

LIMITED SCALE EXPORT LOGGING

P. Stitt
Tasman Forestry Limited

**How do we contact the woodlot owner?
How do we obtain the woodlot?**

Our operations are split in two functions that operate on a complementary basis, one being the log or woodlot purchaser, responsible for negotiation and acquisition of the woodlot. The other is the logging supervisor responsible for the setting of appropriate costs and supervision of the road, log, load and cart functions involved in removing the resource from the stump to the various utilisation points.

We employ a number of ways of contacting woodlot owners and securing their resource.

Door to door canvassing of an area identified as holding worthwhile resources would be one of our principle methods, in which there is a personal approach to the owner.

If upon assessment and negotiation an agreement favourable to both parties is obtained and the resource secured, a good job done will often result in the owner spreading the word. The loggers involved are likely to be favourably recommended to neighbours with a similar woodlot on their properties. Unfortunately we are often confronted with the old adage "once burnt twice shy", as in the past a sizeable volume spread amongst a number of owners has been removed without forthcoming payment and general disregard of the state in which the site is left.

In a number of cases it is purely a matter of a contractor being sighted logging in an area that establishes contact with other owners interested in selling their woodlot.

Another significant means of obtaining woodlot material is the landed sale basis whereby the contractor supplies from his self obtained resource to specific delivered points. This would account for 45% of the material obtained from our woodlot operations.

A large volume of the available material existing for possible purchase is owned or controlled by public bodies and Government departments, e.g. Boroughs, Counties, Catchment Authorities, N.Z.E.D., Maori Affairs, Forest Service, in which case the majority of this material is let to tender.



"..... general disregard of the state in which the site is left"

(LIRA Photo CN277/6)

We have in the past attempted to secure woodlots through advertising in agricultural publications and local newspapers but met with little success other than the odd tree in somebody's backyard. It became obvious that the personal approach was far more successful.

Over the previous four years we have concentrated our efforts on the Taupo, Waikato, B.O.P. area, over which there is a marked variation in the general availability of the resource. The Taupo area has little high quality material left other than that which is controlled by public bodies or government departments; in such areas we find private woodlot owners very willing to sell.

The Waikato, B.O.P. area we find a more plentiful resource although the willingness to sell is less forthcoming. Generally the owners are perhaps more affluent and in a number of cases confronted with a tax problem if they did sell. In such cases the time of year approached is often the dominant factor.

Log measures dealt with and conditions of sale can vary from area to area. We prefer to deal on a tonne or m³ extracted basis to which we apply a JHD conversion factor for export sales. We have found that within the Taupo, B.O.P. areas this is normally acceptable. In the Waikato there is a tendency to deal in sawn measures and lump sum payments, this probably arises from past native logging operations.

In our dealing appropriate consideration is given to water or Catchment Authority regulations, this being an influence as to whether we buy and if we do, how we log.

In all cases we are faced with competition for securement of the woodlot by both sawmillers in the areas and individual contractors.

**How we allocate crews, trucks, roading.
How we maintain work flows.**

We operate a small number of regular woodlot logging gangs with any increase in demand usually being met by drawing upon a pool of "landed sale contractors" supplying the company.

Ideally we attempt to operate a gang in a specific area and work the resource available on adjacent farms. This minimises the transportation of logging machinery which is a major cost component, especially in woodlots of limited volume. With cost being a constant consideration we have begun using, where possible, six wheeler flat deck transportation as opposed to conventional low bed transportation, and using small/medium logging and loading machines.

Log cartage is generally on a gang to gang basis, whereby one truck will service one or two particular logging units. The loader is usually supplied by the cartage contractor and would on average deal with a daily production ranging from 50 to 75 tonne. Due to low daily volumes it is not practical to operate large

loaders so in the majority of cases contractors are opting for 2 axle trailers to enable off-loading at the woodlot. Where possible we attempt to limit empty running thus increasing truck utilisation, but due to the widespread dispersion of woodlot gangs at any one time this does prove difficult to maintain.

The majority of our operations concern farm lot situations on rolling to extreme terrain predominantly in clay/pumice soils. A limited amount of access work is required, mainly upgrading existing farm tracks, the major component being tracking to individual stands of trees so as to facilitate extraction to an accessible skid site. Given this situation machine preference is largely for a versatile track machine as opposed to rubber tyred skidder. We find that our gangs are using D7-17A and HD11's; these machines are available at low capital value and exhibit good climbing ability.

We find it convenient to have contractors residing in decentralised locations within an operating radius of 100 km. Apart from the travel time advantages involved it also enables them to monitor the weather conditions in the area in regard to log cartage and access and also maintain a reasonable rapport with the owners.

Reaction time frames from obtaining woodlot to completion of same. Logging to delivery point delays.

Access from public roads to woodlot skid sites is a crucial factor in determining time frames of individual woodlot operation. Due to volumes involved, cost of the construction of all weather access to skid sites is seldom justifiable. With the arrival of the wetter part of the year it is often necessary to assist trucks from skid to road. In doing so this limits time that could be spent logging and also increases the cartage contractor's cycle time. Unfortunately many of the most accessible woodlots that could have been suitable for winter logging have been cut over previous years. This leaves us with few options in differentiating winter versus summer sites and ultimately pushes costs up and values down.

In a number of cases owners do not take a favourable view of operating their areas during winter months due to increased land damage which is inevitable in wetter conditions. The use of an arch will (possibly) reduce this damage but has a disadvantage in tight areas and uphill pulling.

Machine breakdown, both tractor and loader, often cause delays. Due to general low capital value of machines, mechanical condition is not always good. Down time on extraction equipment has obvious effects on production but perhaps is not as crucial as the same delays with the loader. During summer months the logs become especially susceptible to fungal and insect infestation, namely sapstain, peniophora and hylastes, rendering them non merchantable as export or sawlog. Unless logs are moved on a regular basis this risk is high. Conversely during the winter months although the environment is not as favourable to decay or infestation,

when access is not reliable a loader breakdown coupled with a following wet period may mean the logs sit on the skid for an equally long period.

Because the export from Tasman woodlots is a supplementary operation to export production from Tasman's forests, it is also liable to the same influences that effect the specification of the total sale.

Tasman export sales are based on a specification of 65% 12.1 m logs and 35% 8.1 m logs achieving an average small end diameter of 33 cm. This specification is becoming difficult to obtain from the remaining farm woodlots. We are still managing to supply a 33 cm log but realisable volume of export in most woodlots is typically less than in earlier years. The longer term may see an improved size and quality of woodlot which will reduce relative costs and increase log values.

Woodlot values are dictated by market demand, in this case the demand for export grade logs; the higher the percentage of the grade the greater the value. Size of woodlot and its location in regard to other woodlots will also influence its value.

Distance from export point and arisings markets will have considerable bearing on the feasibility of purchase and therefore the relative values of each wood type.

In many areas the resource is being relogged, with the removal of a residue of log types inferior to the original resource. This of course has the effect of lowering woodlot values.

If access is expensive it must be offset against value of the woodlot being entered.

Time frames involved between negotiation and purchase are principally dependent on the woodlot owners acceptance of the proposal. The reaction time between purchase and commencement of logging will depend upon the preference of the owner, the ability to sell the arisings and gang availability. Logging commencement and completion is relative to woodlot size, production levels and weather. Normally the average woodlot in the Taupo area would take 4-6 weeks to complete and clean up.

If the owners wish to sell but not have the woodlot logged immediately, we would enter into a cutting right agreement. This allows the facility to forward purchase and plan woodlot cutting programmes.

Contractor Situation

The majority of our gangs are comprised of three men, one of whom is the principal contractor. Low capital component crews with a minimum labour content are the most cost effective in the common woodlot situation today. (For example, low total volume per woodlot, difficult access, low component of high value logs and high log preparation times.) Labour content is often balanced as much to machine or loader/truck/market constraints, as pure gang production.

Many of the contractors employed on woodlot operations have had experience in native logging and as is necessary, exhibit good skills in felling techniques and machine handling, principally directional felling and blade work. They are often faced with trees in precarious locations that may require, for example, felling away from roadways, streams, farm buildings or power lines. Similarly there is often a requirement for individual tracking to trees on extreme slopes in wet unstable conditions.

Continuity of work is an uncertain factor in woodlot logging. When combined with fluctuating demand levels this means that the reliability of cash flow also becomes uncertain. We therefore find it best to deal with contractors who are in a freehold situation.

It is essential that the contractor and the woodlot owner have an affable working relationship in each individual operation. As mentioned one well completed logging job normally leads to the availability of another.

**Types of arisings compared to plantation forests.
Tree and log characteristics and ramification of these.**

Generally speaking the majority of woodlots worked are farm based. When in an open grown, scattered or windrow situation they tend to exhibit a high pulp and inferior to average sawlog component. This type of woodlot will normally yield a figure in the vicinity of 0-20 percent of export grade logs, the balance being sawlog and pulp with the pulp component usually the largest component. This inevitably results in a lower average value per tonne of logs than plantations of managed forest or large consolidated woodlots.



"....they tend to exhibit a high pulp and inferior to average sawlog component..."

(LIRA Photo CN295/11)

We do supply a number of sawmills in the Rotorua and Waikato areas with a run of the bush sawlog having the characteristics of being clean on one side and defective on the other. Depending upon the existing resource in the sawmills area and the sawn markets at the time, the sawlog specification can wander in and out of the pulp log spec. This factor will dictate the split of sawlog and pulp arisings from the woodlot.

Apart from the occasional small plantation, woodlots could normally be classified as being either shelter windrow or scattered natural regeneration. Provided the windrow woodlot has been planted four or more trees deep it will often yield a reasonable amount of export logs from its interior rows, with the outer rows usually yielding, provided length can be obtained, a clean sawlog from the butts. The remainder of the outer edge trees will give a rougher sawlog and pulp material dependent upon branch size, type and position around the stem.

A scattered open grown woodlot will because of less desirable tree characteristics yield little to no export. It is more likely to yield predominantly pulp and varying grade sawlogs.

Excessive taper and nodal swelling is often found in these trees resulting in a large decrease in diameter over short lengths of log. These characteristics have negative effects on sawmill recovery factors and degrade log values.

Export logs are sold to our customers in Japanese Haakon Dahl measure - the measure of JHD is determined through small end diameter measurement and log length. Because the form of an old crop woodlot tree is generally inferior to a typical plantation or forest grown stem which has been silviculturally tended and is more tightly grown it is found that in the majority of cases it does not convert as favourably from tonnes to JHD, mainly due to taper.

Woodlots that have been exposed to a ground fire and minor stem damage at some stage usually contain a fire ring round the bottom of the tree. This has the result of putting that part of the tree outside the export and sawlog specifications, and often renders the tree susceptible to termite attack. Certain known locations have a high incidence of termite infestation in standing trees. This also reduces log values.

Arisings Market

Markets for other log types are purely dependent on the demand at the time. Last year it was difficult to sell a low grade sawlog whereas presently the market is quite receptive. Due to the scattered location of woodlots and their varied distances from sawmills and pulp plants the viability of carting logs of low value, over long distances, at high cost becomes marginal.

This point is relevant to the woodlot owner in that the true value of the woodlot is determined by the amount of export material in it and the ratio of export logs compared to arisings log grades, rather than its total volume. Due to their mobility, portable sawmills may offer an alternative in marginal situations.

Any especially distinctive features which separate woodlot logging from plantation logging.

In a plantation situation the volume base is large whereas with a woodlot it is small, therefore given access costs and limited production rates the unit cost of woodlot logging is high.

Export component is low and arisings high, with log form differing from typical high volume plantation stands (tree form and taper).

Access is expensive and unreliable.

Given export, sawmill and pulp plant production/demand constraints, a woodlot does not have the flexibility to vary production of specific wood types or specifications.

Environmental considerations are of more influence where the logging is often carried out in erosion sensitive areas or on valuable agricultural land.

Forests are normally strategically located with considerable consideration being given regarding their end use utilisation points. Woodlots on the other hand are located randomly often involving excessive transport distances to reach these points. Typically woodlot revenue was a secondary requirement when the farmer decided to establish trees.

SUMMARY

1. Export grade logs optimise return to grower.
2. Ratio of export grade logs to arisings is crucial.
3. All log values are market driven.
4. Location, topography, accessibility, size are important.
5. Stocking density and tree size, length and quality are important.
6. Compared to plantation logging, woodlot operational costs are high. Low capital investment in machinery and minimum manpower costs are the usual solution in obtaining the optimum log grade outturn and dollar return to the owner. High road maintenance cost for an extended period may preclude this in some instances.
7. Export logs do not require pruning so long as their knot size does not exceed 6" (15 cm) at the collar.
8. Woodlots should be left to mature long enough to produce 12 m logs with small end diameters of 13" (33 cm) or better.
9. The bigger the woodlot the better. A shelter belt is one woodlot but a small forest is the best woodlot.