

Forestry Assessment Tool

NOVEMBER 2015



ABOUT THIS HANDBOOK

This handbook supports WorkSafe New Zealand's Harm Reduction Project, targeting safe practice in forestry operations, by providing tools and guidance for workplace safety compliance assessments in this sector.

The following lists forestry collateral that can be accessed directly through your device.

	WorkSafe Forestry website
	Safety and Health in Forestry Operations ACOP
	Forestry Operations ACOP Amendment 2014
	Safe Manual Tree Felling BPG
	Safe Retreat Positions in Breaking Out BPG
	A Guide to Safety with Chainsaws



Safety and Health in Arboriculture ACOP



Enforcement Decision Model (EDM)

You must install a QR Reader App from the Apple Store or Google Play on your device to access the information.

1.0/

**HEALTH AND
SAFETY SYSTEMS**

ASSESSMENT

1.1 PRE-SITE VISIT AND ON-SITE AWARENESS

PRE-VISIT

- > Review client history
- > Review information held on duty holders/PCBU's
- > Notifiable work checked and current
- > Review prior visits and action taken
- > Any current issues ie investigations ongoing
- > Conduct regular work vehicle checks
- > Signage
- > Site conditions

SELF-CHECK

- > Drive to the conditions
- > Car parked facing exit
- > PPE
- > Communications

Follow the WorkSafe working alone policy. Record in your notebook.

CONTRACTOR INDUCTION

- > Identify person in charge
- > Gear review check relevant to site hazards
- > Man machine interaction - high visibility
- > Overhead hazards - helmet
- > Noise - hearing protection
- > Flying material - eye protection

- > Emergency procedures – assembly point location
- > Radio Telephone (RT) link
- > Establish whether you need to be guided on site

1.2 PRE-HARVEST CONTRACTOR PRINCIPAL AGREEMENTS

- > Check pre-harvest agreement in place and followed
- > Review agreement between principal and contractor
- > Controls determined jointly with the contractor and principal (ACOP 2.4.4)
- > Known infrastructure hazards
- > Bluffs, gorges, roads, power lines
- > Traffic management plan
- > B/Out agreed system to determine Safe Retreat Positions (SRP), Danger Triangle (DT)
- > Maximum log storage capacity
- > Chain shot management
- > Mean tree height
- > Tree Felling (TF) plan

1.3 CONTRACTOR POLICY AND PROCEDURES

- > Review health and safety system policies and procedures in particular for TF and Breaking Out (BO)
- > Review daily tailgate meetings
- > Identify faller and/or Head Breaker Out (HBO)
- > HBO/TF contact person
- > Drug and alcohol policies

MANAGEMENT OF

- > Hung up trees
- > Tree drives
- > Adverse weather
- > BO procedure for fouled drag
- > Correct signal system

Recheck if further information is required following general management documentation inspection.

HEALTH AND SAFETY SYSTEM EFFECTIVENESS

- > Check if health and safety system is effective
- > Monitor work practices and equipment
- > Check principal is monitoring the health and safety system

1.4 HAZARD MANAGEMENT

Check site hazards recorded and controls are in place.

- > Check register of hazards and controls are:
 - consistent
 - linked to “tailgate alterations” and
 - reviewed
- > Review task specific work plans eg TF, BO, skid site
- > Review daily tailgate meetings
- > Mean tree height
- > Identify faller and/or Head Breaker Out (HBO)
- > HBO/TF contact person

Working alone TF in isolation from crew:

- > Check-in procedure and monitoring in place
- > Who makes contact if no response from faller?
- > Tree drives notified, recording tree drives is good practice

CHECK RELEVANT SEASONAL HAZARDS ARE BEING MANAGED eg

WINTER

- > Road conditions (ice, mud, rain, fog), visibility and darkness
- > Breaker Out
- > Log transport

SPRING AND EARLY SUMMER

- > Pollen season (allergies to eyes and breathing)
- > Slippery logs
- > Log loading, security and transport awareness

LATE SPRING AND SUMMER

- > TF
- > Equinox winds
- > Higher exposure to falling trees and overhead hazards

SUMMER

- > Higher heat exposure
- > Hydration

1.5 ACCIDENT/INCIDENT REPORTING

- > Check the accident/incident and near miss register and follow up, if required.

1.6 OCCUPATIONAL HEALTH

- > Pre-employment and annual health checks
- > Drug and alcohol policy being followed
- > Fatigue being managed
- > Nutrition and hydration training
- > Noise
- > Fumes, dust and allergies

1.7 WORKER PARTICIPATION

- > Identify Health and Safety (H&S) champion/representative
- > Talk to H&S champion/representative
- > Employees participation in H&S systems

1.8 TRAINING AND SUPERVISION

- > Every person undertaking forestry work shall be either under documented training and close supervision, or deemed competent (2.3.1).
- > NZQA standard can be considered evidence of competency, along with initial and ongoing and competency assurance.
- > Review ROLs to establish competency of staff.
- > Particular attention must be given to TF and HBO roles.
- > On-job training must also be recorded.
- > NZQA unit standard 22994 covers nutrition and hydration.

TREE FALLER QUALIFICATIONS

- > Faller must hold unit standard 17765.
- > If the tree faller holds 17766, a documented competency assessment must have been completed for the tree felling work they are undertaking.

- > If the tree faller does not hold 17766 the tree faller must be under close supervision ie direct and constant one on one supervision.

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 (ACOP definition).

- > Machine assist must hold 24569 (pushing) 24570 (pulling) units or 1255.
- > A tree faller holding 17765 must be under close supervision by a qualified and competent tree faller to fell trees using machine assistance.

BREAKER OUT QUALIFICATIONS

- > HBO must hold unit 1258
- > For forest harvesting operations that cannot be assessed for 1258.
- > NZQA unit standard 24567 is not a substitute for unit standard 1258.
- > Competenz registered assessors can use the 1258 unit standard assessment document and complete all the criteria applicable excluding the elements which specifically require the use of a Skyline. This document can be included as a record of competency assessment. WorkSafe accepts this document as being the same or similar evidence as holding NZQA unit standard 1258.
- > HBO must be at the break out face with the breaker outs at all times
- > Commercial forestry work must be notified to WorkSafe. Contractors must establish that they have met their obligation to notify WorkSafe of the work, or at least be able to establish that the principals have notified this work on their behalf.

1.0/

**HEALTH AND
SAFETY SYSTEMS**

GUIDANCE

References in the following guidance refer to sections from the Approved Code of Practice for Safety and Health in Forest Operations

1.1 PRE-SITE VISIT AND ON-SITE AWARENESS

PRE-VISIT

- > Agreed comms and check in times with office (Working alone policy/procedures)
- > Locator device (SPOT) checked and working
- > Site channel known and radio check completed
- > Entry to site via correct access roads
- > Signage checked and appropriate to ACOP requirements
- > RT link - this should be checked before entering the forest
- > Appropriate PPE available to site being visited
- > Access road fit for purpose and maintained

SITE SAFETY BRIEFING

- > Establish location of safe parking area
- > Identify person in charge (PIC) - show warrant and record detail in notebook
- > Confirm PPE and other equipment suitable and appropriate for this site
- > Identify safe zones and exclusion zones with PIC
- > Establish emergency procedures and safe assembly point
- > Confirm radio channel for faller/BO (if being used)
- > Advise PIC you must be accompanied at all times
- > Ensure agreed check in times to office are complied with.

You should record in your notebook that these assessments have been carried out.

1.2 PRE-HARVEST CONTRACTOR PRINCIPAL AGREEMENTS

A document agreed between the principal and contractor should be on site (2.4.4).

This document may come in various formats (a letter of approval or a statement on the 'Harvest Prescription').

1.3 CONTRACTOR POLICY AND PROCEDURES

A documented health and safety management system (2.5.2) should be in place prior to commencement of work. This needs to be relevant to the operations being undertaken and needs to comply with the HSE and HSNO Acts and Regulations.

Refer to section (2.5.2) for minimum requirements.

Any missing items should be taken up with the Principal, and/or Contractor.

Responsibilities	Contractor to document (2.5.2). Principals to verify it is in place before work begins (2.4.1) and to periodically audit its effectiveness.
Examples of evidence	Documented procedures relevant to operations eg procedures for tree felling (adverse weather), breaking out (fouled drags, repositioning the rigging, shock loading and equipment failure) and emergency procedures

HEALTH AND SAFETY SYSTEM EFFECTIVENESS

Responsibilities	Principal to verify its effectiveness by audit (2.4.1).
	Contractor to ensure it is effective (2.5.2).
	Employees to ensure they have awareness (2.6).
Examples of evidence	Records to show system is being monitored eg audit reports carried out by principal (H&S system, TF and BO), these may not be on site.
	Employees knowledgeable about H&S systems (what to do in an emergency, how to report an accident or incident).

1.4 HAZARD MANAGEMENT

Significant hazards specific to the work area should be identified, documented and managed.

Responsibilities	Employers and employees to identify and regularly review hazards, new, existing and potential, and determine whether these are significant and require further action or principal involvement (2.4.4) & (2.8.1).
	Significant hazards documented, controls identified and evidence to show these are regularly reviewed (HSE Act).
Examples of evidence	Hazards may be recorded in various formats. A ‘Harvest Prescription’ document is the most likely long term solution.

It may include maps identifying areas of exceptionally high risk or hazards which will ultimately contribute to the management of areas.

Additional high-risk areas can be identified after this initial agreement is made, is developed, these need to be managed and controlled and agreed with the principal. All hazards need to be periodically reviewed.

Documentation to include how the following hazards will be controlled:

- > Hazards associated with working alone, in particular tree felling ensure (communication systems, in place for a regular check in process) (2.1.2).
- > Check who makes contact if no response from the faller.
- > Tree drives notified, it is good practice to record but not a requirement.
- > Review the process to stop tree felling if a one-onto-two tree drive is unsuccessful, identify who the competent observer is, to help plan management of that hazard (11.7.4)
- > A hung up or cut up tree (manage hazard zones, introduce support person if required, get the tree on the ground) (11.6.1)

Note: machine assist if possible

- > Man/machine interaction when machine assist felling (11.8)
 - > Check for detailed procedures in place for the management of:
 - machine assisted felling
 - winch assisted – pushing and pulling assistance
 - Hauler assistance
 - > Query the process to establish the two tree length zone and communicate the boundaries to all affected parties (11.4).
 - > Traffic management (2.1.1), (traffic management plan to include (signage, moving vehicles, falling debris).
 - > Check for detailed procedures in place for Hauler BO management
 - Fouled drags
 - Shock loading (14.1.1)
 - Emergency procedures.
 - > Sight management policy/procedure for adverse weather (rain wind and heat) eg means to determine wind speed that could alter the daily felling plan and potentially suspend the felling operation (2.8.2).
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1.5 ACCIDENT/INCIDENT REPORTING

Inspectors should establish credibility of accident and near miss investigations and that the outcomes are implemented. This should involve talking to the contractor and the employees.

Responsibilities	<p>Principal to maintain a register of accidents and serious harm recording every accident the principal becomes aware of.</p> <p>Employer maintains a register of accidents and serious harm or near misses (HSE Act s25 (1)).</p>
Examples of evidence	<p>Records of accidents, serious harm or near misses on the site:</p> <ul style="list-style-type: none"> > investigation reports > policy and procedure for management of accidents and incidents.

1.6 OCCUPATIONAL HEALTH

Examples of evidence	<p>Records of pre-employment and annual health checks for staff.</p> <p>Training records covering nutrition and hydration (NZQA unit standard 22994).</p> <p>The employer should be able to demonstrate how the following are being managed:</p> <ul style="list-style-type: none"> > fatigue/driver fatigue and hours of work > nutrition and hydration training
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	<ul style="list-style-type: none">> noise> dust, fumes, pollen and allergies.
	There may be seasonal variation on how these are managed that needs to be taken into consideration.

1.7 WORKER PARTICIPATION

Responsibilities	Employer must provide reasonable opportunities for employees to participate. Talk to employers and employees.
Examples of evidence	Review documents including: <ul style="list-style-type: none">> daily meeting records> work plans eg TF and BO> safety meetings> incident/accident reports specifically> involvement in implementing corrective actions.

1.8 TRAINING AND SUPERVISION

Responsibilities	Breaker out qualifications HBO must hold unit 1258. For forest harvesting operations that cannot be assessed for 1258. NZQA unit standard 24567 is not a substitute for unit standard 1258.
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Competenz registered assessors can use the 1258 unit standard assessment document and complete all the criteria applicable excluding the elements which specifically require the use of a Skyline. This document can be included as a record of competency assessment. WorkSafe accepts this document as being the same or similar evidence as holding NZQA unit standard 1258.

HBO must be at the break out face with the breaker outs at all times.

2.0/

TREE FELLING

ASSESSMENT

2.1 TREE FELLING PRACTICE

The inspector must be satisfied that at the time of the visit TF is being undertaken safely.

If the inspector is not satisfied the full tree felling assessment should be completed.

Evidence of safe tree felling practice should be established through:

- > surge piles
- > tree stumps
- > discussion with tree faller
- > direct observation.

If poor felling is identified, or the Health and Safety systems assessment has raised concerns continue with formal tree felling audit.

- > visually check logs or log surge pile for indications of poor felling refer to BPG Kompetenz
- > over cutting scarf
- > troughing in hinge wood
- > poor execution of cuts, small scarfing.

2.2 COMMUNICATIONS

- > Request RT call to TF to check RT is working.
- > Ensure safe entry to tree felling area is arranged.

2.3 TREE FALLER WELFARE CHECKS

Working alone in isolation from crew.

- > What check in procedure and monitoring is in place?

- > Observe tree felling check in (tank of gas, minimum approximately 30 mins).
- > Observe notification of tree drives (if undertaken).

2.4 TWO TREE LENGTH DISTANCE

- > Tree faller will identify mean tree height for two tree length rule.
- > Existence of tool to accurately measure distance such as a rangefinder - pacing or hip chains are unlikely to work due to terrain and obstacles.
- > The tree faller can explain significant hazard control agreements for infrastructure (roads, powerlines).
- > Interaction with other workers, moving ropes and mobile plant, environmental hazards in the block.

2.5 TRAFFIC MANAGEMENT PLAN (IF REQUIRED)

- > Is there a traffic management plan?
- > If yes, is the traffic management plan being implemented correctly? (2.12)

2.6 EQUIPMENT CHECK

- > Check PPE
- > First aid kit
- > Chainsaw eight safety features
- > Minimum four wedges and tools

2.7 FIVE STEPS OF FELLING

Refer to the Tree Felling BPG.

Question and observe tree faller in the five steps of tree felling:

1. Site assessment
2. Individual tree assessment
3. Prep around tree escape routes
4. Correct felling techniques
5. Retreating and looking up

2.8 SEVEN HARMS

Refer to WorkSafe Tree Felling BPG.

Question and observe:

1. Working close to others
2. Poor felling techniques
3. Broken tops limbs
4. Hung up trees
5. Stem movement, rebound (butt sweep)
6. Falling dead trees, (spars)
7. Faller struck from behind

2.9 MANAGEMENT OF ADVERSE WEATHER

The tree faller is able to explain when tree felling operations will cease due to adverse weather conditions (wind, rain, snow, heat).

2.10 COMPETENCY OBSERVATIONS OF THE TREE FALLER

Take photos of stumps and tree felling.

- > Stumps, holding wood is critical
- > Identify poor tree felling cuts:
 - over cutting scarf
 - hinge wood not retained (hinge wood of at least $\frac{1}{10}$ tree diameter required)
 - insufficient step (Back cut should be a minimum of $\frac{1}{10}$ of tree diameter)
 - small scarfing (Scarf $\frac{1}{4}$ to $\frac{1}{3}$ tree diameter).

Poor practice including but not limited to:

- > poor execution of cuts
- > escape route not completed prior to tree felling cuts
- > back cut not be completed from the safest side
- > tree faller not looking up when moving down escape route.

2.11 TREE DRIVING

Question faller on his/her knowledge of:

- > tree driving procedures
- > requesting observer
- > welfare checks/call in procedure
- > does it match procedures?

Note: Do not request or set up tree drive.

2.12 MANAGEMENT OF A HUNG UP TREE

- > Is machine assistance considered as a first option?

If machine assistance is not a practicable step:

- > is observer available?

High risk, faller likely to attempt a tree drive, risk of:

- > butt sweeping, rebound, breaking off, a hung up tree and head falling back towards the tree faller.

Refer to Tree Felling BPG.

2.13 MACHINE ASSISTED FELLING

- > Safety critical – The tree faller is in control of the machine assisted tree felling operation. The machine operator must not apply force unless directed.
- > Tree felling plan and daily meeting records will include detailed documentation supporting safe machine assisted tree felling. Information obtained in H&S systems assessment (1.4).
- > The plan will include methodology ie winch assistance with hauler or ground based machines or pushing assistance. Information obtained in H&S systems assessment (1.4).
- > The tree faller and machine operator must be competent. Information obtained in H&S systems assessment (1.8.1).
- > Does the mobile plant have sufficient capacity and traction for the task? (11.8.1)
- > Does the tree faller avoid working under any mobile machinery, including raised blades or loads? (11.8.2)
- > Communication with machine operating assisting must be clear and effective.

2.14 WORKER ENGAGEMENT

Tree faller will explain:

- > periodic competency assessment eg annual competency assessment
- > auditing PPE, equipment, five steps, seven harms
- > involvement in H&S system, daily meeting, work plans, health checks
- > training and development, explained achieved and planned
- > involvement in the development and improvement H&S systems on the site
- > what is the involvement in accident/incident investigation, or near miss?

2.0/

TREE FELLING

GUIDANCE

References in the following guidance refer to sections from the Approved Code of Practice for Safety and Health in Forest Operations

2.1 TREE FELLING PRACTICE

Responsibilities	Tree Fallers
Examples of evidence	<p>Good examples of correctly cut stems</p> <p>Competenz Tree Felling BPG: Motor Manual felling cuts pages 9 to 12</p>

2.2 COMMUNICATIONS

- > An effective communication system must be available.
- > Tree faller should have constant radio contact with another person (11.1.1).

Observations/ evidence	> Request that the RT is checked by calling the tree faller.
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2.3 TREE FALLER WELFARE CHECKS

Observations/ evidence	<ul style="list-style-type: none"> > Are tree fallers checking in regularly with nominated person, and are following the agree check in procedure (minimum every 30 minutes) when refilling chainsaw? > Are tree fallers notifying when they need to carry out a tree drive from start to finish? (11.7)
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2.4 TWO TREE LENGTH DISTANCE

- > Two tree length distance should be implemented as agreed will be extended on steep slopes.
- > Hip chains are unlikely to work due to terrain and obstacles.
- > The faller must ensure that the following are not within the two tree lengths of a tree being felled (11.4.1).
- > Mobile plant without appropriate protective structures (this may work closer than two tree lengths but no closer than one tree length unless directly assisting in tree felling).
- > Working ropes - exception cable yarder assisted felling or ropes lowered to the ground that are not operating.
- > Powerlines unless working to an agreed felling plan.
- > Other operations.

Observations/ evidence

- > Direct observation of the tree faller.
- > The faller is able to determine two tree lengths. A range finder or any practical and effective measuring device must be available.
- > The faller is able to demonstrate how they will ensure 2 tree length rule is complied with.

Note: The mean tree height should be defined in the pre-harvest agreement.

- > Felling plan - for trees within 2 tree lengths of powerlines plan needs to be agreed with the asset/network owner and the forest owner/manager and contractor.

2.5 TRAFFIC MANAGEMENT PLAN

Observations/ evidence

- > Traffic is being managed in line with the traffic management plan (if a plan exists).

2.6 EQUIPMENT CHECK

PPE

- > Tree faller should have all necessary PPE. It should be in use and in good condition.

Note: Further guidance is available in section 3 of the ACOP.

CHAINSAW

A chainsaw is required to have all safety features in working order.

Observations/ evidence

The following safety features in working order (4.2.3):

1. A safety mitt
2. A chain brake, some chainsaw are fitted with an inertia chain brake
3. A throttle lock-out
4. A chain catcher
5. A rear hand guard
6. Anti-vibration mounts
7. An on-off switch
8. A muffler and spark arrestor

FALLER

Fallers should have with them all equipment (11.3) that they need to carry out their work.

Observations/ evidence	<ul style="list-style-type: none">> RT in working condition (11.1.1).> 4 wedges + driving tool (11.3.1).> First aid supplies – should include 2 large sterile wound dressings (2.2.4).
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2.7 FIVE STEPS OF FELLING

The tree faller must understand and demonstrate the five step tree felling process.

Responsibilities	<ul style="list-style-type: none">> Tree faller to have knowledge of the five step process.> Contractor/employer to ensure competency (2.5.1).
Observations/ evidence	<p>Refer to BPG and WorkSafe BPG.</p> <p>This is safety critical.</p> <p>Tree Fallers will explain their knowledge in different ways. The inspector must provide the tree faller every opportunity to demonstrate knowledge and skills.</p>

2.8 SEVEN HARMS

The tree faller should understand how tree fallers are harmed.

The seven harms should be discussed; the tree faller should be able to describe them and their appropriate control/s.

Responsibilities	Tree faller: To have knowledge of the seven key areas of harm.
	Contractor: To ensure knowledge of harms (2.5.1).
	To have information available to tree fallers on seven key areas of harm and the controls used to manage the hazards.
Observations/ evidence	Tree faller able to describe the Seven key harms and the controls for management of the hazards: Tree Fallers will explain their knowledge in different ways. The inspector must provide the tree faller every opportunity to demonstrate knowledge.

2.9 MANAGEMENT OF ADVERSE WEATHER

Responsibilities	Contractor to ensure extreme weather hazards and controls included in the hazard management system (2.8.2).
	Tree faller to have knowledge of the controls.

Observations/ evidence	<p>Tree faller able to explain how the hazards associated with extreme weather are controlled effectively.</p> <p>Explanation to include specific reference to the assessment of strong winds, heavy rain, snow and heat.</p> <p>Hazards and controls included on hazard register.</p>
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2.10 COMPETENCY OBSERVATIONS OF THE TREE FALLER

Responsibilities	Refer to Kompetenz BPG
Observations/ evidence	<ul style="list-style-type: none"> > Observe stumps > Observe logs

2.11 TREE DRIVING

Refer to ACOP 11.7.

Responsibilities	<p>Contractor to ensure:</p> <ul style="list-style-type: none"> > competency of tree faller > competent person is available to tree faller at all times when tree felling is occurring.
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	<p>Tree faller</p> <ul style="list-style-type: none"> > inform person available to them that tree drive is to take place and then again when drive is completed > cease tree felling following failed one-on-two tree drive > plan the management of the failed tree drive with a competent observer.
<p>Observations/ evidence</p>	<p>Tree faller</p> <ul style="list-style-type: none"> > Has working RT and able to contact person available to the tree faller. > Tree felling should cease following a failed tree drive that lead to a one-on-two tree drive until an observer is present and a plan to manage the hazard has been agreed.

2.12 MANAGEMENT OF A HUNG UP TREE

(Refer to ACOP 11.6 and Competenz Tree Felling BPG).

<p>Responsibilities</p>	<p>Tree faller to notify other workers immediately.</p> <p>Contractor/employer to ensure competency (2.5.1).</p> <p>Does a contractor/employer ensure machine assistance is considered as a first practicable step.</p>
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Observations/ evidence	<p>Tree faller is following the controls that have been determined eg tree felling policy. These should include:</p> <ul style="list-style-type: none">> stopping work> alerting other workers> managing the danger zone> observer available. <p>The tree should be brought to the ground immediately (11.6).</p>
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2.13 MACHINE ASSISTED FELLING

Responsibilities	<p>Contractor/employer to ensure competency of tree faller and machine operator (2.5.1).</p> <p>Tree faller to:</p> <ul style="list-style-type: none">> hold (1255) 24569 for pushing and 24570 for pulling or> 17765 unit standard and obtain or be working towards completing unit standards to help demonstrate competency.
Observations/ evidence	<p>Such qualifications should be produced with records of learning sighted. Where the tree faller is NOT qualified to 24569 for pushing or 24570 for pulling, the contractor should demonstrate the process used to deem their competence.</p>

This includes the following:

- > they should hold the 17765 unit standard
- > they should be working toward 24569 and
- > or 24570, in a structured training programme
- > the contractor should produce 'on the job' training records, and records of past experience in role
- > the contractor should produce supervision records which include assessment of the specific area where the tree faller will be working and the tree faller's competency to fell the trees in the area safely.

The contractor should produce records of any past audits of the tree faller.

The contractor should produce the record of the assessment process they used to deem the person competent.

For the definition of Competent person refer to ACOP Appendix 1 Definitions.



3.0/

BREAKING OUT

ASSESSMENT

BREAKING OUT PRACTICE

The inspector must be satisfied that at the time of the visit BO is being undertaken safely.

If the inspector is not satisfied the full BO assessment should be completed.

Evidence of safe BO practice should be established through:

- > observing drags landing at the hauler safely
- > correct audible signals being used (12.2.5)
- > ropes and rigging are not over loaded
- > breaker outs appear to be in the clear at break out.

If poor BO is identified, or the H&S systems assessment has raised concerns continue with a formal BO assessment.

3.1 SAFE RETREAT DISTANCE PREDETERMINED

- > Mean tree height established.
- > Determine safe distance for breaker outs to stand.
- > Any reduction to SRP can only be approved by Crew Manager.
- > Existence of tool to accurately measure distance (eg rangefinder)
pacing or hip chains are unlikely to work due to terrain and obstacles.
- > Agreed with forest principal.

3.2 AROUND THE YARDER, CHUTE AREA, LANDING ACTIVITIES CONTROLLED

CHECK SKID LAYOUT

- > $\frac{2}{3}$ of stem/drag landed safely and securely OR
- > stems cleared before breaker outs move into the danger triangle (DT).

DOWNHILL YARDING

- > Check flat chute area is adequate to land stems safely.

CHECK SURGE PILE

- > Managed so stems/debris will not re-enter the chute area.
- > Yarder operator must give clearance to HBO when it is safe to enter the DT.

3.3 CERTIFICATION OF YARDER CAB

- > Yarder cab roof ISO 8083.
- > Yarder cab front and sides ISO 8084.
- > ACOP operator protective structures on self-propelled mobile mechanical plant.

3.4 TOWER INSPECTION

- > All yarder towers shall be inspected annually by an approved tower inspector.
- > Check certificate for TI number and expiry dates.
- > Check and photograph certifications, (Cab, FOPS, OPS).
- > Yarders must have identification plate attached to or near tower.
- > Information on specs must be on plate, ie rope size, serial number.
- > All yarders must have a maintenance log book.
- > Ensure log book matches yarder.
- > Sight yarder installation date for guy ropes extensions, dead man straps.
- > Are guy ropes at 45° or less.

- > Are guy ropes anchors safe for use, checked daily and documented.
- > Guy rope life span.
- > Tower Yarder and Swing Yarder Guy rope replacement schedule.

Competenz BPG Maintenance – Inspection of Yarder Towers page 25
Swing Yarder Pendant rope replacement schedule.

3.5 PPE AND EQUIPMENT

Visual check of Breaker out's PPE.

Existence of tool to accurately measure distance (example range finder) pacing or hip chains are unlikely to work due to terrain and obstacles.

3.6 HBO DUTIES

- > Identify HBO must hold 1258.
- > Test two means of communication.
- > Tooter/RT or two radios.
- > RT comms to yarder op and reply via Tooter OK.

3.7 “UPSET CONDITIONS” FOULED DRAGS

- > HBO understands procedure for “upset conditions” fouled drags. Observe fouled drag compliance if there is an opportunity.
- > Ropes must be “slacked” and only HBO to approach drag and determine an action plan to rectify before other staff enters the area.
- > Minimum retreat of at least the mean tree height if the drag can't be seen when at retreat position.
- > Only HBO can move forward after advising yarder operator to “go ahead slowly”.

3.8 ANCHORS

TAIL HOLD

- > Mobile plant safe condition for use:
 - cab certification
 - seat belt
 - safe condition for use – brakes, steering, fire extinguisher, no loose equipment.
- > Training 17771 Operator Mobile tail hold.
- > Communication (14.6.1).
- > Not on machine while drag being extracted (14.6.2).
- > Seat belt on when operator in machine.
- > Securely anchored.
- > Competenz Cable Logging BPG.

STUMPS

Refer to: ACOP 14.3 and BPG Cable Harvesting.

3.9 OBSERVE BREAKING OUT

- > HBO must be at the break out face with the breaker outs at all times.
- > All signals shall comply with ACOP (12.2.5).
- > Breaker outs in the clear as rigging returns minimum of 15 m or two strop lengths whichever is greater.
- > HBO controls rigging at break out.
- > Breaker outs are at SRP or default distance behind the HBO.
- > HBO signals break out clearly to Yarder Operator.

- > HBO hand on radio at break out.
- > HBO hands over control to Yarder operator when clear.

3.10 **WORKER ENGAGEMENT**

- > Breaker out will explain.
- > Periodic competency assessment eg annual competency assessment.
- > Auditing PPE, communications, hauler, SRP, ropes, rigging.
- > Involvement in H&S system, daily meeting, work plans, health checks.
- > Training and development, explained achieved and planned.
- > Involvement in the development and improvement H&S systems on the site.
- > What is the involvement in accident/incident investigation, or near miss.

3.0/

BREAKING OUT

GUIDANCE

References in the following guidance refer to sections from the Approved Code of Practice for Safety and Health in Forest Operations

3.1 SAFE RETREAT DISTANCE PREDETERMINED

Responsibilities	Principal and contractor to agree prior to harvesting on a system to determine SRP (12.2.21).
	Principal to audit the SRP (2.4.1).
	Contractor has documented the process to determine and identify SRP.
Observations/ evidence	Documented agreement between principal and contractor.
	Audit carried out by the principal.
	Head breaker out in control of break out team, team are following their instructions.
	Breaker outs retreating to the SRP before movement of stems commences.

3.2 AROUND THE YARDER, CHUTE AREA, LANDING ACTIVITIES CONTROLLED

Observations/ evidence	Check skid layout
	<ul style="list-style-type: none"> > Check that two-thirds of the stem length is being landed safely. > Debris and slash will not slide down the chute/slope into the danger triangle or can't move unexpectedly as it tensions, trapping fingers under the strop.

Downhill yarding

- > Where the site has been set up downhill, the yarder has to be set up so any material including the drag does not hit it or pose a risk to people working on the landing. Adequate room must be provided to slow and land the drag, as momentum and gravity create risk.

Check surge pile

- > The area directly forward of the yarder should be kept clear of logs and any other material that might roll or slide back down the chute.
- > Breaker outs must be in the SRP when debris is being cleared.
- > Yarder operation must give clearance to the HBO when it is safe to enter the danger triangle.
- > The head breaker out must assess each drag and ensure the predetermined SRP is still safe. He may extend the position further from the drag but should never bring it closer to the drag unless permission is received from the Crew Manager. Any alteration must be documented.
- > Question the yarder operator and loader operators about the procedures as they must not be working in this area when breaker outs are in the danger triangle below.
- > Check that loaders are not flinging slash and other log debris over the side or around the landing toward the breaker outs. This material can roll long distances.

3.3 CERTIFICATION OF YARDER CAB

Responsibilities	<p>The contractor/employer shall ensure the Yarder cab is certified and in a safe condition for use.</p> <p>The principal shall ensure the contractor/employer is providing mobile plant which is safe for use.</p>
Observations/ evidence	<ul style="list-style-type: none"> > Check yarder cab certification. > Visual inspection of hauler cab including operator protective structure. > Ask the operator if the yarder is in a safe condition for use.

3.4 TOWER INSPECTION

Observations/ evidence	<p>The plate should include:</p> <ul style="list-style-type: none"> > number > breaking strength and > size of Guy ropes and any other ropes or lines required (14.8.1). <p>Information on the certification plate should include:</p> <ul style="list-style-type: none"> > owner of the mobile plant > make, model, serial number > inspection expiry > certifier number (14.8.2). <p>Guy rope lifespan specified in Competenz BPG - Maintenance inspections of yarder towers.</p> <p>An inspection is required following a tower tip-over.</p>
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3.5 PPE AND EQUIPMENT

Responsibilities	The contractor/employer shall ensure all PPE required is provided to the correct standard and in a safe condition for use.
	The contractor/employer shall ensure PPE is used.
	The principal shall ensure the owner/employer is providing PPE and ensuring its use.
Observations/ evidence	PPE is available and being used eg high viz vest, ear protection, gloves, safety footwear.
	Ask employees if PPE is provided and replaced as required.
	Ask health and safety representative if PPE is provided and replaced as required.
	Inspect audits reports - have any required actions to replace PPE been completed.

3.6 HBO DUTIES

Responsibilities	HBO controls all break out operations and ensures the safety of the breaker outs (12.2.8).
	Breaker outs must follow the instructions given by the HBO.
Observations/ evidence	> If due to the hauler configuration the HBO cannot achieve 1258 the employer must provide documented evidence of audited competence appropriate to the type of breaking out operation. (ACOP Appendix 1).

- > HBO must be at the break out face with the breaker outs at all times.
- > Breaker outs must face the drag at the SRP before the go ahead signal is given (12.2.19).
- > Breaker outs in the clear as rigging returns minimum of 15 m or two strop lengths whichever is greater (12.2.11).
- > Breaker outs are at SRP or default distance behind the HBO.
- > HBO H&S over control to yarder operator when the drag has broken out and is clear.

3.7 UPSET CONDITIONS FOULED DRAGS

Observations/ evidence

- > If a drag is fouled, tension shall be released in the main rope, tail rope and slack-pulling rope, (if appropriate), before any attempt is made to release strops or cut any stem with a chainsaw (12.2.20).
- > After advising the yarder operator the HBO to approach the fouled drag to determine an action plan to rectify before any further breaker outs enter the area.

GLOSSARY OF ABBREVIATIONS

TERMS	DEFINITIONS
BO	Breaking out
DT	Danger Triangle
FOPS	Falling objects protective structure
HBO	Head breaker out
HSE	Health and Safety in Employment Act 1992
HSNO	Hazardous substances and new organisms
OPS	Operator Protective Structure
PPE	Personal Protective Equipment
RT	Radio telephone
SRP	Safe retreat position
TF	Tree felling

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