Project No: UK/09/LLP-LdV/TOI/163-210
Project Name: Evaluation and Implementation of Chainsaw Operators Certification

Report no.1: Summary of chainsaw accidents & trends in the UK

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West of mainland Europe, the UK has a temperate climate influenced by the surrounding Atlantic ocean. UK woodland (includes forests and other wooded areas in accordance with the FAO standard classification) represent approximately 12.2% of the land area (from the 2012, LUCAS survey), with 35% publicly and 65% privately owned. Approximately 40,000 people are employed in the tree-work sector, with a split of around 50% employed and 50% self-employed. The UK accident rate averaged 83 per 1000 employees over the period 2005-2010. Since the introduction of the Health & Safety at Work Act 1974, the Health & Safety Executive (HSE) collects statistics on workplace accidents.

General labour force information for 2009-2010, shows that over half of employers reported non-fatal injuries, whereas prior to this period, under-reporting was common. The rate of reporting has remained above 50% since 2005 and includes employed and self-employed (57% in 2010). Although an improvement from previously, this rate still represents significant under reporting.

The HSE website states that chainsaw accidents are mainly due to taking shortcuts and not complying with safety guidance to speed up the job. Accident statistics in tree work highlight the following:

- Between 1990 and 1996, 38 tree workers died (6 per year). During this period, 75% of accidents occurred to the self-employed.
- Between 2002 and 2012, 34 tree workers were killed. During this period 71% of accidents occurred to the self-employed (this includes 4 contractors unclassified).

These figures show a lower annual average fatality rate (3.4 per year) when compared to the pre-1996 5-yr period. The beginning of the decrease in chainsaw-related accidents also occurred from around 1996. Another factor to be considered is the introduction of the **independent assessment** for chainsaw operators (forestry in 1991 and arboriculture in 1992). Introduced in the UK by the National Proficiency Tests Council (NPTC), now City & Guilds, these had a lead-in period of three years. This independent assessment was a distinct change and an abandonment of the older practice of issuing attendance certificates on training courses, without any independent examination at the end of the course to clearly defined criteria. A verifiable system of assessment evolved and, by 1995, was adopted. The decrease

in accidents and fatalities may indicate, that independent assessment (or the introduction of assessment criteria) of chainsaw operators' competence may have been beneficial to workplace chainsaw safety in the UK. However, this was alongside an increase in mechanical forest harvesting methods, which could also have had an effect. Clarification through further research would be useful here taking into consideration other possible influencing factors. Current UK competence certification is regarded as a 'licence for life' although there is a requirement for refresher training. Re-certification requirements lead to skill maintenance and operators having a sensible attitude to chainsaw use.

Although the chainsaw use fatality rate post-1996 overall has reduced, other non-chainsaw related fatalities (e.g. falls from height) particularly within arboriculture, are becoming a concern that requires further investigation. The Forestry Commission's own statistics between 2007 and 2010 indicate that the rate of chainsaw accidents was two per year to their staff whilst, with private contractors the figure was three per year. In 2010/11, no Forestry Commission staff were reported injured, although two contractors were injured (personal communication). Other trends indicate higher accident rates within the private sector.

The main cause of death in UK tree work can be summarised as follows:

1) Being struck by a tree or part of a tree
2) Falling from a height
3) Being cut by chainsaw

Fifty percent of chainsaw related deaths occur during felling and crosscutting, whilst the remaining 50% occurs during section felling and pruning. **Arborists have the highest total fatality rate and older workers** (51-65 yrs) have an unacceptably high death rate. The safest age group appears to be the 30-50 year-old operators. Many non-professionals, such as agricultural contractors, classify themselves as arborists, therefore making it difficult to distinguish between professional and non-professional operators.

Further analysis indicates that the following are the highest risk activities:

1) Aerial use of the chainsaw (sectional felling & dismantling) 50% of accidents,
2) Windblown/Storm damage felling,
3) Felling of hung-up trees.

A number of falls occurred due to arborists not wearing the correct harness/ropes and most cases relate to shortcut taking. When shortcut categories are studied, it is clear that this is the underlying cause of 50% of fatalities to arborists. All deaths were probably preventable. The highest categories involved unsafe techniques/inexperience. In one case, an arborist's anchor point failed after cutting a large stem. In two cases arborists died directly from kickback where the saw was being used above shoulder height. Both bled to death from neck wounds. The death of arborists occurs mainly through falling or by bleeding to death and can be summarised as follows:

- Taking shortcuts i.e. not using PPE.
- Being in an unsafe position i.e. no risk assessment.
- Using an unsafe technique i.e. using chainsaw above head height.
- Lack of experience/competence for the situation i.e. supervision.
- Kickback.