Save over 50% of the cost of traditional vegetation management in hard to access or high reach areas.

Trees in the Growth Limit Zone and Fall Drop Zone cause approximately one fifth of unplanned power outages[1]. Trees on road and rail networks can result in windfall closing networks or causing accidents.

Aerial Method – The HeliTrimmer has the following benefits:

- **Reduces the Health & Safety risk** to personnel. Tree climbers are not required and do not have to walk and use heavy equipment in remote terrain. Eliminates the use of heavy machinery, reducing rollover risk, eliminating access delays due to weather and eliminating damage to tracks and property.
- **Fast** – one-quarter of the time than mechanical equipment and one-20th of the time of a manual crew[2]. A power line right of way in a pine plantation can be cleared at approx. 320m per hour (a 3-man team manual team can do 2-15m per hour after gaining access). This reduces time for power outages and/or road closures and substantially reduces overall cost.
- **Safe operations** –Amalgamated Helicopters and HeliTrimmer take safety seriously. The following are available on request: Full hazard identification, risk management plan, Health & Safety Manual (Safety Management System), proof of Public Liability insurance, Standard Operating Procedures, Site Safety Briefing, Air and Groundcrew qualifications. HeliTrimmer will produce a site package that will include a site map, hazard identification and safety briefing in keeping with industry best practice. This will also save the customer time and money.
- **Effective** – using precision longline techniques the pilot can work to the Minimum Approach Distances (MAD as per NZECP 2001) on powerlines safely (minimum of 1m) and the HeliTrimmer can be used to selectively limb trees. The HeliTrimmer can change the length of the rope to address any tree or obstacle height. Overhanging branches are trimmed in very short lengths (approx. 50cm) which will allow it to fall through the line. If the branch is between 1-2m above the line a safety person with direct communication will be used to ensure the HeliTrimmer remains a safe distance away from the line.

[1] Statistic for Waikato from WEL Networks, https://www.wel.co.nz/safety-with-wel/powertreesandvegetation/
[2] Pilot program completed for Xcel Energy's Northern States Power Co, http://www.elp.com/articles/powergrid_international/print/volume-18/issue-01/features/vegetation-maintenance-airborne.html

- **Minimises environmental impact** – reduced access requirements, no track or pasture rectification, reduced time interrupting landowners. Environmentally certified – Amalgamated Helicopters are Aircare™ certified for Environmental Amenity Values and Noise Abatement. The helicopters are quiet with four-bladed tail-rotor or NOTAR technology reducing the noise footprint. When necessary, a ground crew can follow the helicopter to remove debris from roadways, waterways, fences and landscaped and maintained areas. In most cases, however, the debris is left on the rights of way to degrade on its own.
- **Cost Savings** – The HeliTrimmer will cost between 12% and 42% of traditional methods (see cost comparison for 1km of clearance below). This is achieved due to the speed and efficiency of the HeliTrimmer.

Overall, reduced Health & Safety risk, fewer workers, less equipment, minimised environmental impact. This results in significant operational cost savings and substantial time savings.

How does it work? The HeliTrimmer is specifically designed to limb trees in difficult to access areas. The pilot uses precision longline techniques to precisely position the HeliTrimmer. It is lowered directly down over the branches to limb and it effortlessly cuts the branches. Its design means branches and debris fall directly down (there is no flying debris), jammed saws are eliminated (due to cutting from above the branch). See a short video of a HeliTrimmer trial flight click here.

The pilot has two controls in the aircraft, one to engage and disengage the blades via an electrical clutch system, and the second is a kill switch that turns the engine off if required. For added safety, if the electrical system is interrupted for any reason the engine is turned off automatically.

The style of suspension increases the wind envelope the HeliTrimmer can be used in (the helicopter can face in to wind at all times), and protects the fatigue life on helicopter components as no vibration is transmitted to the helicopter.

For further information please contact
Scott McKenzie on 021 727734 or scott@pappus.co.nz

Read on for a cost comparison and frequently asked questions.

Cost comparison 1km of clearance

Distance 1000 metres

Manual 3-Man Ground Crew		**Heli-Trimmer (Std MD500E)**		Heli-Trimmer (Enviro MD600N)	
Daily Rate	$1,600.00	$14,100.00		$17,100.00	
Min Distance(m)/Day	10	750		750	
Max Distance(m)/Day	120	2500		2500	
Max number of days	100	1.33		1.33	
Min number of days	8.3	0.4		0.4	
			%Saving		%Saving
Max Cost	$160,000.00	$18,080.00	**88%**	$22,800.00	86%
Min Cost	$13,333.33	$5,640.00	**58%**	$6,840.00	49%

*Approximate cost. Helicopter daily flying calculated at 6 hours trimming per day and does not include transit flying.
MD600N is available for low noise impact with its no tail rotor (NOTAR) technology.

The Heli-Trimmer can **save 58-88%** of the cost of traditional trimming methods

Contact the Heli-Trimmer team now to see how you can eliminate power outages caused by trees, quickly and efficiently at up to 88%* of traditional costs

scott@pappus.co.nz **021 727 734**

Frequently Asked Questions

How is the HeliTrimmer controlled?

The HeliTrimmer hangs on a long-line underneath the helicopter and is manoeuvred in the same way as any helicopter load using precision longline techniques (pilot watching the load and placing the load accurately much like a competent crane driver. The pilot positions the HeliTrimmer over the branch and smoothly descends with the trimmer cutting effortlessly though branches. The HeliTrimmer rotates very slowly under gyroscopic force and this allows the pilot to line it up perpendicular to the branch and lower it. The HeliTrimmer has two pilot controls, one that engages and disengages the saw blades and another that cuts power to the engine immediately.

Can it get out of control?

No. The HeliTrimmer weighs 300kg and maintains its position when cutting. It does not kick out, spin uncontrollably or randomly. If electrical control is lost to the HeliTrimmer for any reason the engine automatically switches off.

How close to the power line can you operate?

The trimmer can safely operate to the Minimum Approach Distances in accordance with the Approved Code of Practice for Safety and Health in Tree Work PART 2: MAINTENANCE OF TREES AROUND POWER LINES and NZECP 34 2001. The pilot will not operate the HeliTrimmer closer than 1m of a power line if even when the power is out. It is rare to have to operate the HeliTrimmer close to the line laterally due to the design and cutting technique of the HeliTrimmer.

Can you cut overhanging branches?

If the branch is outside the Minimum Approach Distances our pilots can control the HeliTrimmer to cut overhangs. The overhanging branch is trimmed in very short lengths (approx. 50cm) which will allow it to fall through the line. If the branch is between 1-2m above the line a safety person with direct communication will be used to ensure the HeliTrimmer remains a safe distance away from the line.

It doesn't look safe.

The design is simple, easy to use, effective and above all, safe. The Helitrimmer has been under development for a number of years and has gone through several variations. The blade positioning means that debris falls directly down during cutting and is not flung out. There are electrical safety features built into the design so the HeliTrimmer can be shut-off under all circumstances, even loss of electrical control. The HeliTrimmer blades are only engaged as they approach the trimming site, well away from personnel. When required, a safety person with direct communication is used to ensure the HeliTrimmer remains a safe distance away from obstacles. Hazards have been identified and a full risk management plan has been developed. These are available on request along with any other safety documentation.

Does this help me reduce risk to personnel As Low As Reasonably Practicable (ALARP)?

Yes. This option assists you to reduce risk to workers (your own employees and contractors employed by you) to ALARP for a reduced cost. Tree climbers are not required and do not have to walk or drive and use heavy equipment in remote terrain. Eliminating the use of heavy machinery and vehicles reduces rollover risk, eliminates access delays due to weather and eliminates damage to tracks and property.

Why does it cost so much less than traditional methods?

The speed that the HeliTrimmer can cut saves a significant amount of time. Once in position, one 'pass' (descent) takes under 20-30 seconds and trims a 2m width. The HeliTrimmer can transit from the pickup point (from a trailer driven to a close landing zone) to the trimming area at 120km/h. See the cost comparison

What do you do with the debris?

In many cases the debris is left to degrade naturally. However, a follow-on crew can rig the branches and they can be flown out to a landing site to be chipped or piled for burning. When operating next to roads, railways, waterways, fences and landscaped and maintained areas debris

What happens if you damage fences with falling branches when trimming?

Every endeavour will be made to avoid damage to property. In most cases the branches will be trimmed into small pieces to minimise the chance of damage. Damage to fences are identified by the pilot and rectified by ground crew. Damage will be notified to the site manager and property owner and recorded on an incident report form.

What happens if the HeliTrimmer contacts power lines?

Use of an approved Safety Observer when branches are in close proximity ensures the HeliTrimmer is controlled so it will not contact power line. In all cases, the HeliTrimmer will be kept greater than one metre away from power lines. Lateral distance is easy to judge from above. If there are overhangs required to be trimmed, the vertical distance is surveyed before commencement of the trimming. For overhangs less than two metres (but greater than 1m) above the line, an approved Safety Observer is utilised who is in direct contact with the pilot ensuring the minimum distance is not infringed.

The cost comparison doesn't include ferry to the site. Won't this increase the cost?

Ferry is not included in the comparison so yes it will increase the cost. The HeliTrimmer is planning to conduct operations in regional areas that allows adjacent companies to share the ferry cost, reducing overall cost. In most areas, the overall cost will still be less than traditional methods.

Is it easy for you to become an approved contractor?

Yes. Amalgamated Helicopters are an approved contractor for many forestry and utility contracting companies. Their system allows you to easily view Health and Safety policies, Safety Management

Systems, Insurance policies, worker qualifications and much more. It also allows you to audit remotely at your convenience. Site audits are welcomed.

For further questions or information please contact

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