

PURPOSE-BUILT TREE FELLING HAMMERS



Figure 1 (from left to right) - Scorpro shot filled hammer, standard Thorace shot filled hammer, modified Thorex hammer

Motor-manual tree fallers have a range of tools and techniques available to assist in felling trees against their natural lean or opposing wind. Most common is the hammer and wedge. Historically, the wedges were made of steel and were driven with a large maul or axe. In recent years, fallers have moved to lighter hammers and plastic or alloy wedges which are subsequently carried on the faller's waist-belt, allowing both hands to be free for carrying their chainsaw and fuel. These light hammers were designed as engineer's hammers, constructed with handles 30 cm long.

LIRO extensively trialled several modifications to the standard engineer's hammers, specifically targeting handle length.

Handles of 40, 50 and 60 cm long were trialled by experienced fallers in cable and ground-based logging operations. The 50 and 60 cm long handles did produce the highest impact to the wedge (best wedging power) but were awkward to carry in a waist-belt pouch. The 50 to 60 cm long handles also transmitted excessive vibration to the faller's hands.

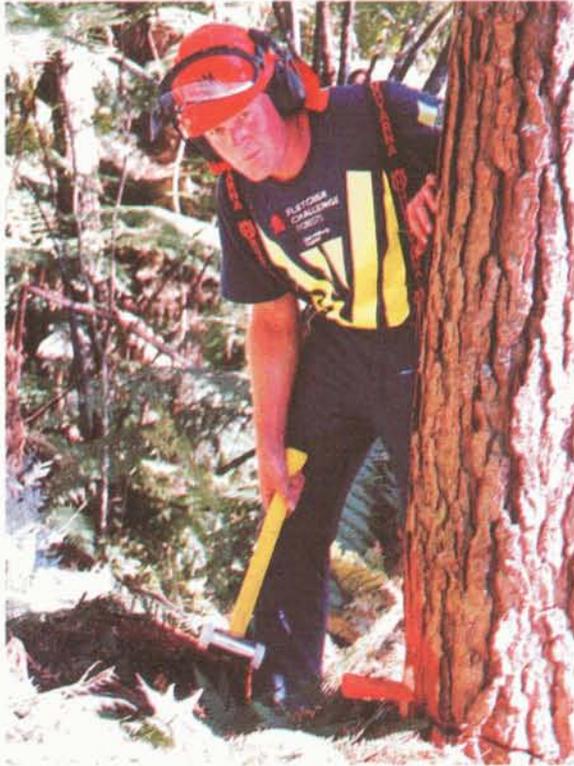


Figure 2 - Modified Thorex felling hammer

The general consensus was that fallers had good wedging power with the 40 cm handle and this length could be comfortably carried on the waist-belt.

The tree fallers commented that their old engineer's hammers were obsolete in comparison to the longer handled felling hammers. Further comments were that the longer handled hammers have the potential to:

- reduce back strain/injury, and reduce the likelihood of being struck in the face from wedges bouncing out of the kerf, due to a more upright posture while hammering
- reduce tree driving because of the faller's ability to wedge over heavier leaning trees
- reduce butt damage of side leaning trees - because of the faller's ability to hammer a wedge more tightly on the compression side of the tree and consequently make a more uniform hinge thus increasing value recovery
- reduce physical effort required to wedge over trees.

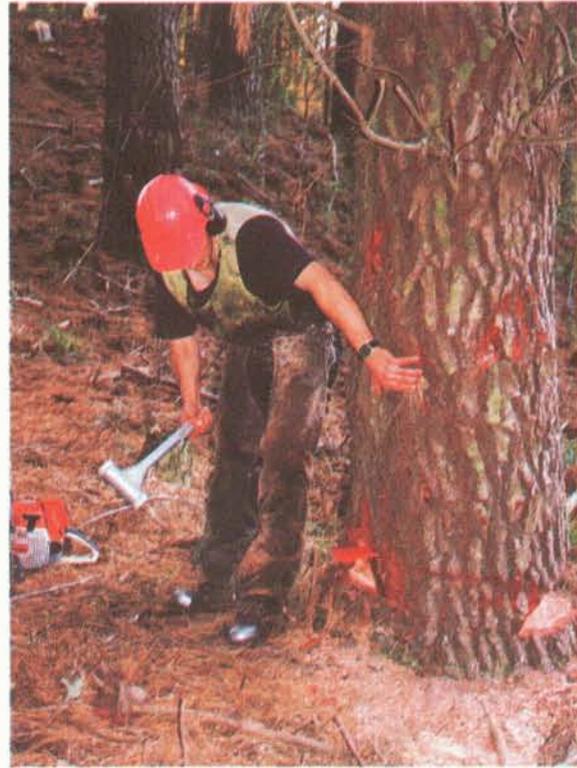


Figure 3 - Scorpro shot filled felling hammer

The Scorpro tree felling hammer was modelled from the concept of the long handled hammer and existing shot filled hammers. LIRO and a Rotorua-based engineer (Scorpro Engineering) designed a shot filled hammer, constructed of a machined alloy head and alloy tube handle. The shot in the head enables the hammer to be weighted according to the user's requirements and reduces hammer recoil. This hammer has proved most popular with the fallers trialling them.

For further information:

- Scorpro alloy shot filled felling hammers contact: *Scorpro Engineering and Development Company Limited, Rotorua* Ph (07) 348 4297
- Thorex hammer fitted with a plastic maul handle contact: *Forestry Services Napier* Ph (06) 847 3537

**Daniel Fraser,
Researcher.**

October, 1996