

Tree Climbing and Aerial Rescue

Guidance to the technical author:

- ***Please do not comment on items that are greyed out in this document as the context of this text will be supplied by the Arboricultural Association.***
- *Throughout the guide there will be sections or boxes that will directly relate to the ICoP - please take note of these in your response.*
- *The tone of the document should reflect the intended audience, e.g. the climbing arborist, and should also reflect the relationship between this guide and the content of the ICoP.*
- *The document is also intended to provide reference for supervisors / team leaders; this will appear as summary 'check list' information in each section, generally reflecting the main items from the relevant AFAG Safety guide.*
- *Comments in green are provided to identify the expected information to be included within the technical guide.*
- *Please indicate where illustrations or photos should be included - you do not need to supply these but should either provide a rough sketch, or describe the important elements of any image.*
- ***When typing your response for each section, please use the **TECH AUTHOR** style.***

Front cover

Verso page

Contents

Draft Technical Guide scoping document:

Tree Climbing and Aerial Rescue



1 Introductory material:

Foreword by the Association and Acknowledgements - This would be a non-exhaustive list of those individuals who have provided significant contribution to the project.

1.1 Introduction:

Why the technical guide came about, development history and intended use.

1.2 Structure:

Clearly defining how the technical guide is framed into parts and how these parts relate to each other.

1.3 Scope and limitations:

Who the technical guide is aimed at and who is excluded from it. Sectors the technical guide does not apply to, such as, tree climbing for the purposes of sport or recreation.

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2.0 Technical Guidance

2.1 General

competence, training, pre-planning, job packs, statement/ diagram of pre-planning (b-f from 2.2.2 ICOP): 'Don't assume you have to climb!'

2.2 Planning and Management

2.2.1 Risk Control Systems and Emergency Planning

This section should include information to enable the practical arborist to understand the purpose of the risk assessment process and their role within it. We anticipate an illustration is used here depicting a common work scenario relating to the guide title, identifying 15-20 hazards, accompanied by brief guidance on application of generic and site specific risk assessments.

Make mention of this potentially being a two-stage process, especially where work has been assessed by someone else before the team arrives to carry out specified operations. The initial assessment should be revisited and amended as necessary.

2.2.1.1 Emergency information and action plans

Recording important information such as location, access, third party contacts, etc. This information can then inform the process of creating a plan to be followed in case of accident / incident. This should include aerial rescue.

2.2.1.2 Method statements

These should be supported by a risk assessment, e.g. a RAMS pack that is specific to the task.

2.2.1.3 Briefing of all parties

SSRA / Tool-box talks / tail-gate briefings.

2.2.2 Other work site considerations

These should include comments on areas such as wildlife, utilities, TPO's, other contractors or workgroups onsite, noise, dust, biosecurity, traffic and pedestrian management, third-party aggression, etc.

2.2.2.1 Resources

These should be specific to the work operation, e.g. equipment in good working order and compliant with PUWER and LOLER, suitable for the job, present on site, equipment for rescue, first aid kit, ropes long enough (very important if considering SRT systems).

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2.3 Roles and Responsibilities

2.3.1 General

Please refer to ICOP 2.3.1 page 10 "proficient operator"; we suggest providing suitable examples of the points raised with the proficient operator box in this section.

2.3.2 Communication

2.3.2.1 Purpose and benefit of good communication

This should be specific to the guide title.

2.3.2.2 Knowing who to speak to and raising concerns

2.3.2.3 Types of communication systems

Please list examples, pros and cons of those examples, and any issues surrounding interpretation and confirmation of messages.

2.3.3 Supervision

See ICOP page 10, "competent person" box.

2.3.4 Operator Proficiency

This should be a brief statement which encompasses ensuring the operator has undertaken appropriate training and read manufacturer's instructions for the equipment in use.

2.4 Work Site Assessment

2.4.1 General

This should cover areas such as safe zones, danger zones, layout and positioning of equipment relevant to the guide title; you should consider aerial rescue methods, site access and egress (any illustrations are to include a power-line example). Drop zones should be emphasised - in relation to this Guide title, this may include equipment being dropped by the climber, or dead wood / hanging wood falling.

2.4.3 Tree Work Specification

For template purposes only - include this section if appropriate for the guide title.

2.4.4 Tree Condition Assessment

This should include an illustration and checklist highlighting key points of a visual tree assessment.

Make mention of tree species, condition and how the nature of the work can affect the selection of anchor point. Mention different failure modes of trees - union failure, rotational / shear failure, etc.

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2.5 Work Methods

2.5.1 General

Use a 'decision tree' showing the process of selecting an appropriate tree access method, (including the decision to not climb where appropriate ref. ICoP p. 24). This should also include information on selecting an access method and planning a route or movement around the tree relating to the task.

2.5.2 Rope Installation

Please cover the pros and cons of each of the following (to include installation techniques and methods. We envisage the use of pictorial guides, so please sketch out or describe image sequences).

This should include notes on the differences between utilising isolated branches or multiple branches (e.g. lower 'drooping' branches of large conifers where isolation of a single branch will result in the rope sliding down).

Consider also SRT issues relating to canopy / basal tie-offs.

2.5.2.1 Rope throwing

2.5.2.2 Throw-lines and associated equipment

To include installation of climbing line, big-shot and other methods.

2.5.2.3 Use of extendable poles

This should cover use both at ground level and in the tree.

2.5.3 Ladders and steps

2.5.3.1 Types and inspection

e.g. extendable, step ladders, tripod, pulpit.

Refer to EN as appropriate, ladder checks and inspection on condition.

2.5.3.2 Setting up/taking down

2.5.3.3 Lowerable systems

2.5.3.4 Securing ladders

2.5.3.5 Working from ladders

2.5.4 Personal Fall Protection Systems

*This section should provide a general overview of personal fall protection systems
Introduce the forces involved in a fall and cover fall factors.*

Discuss work positioning, work restraint and fall arrest, and their application to aerial tree work

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2.6 Access & Work Positioning Techniques

It will be important to note whether a particular heading is dealing with an access method or a work positioning method. The industry is undergoing continual development, with new equipment and methodologies regularly being created and introduced; this should be reflected in this section as a whole without getting bogged down in specific items of equipment.

2.6.1 Double Rope Techniques

This should include anchor choice, back-up system, body thrusting, auto advancing systems plus illustrations, and mechanical friction devices, work positioning techniques for moving around the crown, re-directs, achieving and securing work position.

2.6.2 Stationary Rope Techniques

To include anchor choice, back-up system, foot locking, basal tie-off, and canopy tie-off, work positioning techniques for moving around the crown, redirects, achieving and securing work position.

2.6.3 Spiking

We would expect authors to include the need for a descent system and cutaway / soft link.

2.6.4 Motorised Access

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2.7 Equipment Selection and Use

To include examples of correct installation (illustrations). At the author's discretion, discuss equipment selection, compatibility and configuration for the equipment and techniques as highlighted in the ICoP section 2.11 [listed below], and as relevant to the intended readership.

2.7.1 General

2.7.2 Selection

2.7.3 Certification and conformity

2.7.4 Compatibility

2.7.5 Equipment Configuration

Indicate that a (CE) developed system is to be preferred over a random collection of components that have not been tested in a set configuration.

2.7.6 Loading Parameters

2.7.7 Manufacturers/Supplier Information

2.7.8 User Knowledge

2.7.9 Tree Access and Rescue Equipment

2.7.9.1 Ascending and descending devices

2.7.9.2 Back-up devices

This does not include belay devices

2.7.9.3 Connectors

To cover types and uses.

2.7.9.4 Rope and friction cord

This should cover rope diameters for climbing lines and friction hitches. There should also be a brief explanation of rope specifications, e.g. EN1891 Type A / B and rope types, with guidance on situations when one type might be preferred over another. (Criteria for selection and fibre properties)

2.7.9.5 Friction / cambium savers

Considerations when installing from the ground.

Choked slings & micro-pulleys.

Basic cambium savers / adjustable cambium savers.

Multi-anchor systems (equalising systems and dual / redundant systems).

'Home-made' cambium savers.

2.7.9.6 Harnesses

To include types and specification of use dependent upon conformity / certification.

2.7.9.7 Lanyards

2.7.9.8 Pulleys

2.7.9.9 Slings and strops

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2.8 Equipment Inspection, Care, Storage and Maintenance

2.8.1 General Procedures

Make the reader aware that they must read the manufacturers literature concerning storage, cleaning / maintenance and lifespan.

2.8.2 Textile and Hardware Components

Include any 'rule-of-thumb' information on storage and general care instructions such as keeping components away from harmful chemicals or UV degradation.

2.8.3 Equipment Lifespan

Refer to manufacturer's instructions.

2.8.4 Storage and Transport

Include any 'rule-of-thumb' / good practice information.

2.8.5 Marking and Traceability

Mention LOLER and any good practice methods of marking - give practical examples wherever possible.

2.8.6 Records

Mention LOLER, and highlight the need to keep the paperwork that comes with new equipment when bought.

2.8.7 Equipment Withdrawal, Equipment Modification and Alterations

Give practical examples of when equipment should be withdrawn from service, perhaps using a decision tree to help guide the reader through to making a decision regarding their equipment.

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2.9 Aerial Rescue

2.9.1 General

Advantages & disadvantages of (a) using of a safety line in the tree, (b) separate rescue kit, (c) individual kits (d) self-rescue.

2.9.2 Principal Considerations

Consider safety aspects and potential hazards; also the availability of equipment to be used for a rescue and how the tree could be accessed.

2.9.3 Rescue Plans

State the basic plan of action to take when carrying out an aerial rescue.

2.9.4 Safety Issues and Considerations

*E.G: Include a warning about the use of mechanical hitches when carrying out an aerial rescue as it is possible to descend too quickly with these devices (additional friction should often be included in the system to control descent).
If the climber is using a basal tie-off, the ground crew must know how to lower the casualty using an appropriate method; consider rope lengths required and equipment complexity, etc.*

2.9.5 Carrying Out a Rescue

[Section 2.9.5.x should make extensive use of imagery (sketches or photographs), so please describe the important points of the images or provide a rough sketch that highlights these areas.]

2.9.5.1 Self rescue

This should cover the use of a safety line whilst spiking, including the addition of a friction device when descending a single line.

2.9.5.2 Pick off / snatch

Highlight the requirement to create a direct connection between rescuer and harness. Cover the basic Method A & B rescues.

2.9.5.3 Counterbalance

Describe how the casualty's weight may affect the system.

2.9.5.4 Lifting / hauling

Show the use of hauling systems such as the Petzl Jag / Rock Exotica Aztec / et al can be used.

2.9.5.5 Using a belay system.

Creating a backed-up belay system.

2.9.5.6 MEWP Rescue

How to use a MEWP to rescue a casualty.

2.9.5.7 Casualty support and control

Using an adjustable lanyard to support the casualty.

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2.9.6 First Aid & Post Incident Actions

2.9.6.1 First Aid Certification

Climbers should hold a valid first aid certificate.

2.9.6.2 Basic First Aid

We must be careful not to turn this into a first aid manual, but should repeat some of the common checks such as ABC (airway, breathing, circulation), etc. Include the recovery position.

2.9.6.3 Suspected spinal / neck injuries

Climbers with suspected spinal / neck injuries will still need to be lowered carefully by several rescuers (if possible), with the emergency services preferring them to be laid directly on to a spinal board once they arrive at the scene.

2.9.6.4 Suspension trauma

Brief explanation of what suspension trauma is, and the effect it has on the body. State the actions to be taken (and not taken) with suspension trauma.

2.9.6.5 Actions after the event

Witness statements, preserving the scene where feasible, photographs and drawings, recording the accident (accident books, RIDDOR, etc.), quarantining equipment.

BIOSECURITY

Basic run through the precautions to be taken by climbers pre- and post-work.

3.0 Index