

KAINGAROA LOGGING COMPANY LIMITED

A SUMMARY OF 1982 WINDTHROW RECOVERY OPERATIONS

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1. Introduction

The Easter storm of 1982 caused widespread damage to timber stands in the Southern portion of Kaingaroa Forest. The Kaingaroa Logging Company Limited was duly allocated 1,059,000m³ by N.Z. Forest Service. This volume comprised 56% of the total Kaingaroa volume blown down and considered recoverable. Scattered blown trees covered a wide area and due to roading and recovery problems this volume was deemed un-recoverable.

Almost 80% of the Radiata allocation was located in Matea Forest near the south-eastern boundary of Kaingaroa Forest. Although this area is all old crop material, stocking was extremely high (approximately 800 stems/hectare) and therefore piece size quite low (about 2.25m³). It was these areas that proved the most difficult to recover due to the high breakage, and more importantly, the layers of heavily crossed stems.

The balance of the Radiata areas located nearer the Western Boundary were of lower stocking and proved to be easier to work.

The 353,000m³ of Minor Species allocation has been low priority recovery and apart from scattered areas of Contorta with a high breakage level, the main recovery of Minor Species (mainly Strobos) is just beginning.

2. Assessment

Initial volume predictions by N.Z. Forest Service for Radiata were overstated and were about 25% higher than the figures put forward by Kaingaroa Logging Company. After a re-assessment the volume from N.Z. Forest Service finally became about 30% below the Kaingaroa Logging Company figure. There were, of course, large areas of low damage and this tended to distort the position as it was rather unknown at the time if some of these could be recovered in the time available.

The Classification and typing of areas partly blown have proved most difficult and although a "feel" for the degree of blow can be gained from air photos, close field inspections are necessary.

The agreed Radiata figure of 706,000 m³ was expected to yield 55% of Sawlog material (338,000 m³).

3. Planning

Northern areas of the Matea damage were previously roaded and most landings had also been constructed. Compartments on the Southern boundary (Compartments 857-861) had no internal roading and the volume in these areas comprised 29% of the total Matea volume. Initial planning for roading in the flat areas of major windthrow (Compartment 860) was to construct roads at 200 metre intervals at right angles to the blow direction. Although this system was thought to be the most efficient for the eventual recovery, cutting road lines through the layers of material in isolation was extremely slow and expensive. A strip method whereby all recovery between the constructed road to the next proposed road was also tried, but progress was slow.

The most effective roading layout was to road parallel with the windthrow and construct 50m x 50m landings each side of the centre line at 160 metre intervals. Although this method requires a slightly higher landing density it does allow areas to be "opened up" quickly and therefore aid recovery time.

Fortunately, the blow direction coincided with the direction of two gully systems in Compartments 859 and 857 and roading was located on ridges and gully bottoms.

A major planning obstacle was that very little windblow had occurred on steep or hauler country. As Kaingaroa Logging Company normally operates 5 Hauler Crews, there were problems in placing haulers. Finishing off existing settings of both windthrow and pre-felled wood took almost 2 months and two mobile tower haulers were utilised at Tauhara for 6-8 weeks. In some cases, haulers were parked up and tractors normally used as back spars were used as hauling units. As a last resort to utilise manpower, haulers were sometimes used on topography suitable for tractors.

4. Recovery Techniques - Flat Country

It was clear from the outset that some Gang restructuring would be necessary as manpower requirements for windthrow is lower, due to the inability to pre-cut any further ahead than the next drag. Two additional Gangs were set up utilising surplus men and tractors destined for disposal were returned to the field.

A tractor-skidder combination was found to be the most effective in flat country. The tractor was used for "pioneering" tracks and stumping etc., and hauling when possible followed by the skidder as the main hauling unit. Grapple skidders proved ineffective in small diameter windthrow, problems were mainly in accumulation and break-out. However, where piece size was larger and sufficient for a one tree drag, grapples were extremely efficient and more productive than winch machines.

Generally, the "stepped" method of crosscutting was used, this afforded some protection to the cutter, especially when tension was inclined upwards. In situations that were potentially dangerous for the cutter the machine blade was used for holding down while cutting was completed.

The "snaking" of haul tracks was very noticeable in some areas and resulted largely from the excessive crossing and also the heaping of stumps.

6. Recovery Techniques - Steep Country

As explained earlier, only small areas of steep country were windthrown. In some steep gully systems where sufficient "lift" was available for a skyline operation, haulers proved satisfactory tools and positioning hauler tracks at right angles to the blow line was the preferred method. This required constant hauler shifts for parallel tracking but the Madill 071 was found to be an ideal unit.

Generally, due to the advantages in directional break-out tractors should be used wherever throw direction and topography suit.

6. Productivity and Costs

On flat country production targets were reduced by an average of 20% which in turn, increased costs by a slightly higher amount. It took a number of weeks for Gangs to get orientated to the changed work pattern required for windthrow. A lack of basic workstudy data for the conditions proved a problem and interim targets were issued while information was being recorded.

Allowances for working in windthrown areas was paid as previously agreed to in 1979, and a small increase in bonus payments was also agreed to.

Initially there was a wide variance in productivity between Kaingaroa Logging Company wage Gangs and Contractors working in similar conditions. However, once Crew numbers were adjusted to match windthrow conditions, the productivity gap between the parties closed considerably.

A man-hour production graph for Kaingaroa Logging Company Wage Crews is shown in Appendix I.

7. Safety and Training

The need for worker awareness as to the potential dangers of windthrow logging was recognised and an intensive training programme was instituted to cover the different techniques required. The graph in Appendix II shows the accident frequency rate for Kaingaroa Logging Company Wage Crews during the windthrow period, note the period of 8 weeks where not one off-work injury was recorded!

Unfortunately the statistics for Contractors accidents was marred by a fatality caused by a previously cut un-felled spar.

Partly blown conditions are of course, far more dangerous than 100% down. Broken spars are extremely hazardous as they tend to "sit" and scarffing is not always effective in determining the direction of felling.

8. Gang Numbers

Kaingaroa Logging Company Limited Gangs usually number 12 Wages Crews (4 doubles) and 12 Contract Crews (4 doubles). Additional crews from other Tasman operations were brought in to assist:

| | |
|---------|---|
| Rotoehu | 1 |
| Nelson | 1 |
| Tairua | 3 |

A number of Contractors were co-opted from Tauhara for short periods. At one stage 35 Crews were engaged on recovery operations.

9. Transport

As all the wood to be transported was at Matea a good deal of pressure was placed on the trucking fleet, the normal lead distance of 32 km was extended to 52 km. Tasman based owner-drivers from other areas assisted for varying periods.

10. Wood Storage

Although a water sprinkler yard was set up to store 30,000 tonnes of Sawlogs, differences arose with the Forest Owner regarding the facility and equipment was finally dismantled.

11. Markets and Wood Flow

Just prior to the Easter windblow an extended mechanical shut had caused pulp log stocks to reach a high level. This, together with a lower Mill usage during the windthrow recovery period and a further extended Mill shut during October-November 1982 has compounded our stock problem.

Sawlog markets have remained steady and a reciprocal supply arrangement between Tauhara and N.Z. Forest Service allowed Kaingaroa Logging Company produced wood to be railed to Thames from Murupara.

Kaingaroa Logging Company Limited has been the co-ordinator of the wood flow to these various plants and this has been both a demanding and frustrating task due to the ever-changing requirements.

12. SUMMARY

- a) The gravity of the disaster can often lead to panic situations and panic decisions in all aspects of a recovery operation.

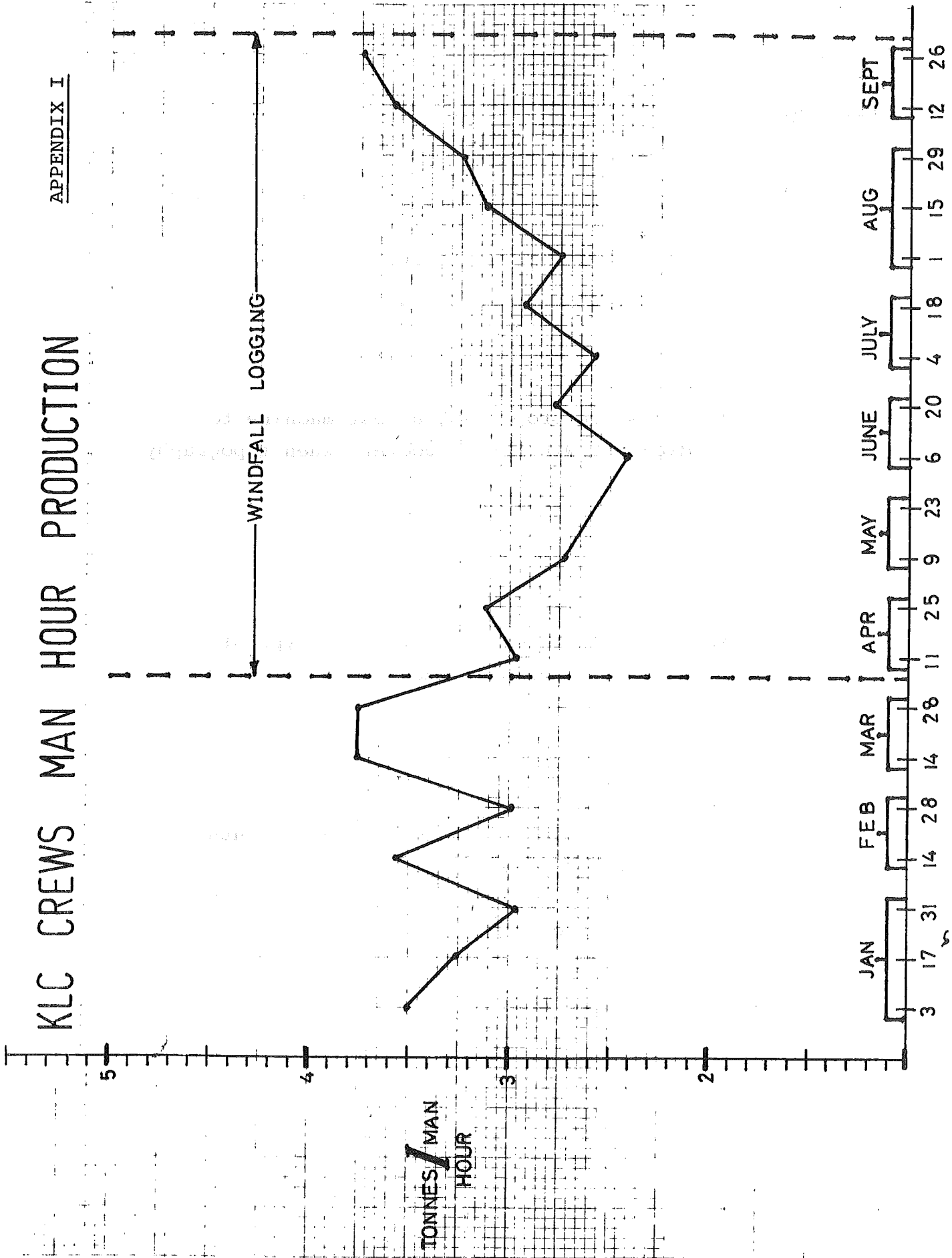
- b) Tractors are probably the best machine to handle most windthrow recovery when topography permits.

- c) Match available machines to suit type of windthrow, piece size and topography.

- d) Never under-estimate ongoing requirements for safety procedures and training. Constant reminders of the basic "do's and don'ts" is necessary.

KLC CREWS MAN HOUR PRODUCTION

APPENDIX I



APPENDIX II

KLL WAAGE GANUS ALLIUENI FREQUENCY RATES 1982 Jan—1982 Oct

