the safe retreat position for each block and / or setting.
- 12.2.22 The contractor / employer shall have a documented process to determine and identify the safe retreat position for each line or day's work, taking into account:
- › any swinging or upending log or stem
  - › mean tree height
  - › obstacles that may restrict movement or obscure vision
  - › material likely to be dislodged during extraction
  - › overhead hazards that may fall into the work area
  - › any rope bight.

If the above process is not in place then the following default process shall apply.

The safe retreat distance shall be a horizontal distance (not slope distance) a minimum of 1.5 tree lengths based on the mean tree height for the block measured at right angles to the line of extraction.

The safe retreat distance shall be clearly marked with flags or other visible markers.

- 12.2.23 The contractor / employer and head breaker-out shall ensure the process is understood, agreed and carried out by the extraction crew.
- 12.2.24 Before signalling the yarder operator to break-out, the breaker-out(s) shall retreat to the predetermined safe position.
- 12.2.25 Where a tailspar is used, the breaker-outs must maintain a distance of at least two times the height of the tailspar while ropes are moving.

### Line shifts

- 12.2.26 During any line-shift operation people shall be clear of any rope movement and / or in the designated safe area.

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# WORK ON LANDINGS

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## 13. WORK ON LANDINGS

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### 13.1 GENERAL

13.1.1 Landing work shall only proceed when:

- › all stems can be landed safely
- › there are designated safe working zones for each landing activity
- › there are designated log storage areas with a specified log capacity
- › there is a smoko/rest area
- › there are separate safe areas for equipment maintenance and fuel storage
- › there is adequate area for parking of vehicles
- › there is a designated log truck turn-around
- › the yarder is safely positioned, with at least two thirds of the stem/drag able to be landed safely and securely (where applicable).

13.1.2 All hazardous trees within reach of the landing shall be removed before operations begin. Particular attention shall be given to trees that are:

- › leaning towards the landing
- › on the prevailing wind side
- › disturbed during landing construction.

13.1.3 The placement of debris around the edge of the landing shall not create a hazard to current and future operations.

13.1.4 Slash (such as limbs or tops) on the landing shall not impede movement or safety of workers or machinery.

13.1.5 Workers shall stay clear of:

- › working machinery
- › swinging or suspended stems and logs
- › trucks/trailers being loaded (refer to section 16: Loading).

13.1.6 Prior to moving into another work area the worker shall communicate that movement with affected machine operators.

### 13.2 MANUAL PROCESSING

- 13.2.1 When a stem is being cut to length no other worker shall be working on that stem at the same time.
- 13.2.2 No person shall work within two metres of any other person using a chainsaw.  
Exception: Where a person gets his saw stuck and needs to be cut out.
- 13.2.3 The loader operator shall ensure there is sufficient space between stems or logs to allow safe log making and manual processing.
- 13.2.4 No person shall use a chainsaw while standing on stockpiled, stacked or heaped stems or logs.

### 13.3 MOBILE PLANT ON LANDINGS

- 13.3.1 Mobile plant working in its designated work area shall have right of way.
- 13.3.2 Prior to moving into another work area the mobile plant operator shall communicate that movement with affected workers.
- 13.3.3 An operating gap of one metre shall be maintained between the maximum tail swing of any mobile plant working on the landing and any obstruction.
- 13.3.4 No load / log shall be swung above or within reach of any person.
- 13.3.5 Loading and unloading operations shall only be performed by plant with adequate lifting capacity.
- 13.3.6 Forked loaders shall:
  - › centre loads and support stems/logs with both forks
  - › be fitted with a log clamp to secure logs during lifting.

1.4



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# CABLE HARVESTING

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## 14. CABLE HARVESTING

### 14.1 GENERAL

14.1.1 A competent person shall check daily that guyline anchors and rigging are secure when under load.

If the working ropes have been subjected to shock loading or failure, guyline anchors and rigging shall be inspected before operations recommence.

14.1.2 Guyline anchor and rigging checks shall be documented.

14.1.3 Cable harvesting installations shall be rigged in accordance with the manufacturer's specifications or industry-specified standards or guidelines.

14.1.4 The configuration used to anchor any operating rope shall be at least equal in strength to the operating rope as follows.

- › Block strops shall be the same strength as the ropes they are holding if the shackle is through both eyes.
- › Block strops shall be equal the strength of the operating rope if they are choked to the stump.
- › Shackles shall have a safe working load (SWL) equivalent to the total strength of the block strop set up.

14.1.5 All static ropes that are rigged across any road shall be clearly flagged.

If overhead ropes are less than 6 metres above the road surface (when slack) they shall be signposted to warn of clearance restrictions.

14.1.6 Traffic control measures shall be in place for any operating rope that is rigged across a road that may be in use.

14.1.7 The yarder shall be regularly inspected to ensure it remains stable.

14.1.8 For downhill yarding, there shall be adequate flat chute area to land stems or logs without endangering the yarder operator or other workers.



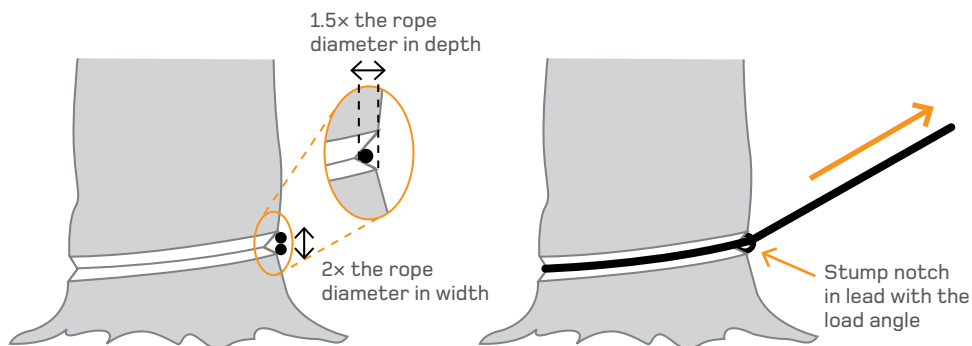
## 14.2 GUYLINES

- 14.2.1 Guylines shall be at least equal in strength to the strongest operating ropes, unless otherwise stated in accordance with the manufacturer's specifications.
- 14.2.2 Guylines shall not be spliced together. They shall be connected to extensions or anchors by any of the following methods.
- › Spliced or swaged eyes with shackle connectors, all splices shall be tucked at least three times on each side.
  - › White metal babbitted or swaged ferrules with double-ended chokers between extensions.

## 14.3 ANCHORS

- 14.3.1 Standing trees shall not be used as anchor points in any part of a cable harvesting operation.
- 14.3.2 Guyline anchor locations shall be selected to meet the yarder setup in accordance with the manufacturer's specifications.
- 14.3.3 All stump anchors shall be notched to ensure the attached rope is retained around the anchor. Notches shall be:
- › a suitable depth and shape
  - › as close to the ground as practicable
  - › cut on the same angle as the Guyline under tension
  - › a minimum of 30 centimetres of solid wood above the notch.

*Diagram 7: Stump anchor notching*



- 14.3.4 Skylines, Guylines and tailrope blocks shall be anchored to any of the following:
- › suitable-sized stumps or combinations of stumps capable of resisting the forces applied to them
  - › deadman anchors, of sufficient size and buried to an adequate depth
  - › suitable mobile plant anchors that are of sufficient size and correctly positioned and braced
  - › correctly installed artificial anchors providing sufficient strength.
- 14.3.5 The strop used to connect any rope to a deadman anchor shall:
- › pass around the buried deadman and have both ends protruding from the ground
  - › be positioned to share the load equally between the two ends
  - › be of equal or greater strength (or diameter) to the rope that is being attached
  - › have the body of the shackle through the eyes and have an effective method of securing the pin or nut.

#### 14.4 RIGGING GEAR

- 14.4.1 All shackles shall be made of high-tensile steel or alloy steel and fitted with high-tensile steel pins.
- 14.4.2 All hanging shackles shall have their pins secured by a molly grommet or split pin.
- 14.4.3 Guyline shackles shall have their pins on the yarder side of the connection.
- 14.4.4 Hammerlocks may be used in place of shackles provided their safe working load is equivalent to or greater than the shackle they are replacing.
- 14.4.5 Shackles, rigging screws and tumbuckles used in rigging or Guylines shall:
- › be tested and marked with their safe working load
  - › have a breaking strength at least equal to the rope to which they are rigged.

14.4.6 Yarder towers shall be fitted with safety equipment which confines the fall of the operating ropes and damaged tackle in the event of failure of the lead block, blocks or securing tackle.

14.4.7 In fall block systems a purpose-made doddle shall be attached to the rider block or carriage.

The doddle shall be maintained to ensure it is retained in the rigging at all times.

14.4.8 Tower maintenance shall be undertaken when the tower is down.

14.4.9 If climbing of the tower is required above three metres, the climber shall:

- › wear an approved fall restraint harness
- › use a free fall arrest system
- › use a rope with a minimum rating of no less than 22 kilo Newton (Kn)
- › have a competent person and suitable equipment available to affect a rescue.

## 14.5 SKYLINES

14.5.1 Skyline extensions and connecting devices shall be at least equal in strength to the skyline to which they are attached.

## 14.6 MOBILE ANCHORS

14.6.1 The operator of the mobile anchor shall:

- › have direct communication with the yarder operator during a mobile plant or lineshift
- › be in charge of all rope movements during a lineshift.

14.6.2 No person shall be on a mobile anchor when stems are being extracted or ropes tightlined.

14.6.3 Mobile anchors shall be securely positioned before extraction commences. To ensure anchor security:

- › skyline and tailrope blocks shall be connected to suitably engineered attachment points on the mobile plant
- › mobile plant shall be correctly positioned with appropriate implement positioning to ensure mobile plant stability

- › a handbrake or locking device shall be applied to prevent unplanned mobile plant movement
  - › attachment points shall be periodically inspected by a competent person to confirm integrity.
- 14.6.4 Mobile anchor operators shall stand in a safe position to observe the tightlining of operating ropes before extraction commences.

#### 14.7 TAILSPARS

- 14.7.1 Trees used for elevated support shall be topped and guylines shall be used to secure the spar.
- 14.7.2 Only hanging block systems shall be used where rope lift is required.
- 14.7.3 At least two competent persons shall be present when tree topping or rigging operations are taking place.
- The second person shall have all the necessary climbing equipment and be able to climb the tailspar and perform a rescue if required.

#### 14.8 YARDER OPERATION

- 14.8.1 All yarder towers shall have an identification plate permanently attached to its base. The plate shall include:
- › tower model and serial number (if relevant)
  - › maximum and minimum inclination at which the tower is designed to operate
  - › maximum breaking strength and size of all operating ropes (except strawline) for which the tower is designed
  - › number, breaking strength and size of Guylines and any other ropes or lines required.
- 14.8.2 All yarder towers shall be inspected annually by a competent person and tagged as certified. Information on the certification plate shall include:
- › owner of the mobile plant
  - › make, model, serial number
  - › inspection expiry
  - › certifier number.

In the case of a tower tip-over, reinspection is required before operations recommence.

- 14.8.3 A Chartered Professional Engineer shall ensure modifications and structural repairs:
- › do not reduce the original safety factor of the equipment
  - › are recorded on an identification plate showing the name and address of the CPEng and the date of modification.
- 14.8.4 All yarders shall have certified Falling Object Protective Structures (FOPS) and Operator Protective Structures (OPS) on their cabs.
- 14.8.5 Skyline brakes shall be set to slip at a pre-set tension to avoid exceeding the safe working load of the skyline.

#### 14.9 POLEMAN

- 14.9.1 The poleman shall remain in the designated safe area whenever working ropes are operating.
- 14.9.2 The yarder operator shall signal the poleman when it is safe to move in to unhook, and shall stop all rope movement until the poleman has returned to the designated safe area.
- 14.9.3 The stability of the drag / stems shall be checked before unhooking is commenced.
- 14.9.4 No person shall work under a suspended stem/log or go in to unhook stems/logs before the drag is landed.
- 14.9.5 No person shall stand more than one metre off the ground when unhooking stems or logs.

# 15



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# HELICOPTER LOGGING

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## 15. HELICOPTER LOGGING

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### HELICOPTER OPERATIONS

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- 15.1.1 All helicopter operations shall conform to the rules set by the Civil Aviation Authority.
- 15.1.2 Loose items that may be blown by the helicopter rotor wash shall be secured.
- 15.1.3 No items may be thrown into or around an operating helicopter.
- 15.1.4 Instructions of the pilot and helicopter crew shall be followed at all times.
- 15.1.5 Helicopters shall only be approached from a position forward of the helicopter where the pilot can see you.
- 15.1.6 All items and equipment carried to and from an operating helicopter shall be carried below waist height.
- 15.1.7 A safety briefing session shall be held between the pilot, controllers, and workers before operations commence.

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### RULES FOR HELICOPTER LOGGING

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#### 15.2 GENERAL

- 15.2.1 The pilot and ground crew shall make themselves aware of the harvest plan prior to commencing the operation.
- 15.2.2 Prior to commencement of a harvesting operation, all parties involved shall hold a site-specific briefing session to determine strategies for safe operations.
- 15.2.3 At least one level area shall be available to facilitate an emergency landing by the logging helicopter.
- 15.2.4 Private or public roads affected by helicopter flight paths shall be closed during the operation. Flagmen and appropriate warning signs shall be erected as required by the RCA and Civil Aviation Authority (CAA).



- 15.2.5 Machinery shall be positioned in such a way that it is clear of incoming stems or aircraft.
- 15.2.6 Stems shall only be approached after they have been completely landed and, if necessary, stabilised.
- 15.2.7 When deemed necessary by the pilot in command, a NOTAM (notices to airmen) shall be issued to warn other aircraft of the helicopter logging operation.

### 15.3 RIGGING

- 15.3.1 A longline of sufficient length shall be used according to the topography and the height of any tree above which the helicopter must hover.

Longlines and any attached protective sheath/cover shall be made of non-elastic material.
- 15.3.2 Shackle pins shall have an appropriate locking device to prevent accidental dislodgement of the pin.
- 15.3.3 Longline and hooks shall be inspected daily by the pilot in command or helicopter maintenance personnel. These checks shall be documented.

Any sheath or covering of the longline shall be able to be removed for inspection purposes.
- 15.3.4 Purchase date and safe working loads of ropes, blocks and shackles shall be recorded in a register.

### 15.4 INTEGRATION OF GROUND AND FLIGHT ACTIVITIES

- 15.4.1 Ground crew personnel shall watch from the designated safe area:
  - › the helicopter entering the drop zone and exiting the landing area
  - › load arrival and the hook or grapple at all times while stems are being landed.
- 15.4.2 All employees shall be able to recognise how rotor wash will affect the work environment.
- 15.4.3 No person is permitted to be on any load supported or suspended from the helicopter.

## 15.5 COMMUNICATION

- 15.5.1 Voice commands shall be agreed between the pilot and ground crew prior to the operation commencing.
- 15.5.2 Hookers and chasers shall continually monitor the radio frequency being used by the pilot of the helicopter with which they are working.
- 15.5.3 Pilot identification shall be included in any command given to direct flight movement.
- 15.5.4 In addition to two-way radio communication, an effective system of visual communication signals (hand signals) shall be known.
- 15.5.5 Radio frequencies between air and ground crews shall be coordinated and selected to minimise interference.
- 15.5.6 Log loaders used on the landing shall have radio contact with the helicopter.

## 15.6 BREAKING OUT (HOOKERS)

- 15.6.1 Hookers shall be familiar with:
  - › correct load rigging processes
  - › the helicopter lifting capability
  - › helicopter fuel duration and length of cycles
  - › use of support aircraft: proper loading and unloading of people and equipment (if applicable)
  - › aircraft flight paths turn and cycle times
  - › the helicopter radio frequency
  - › identifying the location of the log load to the pilot (using the “clocking” method)
  - › the operation of the remote helicopter hook and what to do if the hook fails to operate properly.
- 15.6.2 Hookers shall always watch the hook or load when the helicopter is approaching.
- 15.6.3 Hookers shall stand a minimum of 1.5 log lengths, based on the longest log in the drag, away from the load before giving the “all clear” signal.

- 15.6.4 The pilot shall receive the “all clear” from the hooker before lifting.
  - 15.6.5 The hooker shall identify type of load to the pilot, ie, single, multiple or tag line position.
  - 15.6.6 Where chokers are used they shall be attached securely to logs to ensure that:
    - › logs do not slip out of the choker
    - › chokers are positioned sufficiently far away from the point of balance of the load so that it is suspended vertically when lifted.
  - 15.6.7 Hookers shall clearly identify choker/strop drop points for the pilot and coordinate them with ground activity.
  - 15.6.8 The hooker shall allow the hook to contact the ground to dissipate any static charge (electricity) before touching the hook or strop.
  - 15.6.9 Hookers shall notify the pilot when hang-ups or other problems are anticipated or occur during the lift.
  - 15.6.10 When sending out a turn, the hooker shall immediately alert the pilot if any slack chokers or unsecured stems come up with the turn. Landing and skid crew shall also be notified.
  - 15.6.11 When chokers/strops cannot be released safely they shall be left in place and removed when they can be released safely.
- 15.7 ABORT CREWS**
- 15.7.1 Abort crews shall have at least one radio-equipped person.
  - 15.7.2 Abort crews shall, on completion of cutting the aborted log, retreat to a safe distance outside the rotor wash and advise the pilot of position prior to attempting a second lift.
  - 15.7.3 Once cutting of the aborted log is complete, the abort crew shall:
    - › leave the operational area
    - › advise the logging helicopter pilot of progress whilst leaving the area
    - › give the pilot a final confirmation once they have cleared the operational area.
- 15.8 VISITORS**
- 15.8.1 Visitors to a work area shall have prior approval of the person in charge that shall ensure they either:
    - › are supervised so that they are not harmed in the place of work
    - › remain in a designated visitor area.

# 1.6



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# LOADING AND UNLOADING

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## 16. LOADING AND UNLOADING

For additional information on rules relating to loading and unloading at yards and mills (outside the forest) refer to the Log Transport Safety Council (LTSC) Loading/Unloading standards.

### 16.1 RESPONSIBILITIES

Both the truck driver and the loader operator have a responsibility to ensure the load is contained and secured in such a manner that it cannot fall from the vehicle.

16.1.1 The loader operator shall be responsible for:

- › controlling the loading/unloading operation
- › ensuring the safety of truck driver while loading/unloading
- › the placement of logs within bolsters in accordance with the driver's instruction
- › temporarily ceasing loading/unloading if the truck driver's location is unknown or unsafe.

16.1.2 The truck driver shall be responsible for:

- › ensuring the load is stowed in accordance with industry standards
- › following any instruction given by the loader operator regarding his/her safety whilst loading/unloading on a harvesting site
- › advising the loader operator if intending to use an alternative safe area, e.g., crew shelter.

### 16.2 TRAILER LIFTING

16.2.1 No person shall be under a raised trailer.

16.2.2 When turning the drawbar, trailers shall be suspended as close to the ground as practicable.

16.2.3 Trailer lifting shall be completed by machinery that is suitable for that purpose. The accepted methods of lifting the trailer are:

- › placing the load ring onto a hook on the lifting machine
- › grabbing the load ring or chain
- › non-chain alternatives such as cross beams that can be grabbed by the grapple or forklift pockets built into the trailer.

### 16.3 LOADING OPERATION

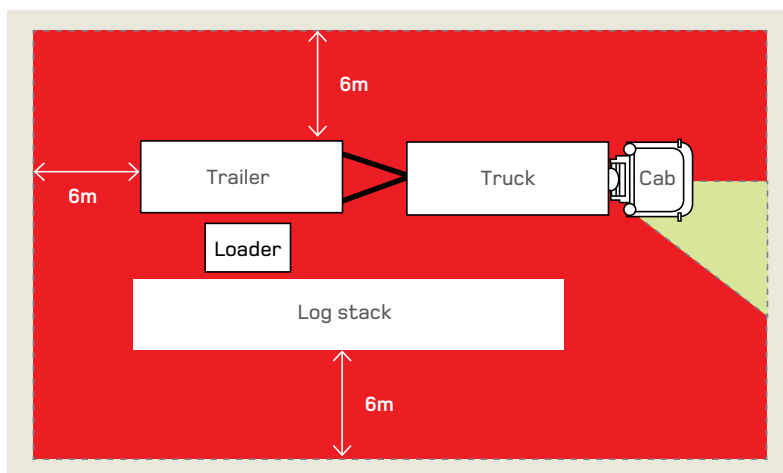
16.3.1 All truck drivers (and if applicable passengers) shall remain in a designated safe area during loading. Designated safe areas include:

- › inside the truck cab
- › outside the cab forward of the cab guard and on the same side of the truck as the loader
- › an alternative safe area, e.g., crew shelter.

Furthermore, it is recommended that the truck driver stand six metres forward of the cab guard during loading of the truck packet.

### 16.4 LOADING ZONE

*Diagram 8: Loading zone*



16.4.1 The loading zone is deemed to be a minimum of six metres around the truck and trailer. This zone may need to be larger during loading of long logs.

16.4.2 No loading activities shall occur while any person is on the ground within the loading (red) zone (Refer to diagram 8).

Exception: The truck driver may stand at the rear stanchion of the truck to observe and direct the loader operator in the setting of bed logs on the trailer bolster and to make adjustments to the final

load position on the trailer as long as no logs are being suspended by the loader. Before loading recommences, the truck driver shall return to a designated safe area.

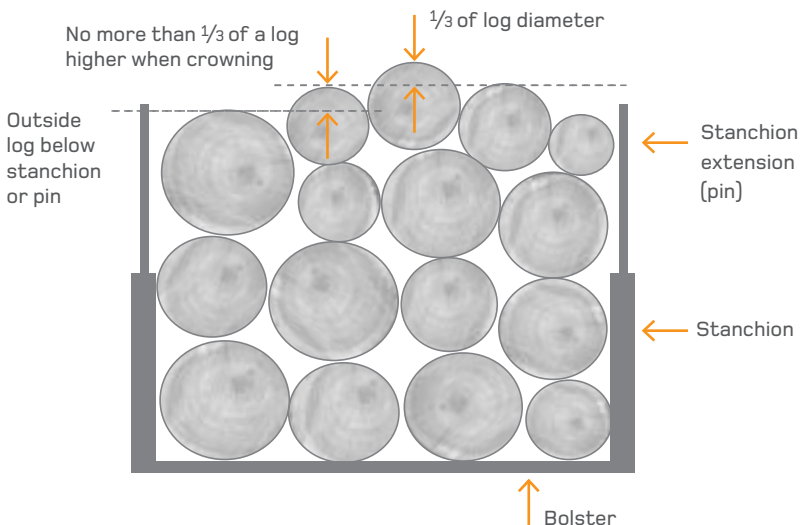
- 16.4.3 If any person needs to go into the loading zone, they may only do so with the loader operator's approval. Loading shall temporarily cease (grapple/forks on the ground), and only recommence when the person has moved out of the loading zone.
- 16.4.4 At no time is the loader to move into or swing logs over, or into, the truck driver safe area.
- 16.4.5 Chaining up shall only occur after all loading at the site is completed.

## 16.5 LOAD PLACEMENT

### 16.5.1 General:

- › No part of the outside logs of the load shall be loaded above the top of the stanchions or the stanchion extensions.
- › Logs loaded in the middle of the load shall not have more than one-third of the diameter of the log above the adjacent logs (see diagram 9).
- › The top of the load shall be rounded so that the load-securing device will contact as many logs as possible.

*Diagram 9: Maximum permitted log heights with crowning*





#### 16.5.2 Overhang:

Logs shall be loaded so that lower and outside logs overhang the bolster and stanchion edges by at least 300mm.

Exceptions: The minimum overhang may be reduced to 150mm provided three chains are used, ie, two bolster chains and one belly chain.

#### 16.5.3 Logs which are shorter than the distance between the bolsters and stanchions shall be nestled between outer rows.

Exception: Short logs may be placed on top of the load, provided the log end not supported by a stanchion is secured with a tensioned load restraint of equal strength in addition to other restraints required by this Code of Practice.

### 16.6 SELF-LOADING TRUCKS

- 16.6.1 Self-loading trucks shall be fitted and used with outriggers and stabilisers in accordance with the manufacturer's specifications.
- 16.6.2 In the event of malfunction, means shall be provided to prevent a free fall of the boom.
- 16.6.3 Each set of controls for the operation of a self-loading unit shall be of the 'detent' operation type.
- 16.6.4 Drivers of self-loading trucks who are working alone shall have an effective means of getting help in an emergency.

### 16.7 UNLOADING

- 16.7.1 Stanchion pins and extensions shall not be removed/lowered until the load has been lowered to a point where no part of any log is above the height of the top of the stanchion.





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# TRANSPORT

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## 17. TRANSPORT

For additional information on rules relating to transport refer to the Log Transport Safety Council (LTSC) standards.

### 17.1 VEHICLES

17.1.1 Vehicles transporting forest produce on a public road shall:

- › be subject to all aspect of the Transport Act 1962 and associated transport legislation
- › have a valid Certificate of Fitness (COF).

17.1.2 Off-highway cartage vehicles shall hold a current Certificate of Road Worthiness as outlined in the Log Transport Safety Council (LTSC) standards.

17.1.3 Vehicles used to carry logs shall be:

- › rated as to the maximum load the unit shall carry (this information shall be available to on request)
- › operated within the manufacturer's rated gross vehicle mass and gross combination mass
- › operated within accordance of the manufacturer's specifications.

### 17.2 CAB GUARDS

17.2.1 Trucks used for the transportation of stems, logs and roundwood shall be fitted with an industry standard cab protection frame between the cab and forward end of the load.

### 17.3 SAWDUST, WOODCHIPS AND WASTE PRODUCTS

17.3.1 Loose bulk loads carted in an off-highway situation shall be adequately covered by a tarpaulin or net as appropriate where there is a significant risk of material falling from a vehicle.

#### 17.4 SECURING LOADS ON LOGGING TRANSPORT

- 17.4.1 All loads shall be loaded and secured so that no portion of the load can become dislodged or fall from the vehicle.
- 17.4.2 At log landings, it shall be permissible to move the vehicle up to 100 metres to a safe area away from the landing before securing the load.

#### 17.5 PREPARING FOR UNLOADING

- 17.5.1 Restraining devices shall not be released until the load is ready to be removed.

Exception: Log transport may move slowly (20kph) to the unloading area providing:

- › a designated unchaining area has been allocated
- › there is no access way by members of the public.

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# APPENDICES

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## → APPENDIX 1: DEFINITIONS

■ **Access way:** a road or track within the forest, which may be used by vehicles, motorbikes, pushbikes, horses or walkers.

■ **Adequately trained:** a person who can demonstrate the skill and knowledge derived from experience and/or training for the type of work in which the person is employed and the approved code the person is required to work under.

■ **All practicable steps:** what is reasonably able to be done in the circumstances, taking into account:

- › the severity of any injury or harm to health that may occur
- › the degree of risk or probability of that injury or harm occurring
- › how much is known about the hazard and the ways of eliminating, reducing or
- › controlling it
- › the availability, effectiveness and cost of the possible safeguards.

■ **All-terrain vehicle (ATV):** a special purpose vehicle that is designed for off-road use. The reference to ATV in this document includes quad bikes, three-wheelers and other purpose built small off road utility vehicles.

■ **Alternative felling cuts:** accepted cuts that may be used to fell trees that cannot be safely felled using a conventional scarf and backcut technique. Examples of alternative felling cuts include the Humboldt scarf, the Swedfor scarf, the quarter cut backcut, the split level backcut and the bore and release backcut.

■ **Approved container:** in relation to the storage of petrol up to 25 litres, a container must comply with AS/NZS 2906:2001, ASTM F-852-99e1 or be a previously approved container (ie, with a LAB registration number marked on the container).

■ **Approved handler:** a person who has a test certificate that certifies that the person meets the competency requirements for approved handlers specified in the Hazardous Substances and New Organisms (Personnel Qualifications) Regulations 2001.

■ **Best Practice Guideline (BPG):** a publication that sets out what industry recognises as operational good practice. The BPGs will give

guidance on how to meet the requirements of an approved code of practice.

■ **Buddy cutting:** two or more chainsaw operators working together to fell trees within two tree lengths of each other.

■ **Bulk:** in relation to the transport of dangerous goods, bulk is defined as a liquid, in a container, in an undivided quantity exceeding 450 litres.

■ **Chronic condition:** a health condition that is caused by exposure to a hazard over an extended period of time. Examples include hearing loss, skin cancer (melanoma), occupational overuse syndrome (OOS).

■ **Chute:** the area on a hauler landing where stems are landed during extraction.

■ **Close supervision:** direct and constant one-on-one supervision.

■ **Competency:** a measure of a person's ability to consistently demonstrate the skill required to carry out a job. Competency shall be supported by detailed documented evidence showing:

- › the task being carried out
- › the situation the task was being carried out in
- › the person who deemed the worker competent and their qualifications and/or experience
- › how long the competency assessment took and when it was carried out
- › what visual demonstrations were observed
- › the process of assessment used to deem the person competent.

■ **Competent person:** a person who can consistently demonstrate the skill and knowledge derived from experience and/or training for the type of work in which the person is employed and the approved code the person is required to work under.

■ **Contour cutting:** angling of the backcut during tree felling to follow the contour of the land rather than having a horizontal backcut. This eliminates the need to chamfer cut the stump after tree is felled.

■ **Contractor:** a person engaged by a person (otherwise than as an employee) to do any work for gain or reward.

■ **Crew work:** work carried out by a group of workers (more than two) to complete a forestry activity.



- **Cut-up tree:** a tree that has been scarfed and backcut but has not fallen.
- **Danger triangle:** the area below the chute in a cable logging operation.
- **dB (A):** a measurement used to compare sound levels.
- **Debarked logs:** logs that have been debarked through a rotary debarker. This does not include logs processed through a mechanised harvesting head.
- **Detent valve:** a valve that allows the controls to return to a neutral position once the control has been released or in the event of hydraulic or mechanical failure.
- **Doddel:** a purpose-made block or stop installed between the fall block and rider block on a standing skyline system.
- **Dump:** refer to skid.
- **Elevated support:** a topped tree (spar) used to elevate a block (at anchor end) or support jack (intermediate support) to increase skyline deflection or clearance. The spar must be topped and guyed.
- **Employee:** a person employed by any other person to do any work for hire or reward; and in relation to any employer, means an employee of the employer.
- **Employer:** a person who or that employs any other person to do any work for hire or reward; and in relation to any employee, means an employer of the employee.
- **Experience:** competency for an activity that has been gained through an extended period of time doing that activity.
- **Fall restraint device:** a device used to prevent a person falling to the ground while working at height. This is usually made up of a harness and lanyard system.
- **Felling aids:** devices that can be used during the felling of a tree to assist the faller in getting the tree to fall in the desired direction. Common felling aids include wedges (and hammer) and felling levers.
- **Forest operation:** includes activities associated with land preparation, establishment, silviculture, harvesting and transportation.
- **Forestry work:** includes any work in connection with establishment, silviculture, logging, transportation, tree work and solid wood processing whether for commercial purposes or not, and includes:

- › felling of trees for land clearing for any purpose by mechanical or manual means
  - › commercial harvesting of firewood including stockpiling, stacking, transportation and handling by manual or mechanical means
  - › work in log storage, transfer or processing areas including handling and loading of logs in wharf areas to the ship's side
  - › construction and maintenance of private roads, service and access tracks, bridges, log skids, tramways, railways and the shifting of any plant for the purpose of forestry operations.
- **Gut-hooked:** a stem that has had a strop attached towards the middle of the stem which could cause the stem to swing or end-for-end during extraction.
- **High flashpoint diesel:** diesel with a flashpoint over 600°C. This is classified as an environmentally hazardous substance for transport due to its toxicity to the aquatic environment.
- **Hung-up tree:** a cut tree caught in or lodged against another preventing it from falling to the ground.
- **Impairment:** a reduction of a person's ability to think or act as the result of substance abuse, mental fatigue and traumatic shock.
- **Industry qualifications:** unit standards registered with the NZ Qualifications Authority where assessment has been carried out and competence verified.
- **Inspector:** a health and safety inspector for the time being appointed under Section 29(1) of the Act.
- **Key-holed:** a stump that has had a hole cut through it for the purpose of attaching a Guyline or block strop.
- **Landing:** refer to skid.
- **Lanyard:** a rope or metal wire attached to the fall restraint device to attach the person to the tree.
- **Loaded rope:** a rope which is under tension. This may include a pushing, pulling or a shock loading action.
- **Loading zone:** the area around a truck and/or trailer and the loading

mobile plant. The loading zone is defined as a minimum of six metres from the truck, trailer, log stacks or loading mobile plant.

■ **Logging:** includes:

- › tree felling by manual or mechanical means
- › preparation and extraction of logs to an area for processing and/or loading out.

■ **Machinery or mobile plant:** as defined in the Act – an engine, motor or other appliance that provides mechanical energy derived from compressed air, the combustion of fuel, electricity, gas, gaseous products, steam, water, wind or any other source.

■ **Major rope movement:** movement of mainrope, tailrope or skyline rope as part of the inhaul or outhaul phases of an extraction cycle.

■ **Mobile plant:** any self-propelled mechanical mobile plant designed to move under its own motive power with an operator at its controls and includes wheel and crawler tractors, excavators, skidders, graders and loaders.

■ **New Zealand Standard:** means a standard approved by the Standards Association of New Zealand or any other standard accepted by the association, in force for the time being or from time to time and available from the Standards Association of New Zealand.

■ **NZTA:** the New Zealand Transport Agency.

■ **Observer:** a competent person that can assist a faller when felling difficult trees, felling in hazardous areas or when carrying out an unplanned multiple tree drive.

■ **Off-highway vehicle:** a vehicle operating on an off-highway network where private roads allow travel through forest estates without having to use a public road.

■ **Operating ropes:** ropes which move to do the work, e.g., mainrope, tailrope, tagline, dropline, strawline and skyline in the live skyline situation.

■ **Person who controls the place of work:** in relation to a place of work, a person who is:

- › the owner, lessee, sub-lessee, occupier, or person in possession, of the place or any part of it; or the owner, lessee, sub-lessee, or bailee, of any plant in the place.

■ **Placard:** means any of the following attached to the outside of vehicles, tanks, freight containers or containers for bulk quantities of dangerous goods.

- › An enlarged version of a label representing a class or division of dangerous goods.
- › A black and orange horizontally striped label displaying either the word “dangerous” or “hazardous”.
- › An emergency information panel.

■ **Place of work:** a place where any person is to work, or is working, for gain or reward.

■ **Principal:** as defined in the Act, a person who or that engages any person (otherwise than an employee) to do any work for gain or reward.

■ **Quad bike:** see all-terrain vehicle.

■ **Qualified:** a person who holds an industry recognised NZQA qualification for the type of work in which they are employed.

■ **Recognised organisation:** an organisation that has been accredited with NZQA to train and assess in a specified field or skill or knowledge.

■ **Road Controlling Authority:** the Road Controlling Authority (RCA) is the organisation that manages the roads. For public roads this means the New Zealand Transport Agency or a territorial authority. For private roads this may mean a forest owner.

■ **Safe area:** a pre-designated area on the landing that is free of mobile plant movement and other hazards.

■ **Safe retreat distance:** the distance from any rope, rigging or attached stems a breaker-out shall retreat to during inhaul, outhaul or breaking out phases of an extraction operation.

■ **Serious harm:**

- › Any of the following conditions that amounts to or results in permanent loss of bodily function, or temporary severe loss of bodily function: respiratory disease, noiseinduced hearing loss, neurological disease, cancer, dermatological disease, communicable disease, musculoskeletal disease, illness caused by exposure to infected material, decompression sickness, poisoning, vision impairment, chemical or hotmetal burn of eye, penetrating wound of eye, bone fracture, laceration, crushing.

- › Amputation of body part.
- › Burns requiring referral to a specialist medical practitioner or specialist outpatient clinic.
- › Loss of consciousness from lack of oxygen.
- › Loss of consciousness, or acute illness requiring treatment by a medical practitioner, from absorption, inhalation, or ingestion, of any substance.
- › Any harm that causes the person harmed to be hospitalised for a period of 48 hours or more commencing within 7 days of the harm's occurrence.

■ **Silviculture:** includes the establishment and tending of tree crops and includes land preparation, planting, blanking, releasing from ground or air, protection, pruning, thinning, seed collection, nursery work, use of agricultural chemicals, controlled burning and fire fighting.

■ **Skid:** a selected or prepared area to which logs are extracted, and where they may be sorted, processed, stockpiled and/or loaded.

■ **Sole worker:** a worker who is working on their own and does not have visual or voice contact with another worker.

■ **Square:** refer to skid.

■ **Stacked, stockpiled or heaped:** logs or stems that are stacked more than one log or stem high or laid out on bearers for the purpose of trimming or cross cutting.

■ **Standard:** a Standard approved by Standards New Zealand or any other Standard embodying the same or more stringent criteria as the Standard cited. An item may be verified by a qualified person such as a Chartered Professional Engineer that the criteria of the Standard is met by that item. Should any Standard quoted at the time of publication be updated or superseded, the latest version shall take precedence.

■ **Standing rigging:** ropes and guys which are fixed and thus do not move during the operating cycle.

■ **Static rope:** A rope that is fixed between two points and holds and maintains a fixed or static load.

■ **Stationary tank:** a storage tank that is not fixed to a chassis and can be lifted and relocated.

■ **Subcontractor:** a person engaged (otherwise as an employee) by any contractor or subcontractor to do, for gain or reward, any work the contractor or subcontractors has been engaged (as a contractor or subcontractor) to do.

■ **Swaged ferrule:** a metal sleeve or collar that had been pressed onto the end of a rope.

■ **Swaged wire rope:** a wire rope that has had the wires and strands hammered or pressed together to form a denser and stronger rope.

■ **Temporary severe loss:** where:

- › pain or health impairment is significantly more than discomfort
- › pain or health impairment prevents use of part of the body
- › the condition is likely to be temporary.

■ **Tightlining:** tightening the mainrope and tailrope by braking one against the other.

■ **Transportation:** includes cartage of all types of forest produce such as all log types, chips, bark, mulch, firewood, sawdust and any waste products other than on a public road, street or railway system and includes the use of helicopters, rafts and barges for such purpose.

■ **Tree:** a woody perennial plant generally with a single erect stem or trunk bearing lateral branches and includes a bush, shrub or scrub.

■ **Tree work:** any work on trees outside a forest situation and includes willow layering and any other work with trees in catchment or soil erosion operations, maintenance of shelter belts for horticulture, agriculture or farming, maintenance of trees in the vicinity of overhead power lines and arboriculture which is the management and care of trees in the general community.

■ **Ultra-high pruning:** pruning above the 'normal' high pruning height of six to 6.5 metres.

■ **Unattended mobile plant:** a mobile plant where the operator has exited the cab or seat.

■ **Under training:** a person who is not competent or qualified to carry out the task unsupervised and is working towards an industry recognised NZQA qualification under the guidance and training of a competent person.

■ **Valid first aid certificate:** a first aid certificate that has been achieved or refreshed in the past two years.

■ **Vehicle readiness:** the requirement for having a vehicle available for use in the case of an emergency. Readiness includes having the vehicle positioned so it can exit the site, pointing towards the exit, fuelled, road worthy, and with keys accessible.

■ **Visitor:** a person who comes into the work area but is not involved in carrying out work related to the forestry activity in that work area.

■ **White metal babbitting:** a process of securing a purpose-built ferrule to the end of a rope using melted metal.

■ **Wind throw:** trees that have been blown down by the wind. They may have the stem snapped off or the root plate may still be attached.

■ **Wind-wrenched trees:** trees that have been blown over by the wind but are still standing. The stems are typically severely bent.

■ **Work:** any activity carried out for gain or reward.

■ **Work area:** the area in which work is taking place. This may include:

- › the immediate area, eg, a landing
- › a wider area, e.g., the forest.

■ **Working alone:** working in a situation where the worker does not have visual or voice contact with another worker.

■ **Work positioning device:** a belt-type device designed to secure the user in a work position. This may not prevent a fall.

**Working rope:** a rope which is an active part of a hauling or pulling system. This includes Guylines, mainrope, tailrope, skyline, tagline, dropline and strawline.



## APPENDIX 2: EXAMPLES OF HAZARD INFORMATION

| Item | Description                                                                                                                                                                                                                                                |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Prescription area boundaries                                                                                                                                                                                                                               |
| 2    | Routes and tracks: <ul style="list-style-type: none"><li>• access routes</li><li>• existing and possible tracks and skids</li><li>• emergency evacuation routes</li><li>• public access areas, rivers/streams used by fisherman, etc</li></ul>             |
| 3    | Terrain factors: <ul style="list-style-type: none"><li>• slope ranges for different extraction equipment</li><li>• ground roughness</li><li>• vegetation hindrance</li><li>• rock outcrops</li><li>• tomos and other significant terrain hazards</li></ul> |
| 4    | Tree factors: <ul style="list-style-type: none"><li>• species</li><li>• average piece size and range</li><li>• presence of wind throw on site</li><li>• general direction of lean</li></ul>                                                                |
| 5    | Location of services: <ul style="list-style-type: none"><li>• power</li><li>• telephone</li><li>• gas</li><li>• sewage</li><li>• water</li><li>• communication lines</li></ul>                                                                             |
| 6    | Environmental consent requirements: <ul style="list-style-type: none"><li>• streams/rivers</li><li>• wildlife sanctuaries</li><li>• native vegetation</li><li>• historic sites</li><li>• debris material</li></ul>                                         |



## → APPENDIX 3. LEGISLATIVE FRAMEWORK

The Health and Safety in Employment Act 1992 is underpinned by a number of Regulations. A full copy of the Act and the associated Regulations can be downloaded (free) at [www.legislation.govt.nz](http://www.legislation.govt.nz).

Other legislation relevant to this code includes:

- › Employment Relations Act 2000
- › Hazardous substance New Organisms Act 1996.

### 1. A SUMMARY OF THE HEALTH AND SAFETY IN EMPLOYMENT ACT 1992

This following summary of the Act focuses on the aspects that are relevant to forest operations.

While it provides some advice as to the interpretation of the Act, it should not replace legal advice and if you have any queries, seek assistance from a health and safety professional and/or legal counsel as appropriate.

The objective of the Health and Safety in Employment Act 1992 (the Act) is to prevent harm to all people at work and people in the vicinity of a place of work. The Act does this by:

- › promoting excellence, particularly through systematic management of health and safety
- › defining harm and hazards in a comprehensive way
- › imposing duties on those who are responsible for work, or do work
- › setting requirements that relate to taking all practicable steps to ensure health and safety, and ensuring that the requirements are flexible to cover different circumstances; and
- › recognising employee participation in health and safety management and that the process is conducted in good faith by all those involved.

The Act creates duties for most people connected with places of work including:

- › employers
- › employees (including trainees, people gaining work experience and volunteers)

- › the self-employed
- › principals to contractors and employees of contractors and subcontractors
- › persons who control a place of work
- › hirers, sellers and suppliers of plant.

## 2. REGULATIONS

Regulations are promulgated from time to time under the Act. Regulations may, among other things, impose duties on employers, employees, designers, manufacturers and others relating to health and safety. These regulations may apply with respect to places of work, plant, processes or substances, and may deal with particular problems that have arisen.

The Health and Safety in Employment Regulations 1995 require the provision of facilities such as toilets, first aid, for employees to wash, a place to have meals and the provision of wholesome and sufficient drinking water. The regulations also set a range of general health and safety and welfare requirements in addition to the Act, including:

- › restricting young people from certain hazardous work and times of work
- › requiring certification of workers using some hazardous equipment
- › requiring notification of particular types of hazardous work, including forestry; and
- › creating duties for the designers, manufacturers and suppliers of plant and protective clothing and equipment.

## 3. APPROVED CODES OF PRACTICE (SECTION 20)

Approved Codes of Practice are provided for in the Act. They are statements of preferred work practice or arrangements, and may include procedures which could be taken into account when deciding on the practicable steps to be taken. Compliance with codes of practice is not mandatory; however, compliance with an approved code of practice may be used in Court as evidence of good practice of an employer or other duty holder having taken “all practicable steps” to meet the duty.

#### 4. EMPLOYERS' DUTIES (SECTION 6)

Employers have a general duty to take “all practicable steps” to ensure the safety of employees while at work. In particular, they are required to take all practicable steps to:

- › provide and maintain a safe working environment
- › provide and maintain facilities for the safety and health of employees at work
- › ensure that machinery and equipment are safe for employees
- › ensure that working arrangements are not hazardous to employees; and
- › provide procedures to deal with emergencies that may arise while employees are at work.

Taking “all practicable steps” means doing what is reasonably able to be done in the circumstances, taking into account:

- › the severity of any injury or harm to health that may occur
- › the degree of risk or probability of that injury or harm occurring
- › how much is known about the hazard and the ways of eliminating, reducing or
- › controlling it; and
- › the availability, effectiveness and cost of the possible safeguards.

A person is required to take all practicable steps in respect of circumstances that they know or ought reasonably to know about.

#### 5. HAZARD MANAGEMENT (SECTIONS 7 TO 10)

Employers must identify and regularly review hazards in the place of work (existing, new and potential) to determine whether they are “significant hazards” and require further action. If an accident or harm occurs that requires particulars to be recorded, employers are required to have the matter investigated to determine if it was caused by or arose from a significant hazard).

“Significant hazard” means a hazard that is an actual or potential cause or source of:

- › serious harm (defined in Schedule 1 of the Act), or

- › harm (being more than trivial) where the severity of effects on any person depend (entirely or among other things) on the extent or frequency of the person's exposure to the hazard, or
- › harm that does not usually occur, or usually is not easily detectable, until a significant time after exposure to the hazard.

The Act requires all employers, principals, and persons in control of a place of work to take 'all practicable steps' to ensure that workers are not exposed to hazards by following an effective hazard identification process. This involves the following steps:

- › Systematically identifying and assessing the risk of harm to a person exposed to the hazard
- › In the case of a significant hazard, control the hazard; and if the hazard can not be eliminated or isolated then it should be minimised
- › Monitor the hazard, regularly assessing the hazard.

Where the hazard is significant, the Act sets out the steps employers must take:

- › Where practicable, the hazard must be eliminated.
- › If elimination is not practicable, the hazard must be isolated.
- › If it is impracticable to eliminate or isolate the hazard completely, then employers must minimise the likelihood that employees will be harmed by the hazard.
- › Where the hazard has not been eliminated or isolated, employers must, take steps to minimise the exposure or likelihood of exposure to the hazard and where appropriate:
  - › provide protective clothing and equipment and ensure that it is accessible and used
  - › monitor employees' exposure to the hazard
  - › seek the consent of employees to monitor their health; and
  - › with informed consent, monitor employees' health.

If an accident or harm occurs that requires particulars to be recorded, employers are required to have the matter investigated to determine if it was caused by or arose from a significant hazard.

## 6. IDENTIFYING HAZARDS

Employers must identify and regularly review hazards in the place of work (existing, new and potential) to determine whether they are “significant hazards” and require further action.

The first stage of identifying hazards occurs in the design and work planning phase. It is at this time that both the generic hazards associated with that type of work and some of the specific hazards for this job are identified.

During the planning phases it may be possible to identify ways to eliminate a potential hazard, for example by using different equipment.

One way to ensure hazards are adequately identified is to complete a task analysis prior to commencing the work and include site specific hazards. This enables a review of the proposed work practices and provides an opportunity to plan for any safety equipment or tools required for the control of the hazards.

A person is required to take all practicable steps in respect of circumstances that they know or ought reasonably to know about.

## 7. CONTROLLING A HAZARD – THE HIERARCHY OF CONTROLS

The control hierarchy is outlined in the HSE Act and requires people to take ‘all practicable steps’ to control each hazard. The Act is very specific about the order in which you need to consider the appropriate control/s for a hazard.

To take all practicable steps to control a hazard, you should plan the work to identify how to control it.

Ways to assess which control is appropriate for each identified hazard include:

- › Looking at similar workplaces or processes.
- › Looking at the workplace’s previous incident and injury reports and data.
- › Consulting with health and safety representatives and other employees.
- › Looking at the way tasks/jobs are performed.
- › Looking at the way work is organised.

## 7.1 Elimination

Elimination of the hazard is naturally the first preference for controlling a hazard as it completely removes the potential harm.

## 7.2 Isolation

Isolation of the hazard provides a barrier that prevents people from getting to the hazard (or the hazard from getting to them). The hazard still exists, but in this way everyone is protected so long as the isolation method is monitored and/or maintained.

You may isolate a hazard using time or space. Examples include completing particular work at different hours when other people will not be around, or providing a physical barrier that prevents unauthorised access to the hazard.

Isolation methods may be used in conjunction with other control methods. For example, most workers may be isolated from the hazard, but trained or specialist personnel may be required to access the hazard.

## 7.3 Minimisation

This is the least preferred method of controlling a hazard but it can be effective, and in certain circumstances may be the appropriate method of controlling a hazard. Often people see minimisation steps as an 'easy' option and consider it ahead of other options. This is not correct and where practicable steps to either eliminate or isolate a hazard are available, using a minimisation step contravenes the Act. The reason that minimisation is at the bottom of the hierarchy of controls is that unlike elimination and isolation methods, where a minimisation method is used there is still a level of exposure to the hazard.

A minimisation step only minimises the risk of harm or the actual harm that may result from the hazard. For example training people to a higher skill competency may reduce the risk of an incident occurring or reduce the harm incurred (but won't necessarily prevent either).

In many circumstances where minimisation steps are used, such as protective clothing/equipment, an individual may still be harmed, however it minimises the likelihood of harm and the severity of the injuries.

The Act places duties upon people to prevent harm. Therefore opting for a minimisation control when there is a risk of harm (in the absence of considering the higher ranked alternatives of elimination and isolation) is inadequate and puts employees and contractors at risk.

## 8. MONITORING A HAZARD

If a hazard has not been eliminated, then on-going monitoring of the hazard must occur.

Monitoring may include:

- › Regular safety checks
- › Maintenance of vehicles, plant or tools etc
- › Updated or renewed training for people.

## 9. EMPLOYEES AND HEALTH AND SAFETY REPRESENTATIVES (SECTION 12)

Before employees begin work, they must be informed by their employer of:

- › hazards they may be exposed to while at work
- › hazards they may create which could harm other people
- › how to minimise the likelihood of these hazards becoming a source of harm to themselves and others
- › the location and correct use of safety equipment; and
- › emergency procedures.

Employers are also required to inform employees of the results of any health and safety monitoring. In doing so, the privacy of individual employees must be protected.

Where there are employee 'health and safety representatives', the employer must ensure that the representatives have ready access to sufficient information about health and safety systems and issues in the place of work to enable them to be able to carry out their functions effectively.

## 10. TRAINING AND SUPERVISION OF EMPLOYEES (SECTION 13)

An employer must ensure that every employee who:

- › does work of any kind, or
- › uses plant of any kind, or
- › deals with a substance of any kind
- › in a place of work has the knowledge and experience – or is supervised by someone who has – so that they are not likely to suffer harm, or lead to the harm of others.

Every employee must be adequately trained in the safe use of all plant, objects, substances, protective clothing and equipment that they are, or may be, required to use or handle.

#### **11. RESPONSIBILITY FOR EMPLOYEES' WORK ACTIVITIES (SECTION 15)**

Employers are also responsible for the health and safety of others arising from the work activities of their employees. They must take all practicable steps to ensure that no action or inaction of an employee while at work causes harm to any other person.

#### **12. PERSONS IN CONTROL OF A PLACE OF WORK (SECTION 16)**

The Act places duties on persons who control a place of work in relation to people in the vicinity, and to visitors.

A "person who controls a place of work" includes a person who owns, leases, subleases or occupies a place of work, or who owns, leases or subleases plant or equipment used in a place of work.

#### **13. DUTIES OF THE SELF-EMPLOYED (SECTION 17)**

Every self-employed person shall take all practicable steps to ensure that no action or inaction of theirs while at work harms the self-employed person or any other person.

#### **14. DUTIES OF PRINCIPALS (SECTION 18)**

Principals engaging contractors are required to take all practicable steps to ensure that:

- › no employee of a contractor or subcontractor, or
- › if an individual, no contractor or subcontractor
- › is harmed while doing any work (other than residential work) that the contractor was engaged to do.

#### **15. HIRERS, SELLERS AND SUPPLIERS OF PLANT (SECTION 18A)**

The Act places duties on people to ensure that any plant or equipment that is used in a place of work is designed and made, and has been maintained, so that it is safe for its intended use. The duties apply to people who:

- › hire, lease or lend plant to another person that could be used in a place of work



- › sell or supply plant (other than for hire, lease or loan)
- › install or arrange plant in addition to either of the above.

## **16. DUTIES OF EMPLOYEES (SECTION 19)**

Every employee shall take all practicable steps to ensure:

- › their own safety while at work (including using protective clothing and equipment); and
- › that no action or inaction of theirs while at work causes harm to any other person.

Employees have a right to refuse to undertake work that they consider likely to cause serious harm. However, employees have an obligation to attempt to resolve the matter with their employer.

## **17. DEEMED EMPLOYEES**

People receiving on-the-job training or work experience, loaned employees and volunteer workers are all deemed to be “employees” of an employer or self-employed person for whom they are working. Most employer duties apply, but not the duty to provide opportunities for employee participation.

## **18. OPPORTUNITIES FOR EMPLOYEE PARTICIPATION (PART 2A)**

Employers must provide reasonable opportunities for employees to participate effectively in on-going processes for the improvement of health and safety in the place of work. Where there are more than 30 employees, or where an employee or union representing employees requests it, the employer must seek agreement on, develop, implement and maintain a system of employee participation. Where agreement cannot be reached on the system of employee participation, there are default provisions set out in the Act.

Where employee health and safety representatives are elected, they are entitled to paid leave to attend approved training courses.

A trained employee health and safety representative may issue a hazard notice to an employer where they believe there is a hazard in the place of work, they have brought it to the employer’s attention and the issue has not been resolved.

Employers and employees must deal with each other in good faith while seeking agreement on, developing and maintaining a system of employee participation.

## **19. NOTIFICATION OF PARTICULAR HAZARDOUS WORKS (SECTION 23 OF THE REGULATIONS)**

This section refers to the Regulations. There are some activities that are considered by their very nature to be particularly hazardous. This work may have additional requirements placed on them to ensure worker safety. These requirements may include items such as licensing, registration, certificates of competence etc.

Section 26 of the HSE Regulations 1995 outlines the requirement to notify the MBIE if you are undertaking one of these activities.

## **20. ACCIDENTS, SERIOUS HARM AND NOTIFICATION (SECTIONS 25 AND 26)**

The Act requires employers, the self-employed and principals to contractors to keep a register of work-related accidents and serious harm.

For employers, this includes every accident that harmed (or might have harmed):

- › any employee at work, or
- › any person in a place of work controlled by the employer.

Employers are also required to investigate all accidents, harm and “near misses” to determine whether they were caused by a significant hazard. “Serious harm” is defined in Schedule 1 of the Act.

Any occurrences of serious harm of a kind that must be recorded shall also be notified to the Secretary of Labour (in practice, the nearest MBIE office) as soon as possible after the occurrence becomes known to the employer. In addition, the accident must also be reported in the prescribed form within seven days. (Forms are available from the MBIE website.)

If a person suffers serious harm, the scene of the accident must not be interfered with unless to:

- › save the life of, prevent harm to or prevent suffering to, any person
- › maintain public access for essential services, e.g. electricity, gas
- › prevent serious damage or loss of property.

A health and safety inspector will advise whether or not the MBIE will investigate the accident and what action may be taken in the meantime.

## 21. OFFENCES LIKELY TO CAUSE SERIOUS HARM – INVOLVING KNOWLEDGE (SECTION 49)

The most serious offence under the Act is where a person having Prior Knowledge through a manner of wilful blindness:

- › takes an action, knowing that it is reasonably likely to cause death or serious harm and that the action is contrary to a provision of the Act
- › does not take action, knowing that inaction is reasonably likely to cause death or serious harm and the person concerned is required by the Act to take action.

## → APPENDIX 4. REFERENCE GUIDE

### Acts and Regulations:

- › Health Safety and Employment Act and associated Regulations
- › Employment Relations Act
- › Hazardous Substances New Organisms Act
- › [www.legislation.govt.nz](http://www.legislation.govt.nz)

**First Aid:** MBIE guidelines “First aid for Workplaces – A Good Practice Guide” [www.osh.dol.govt.nz/order/catalogue/252.shtml](http://www.osh.dol.govt.nz/order/catalogue/252.shtml)

**Drugs and Alcohol:** NZFOA Plantation Forestry Code of Practice – Eliminating Drugs and Alcohol from the Workplace [www.nzfoa.org.nz](http://www.nzfoa.org.nz)

**Training:** Forest Industries Training and Education Council (FITEC) [www.fitec.org.nz](http://www.fitec.org.nz)

- › New Zealand Qualifications Authority (NZQA) [www.nzqa.org.nz](http://www.nzqa.org.nz)

### Signage and Temporary Traffic Control:

- › Transit NZ Code of Practice for Temporary Traffic Control [www.nzta.govt.nz](http://www.nzta.govt.nz)
- › FITEC Best Practice Guide for Temporary Traffic Control [www.fitec.org.nz](http://www.fitec.org.nz)

### Working around powerlines:

- › Approved Code of Practice for Tree Work around Powerlines [www.osh.dol.govt.nz/order/catalogue/310.shtml](http://www.osh.dol.govt.nz/order/catalogue/310.shtml)

- › Guide to Electrical Safety for Forestry and Woodlot Felling and Logging Operations [www.eea.co.nz](http://www.eea.co.nz)

**Heights:** Best Practice Guidelines for working at heights in New Zealand [www.osh.dol.govt.nz/order/catalogue/136.shtml](http://www.osh.dol.govt.nz/order/catalogue/136.shtml)

**Hi Visibility Clothing standard:** NZ Forest owners Association – NZ Forestry Guidelines for High-Visibility Clothing [www.nzfoa.org.nz](http://www.nzfoa.org.nz)

**NZ Standards:** [www.standards.co.nz](http://www.standards.co.nz)

**Tree Work:** Approved Code of Practice for Tree Work – Arboriculture [www.osh.dol.govt.nz/order/catalogue/309.shtml](http://www.osh.dol.govt.nz/order/catalogue/309.shtml)

**Mobile plant – Safety Structures:** Approved Code of Practice for Operator Protective Structures on Self-Propelled Mechanical Mobile Plant [www.osh.dol.govt.nz/order/catalogue/189.shtml](http://www.osh.dol.govt.nz/order/catalogue/189.shtml)

**ATV:** Guidelines for the safe use of quad bikes [www.osh.dol.govt.nz/publications/booklets/safe-use-quad-bikes/toc.asp](http://www.osh.dol.govt.nz/publications/booklets/safe-use-quad-bikes/toc.asp)

**Elevated Work Platforms:** Code of Practice for Power-Operated Elevating Work Platforms [www.osh.dol.govt.nz/order/catalogue/195.shtml](http://www.osh.dol.govt.nz/order/catalogue/195.shtml)

**Helicopter Operations:** Civil Aviation Authority [www.caa.govt.nz](http://www.caa.govt.nz)

**Fires:** National Rural Fire Authority (NRFA) [www.nrfa.org.nz](http://www.nrfa.org.nz)

**Roading:** New Zealand Forest Roading Manual – NZ Forest Owners Association [www.nzfoa.org.nz](http://www.nzfoa.org.nz)

**Hazardous Substances:** NZS 8409:2004 Management of Agrichemicals [www.standards.co.nz](http://www.standards.co.nz)

- › NZ Transport Agency [www.nzta.govt.nz](http://www.nzta.govt.nz)
- › *Growsafe* and *Approved Handler* Certification [www.growsafe.co.nz](http://www.growsafe.co.nz)

**Best Practice Guidelines:** [www.fitec.org.nz](http://www.fitec.org.nz)

**Loading & Transport:** Log Truck Safety Council standards [www.logtruck.co.nz](http://www.logtruck.co.nz)



