

WHAT A LOGGING CONTRACTOR NEEDS TO SHOW A PROFIT

by

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ABSTRACT: Describes contractor's operating techniques with a cut-to-length harvesting system in Western Washington. Examples are provided. Seven points needed for contractor profits are examined: dedicated trained workforce; large available landbase; fair logging and trucking rates; machines built for job; good maintenance program; keeping good cost records; and good roads.

KEY WORDS--Cut-to-length, harvesting, thinning, operating techniques, contractor, profit, harvester, forwarder.

INTRODUCTION

I have been in the business of logging for about 24 years. The last 9 years have been with a cut-to-length system. About 95% of the work has been commercial thinning and about 5% in clearcuts and right-of-way logging.

I got into thinning for two reasons: there was too much competition in clearcut logging, and I could see a brighter future in thinning. A lot of timber needed to be thinned and nobody was doing it.

Logging in the coastal areas in Washington can be a real challenge; so, we developed some ways to thin the broken up ground. Four examples are briefly described below to show operating techniques and layout patterns.

EXAMPLE 1: Downhill Forwarding

When two truck roads come together, the upper truck road can be used for a return road (see Figure 1). This means that the harvester and the forwarder can

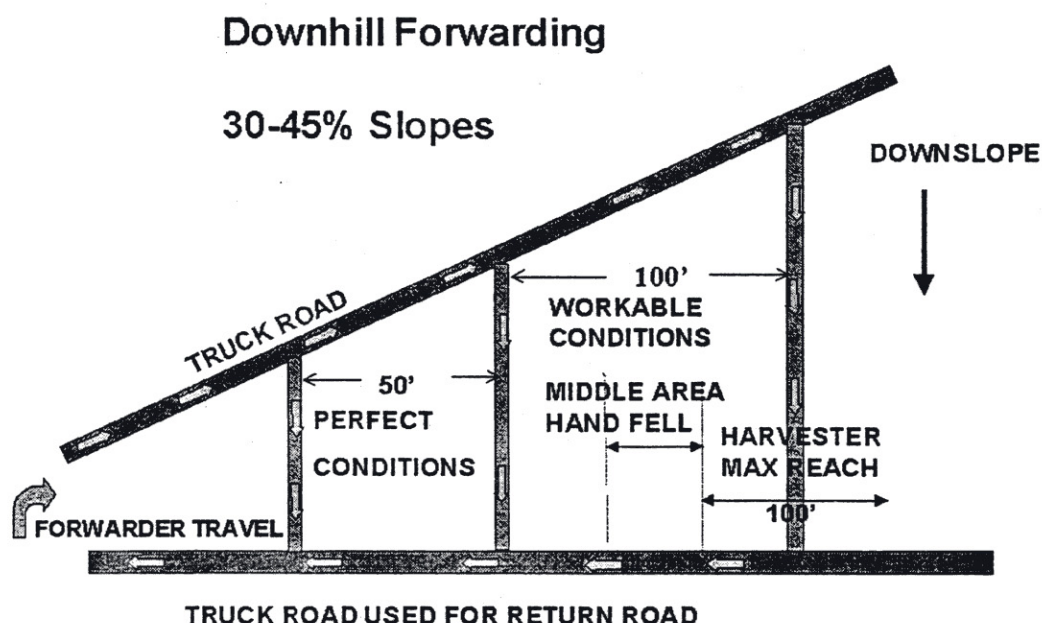


Figure 1. Downhill forwarding.

use the upper truck road to get on top and work down the hill.

Before cutting is started, forwarder roads must be laid out to be sure there is clear passage to the lower truck road. If the forwarder roads are about 50 feet apart, they will work well. However, if they are wider, the timber not reachable in the center must be hand felled towards either forwarder road and then later processed.

EXAMPLE 2: Return Roads

If there is a unit where there are one or two ways to access the top of the hill and the top is flat enough to drive across, return roads can work quite well. In many cases there will be old cat trails leading to the top. As always, forwarder roads must be laid out before cutting

starts. Sometimes the forwarder will be able to back up the hill instead of using a return road, this will save a lot of time (see Figure 2).

When the harvester reaches the lower truck road, logs will be placed in the ditch. This does two things; keeps the ditch from being filled with dirt, and makes it easier to drive onto the truck road. *High cutbanks are difficult problems.*

EXAMPLE 3: Uphill Forwarding

It is always tough when faced with uphill forwarding. Logs slide off the load, the forwarder gets stuck, or the machine just runs out of power. So we found ways that will work in some cases. If there are places where the hill is not

HOW RETURN ROADS WORK

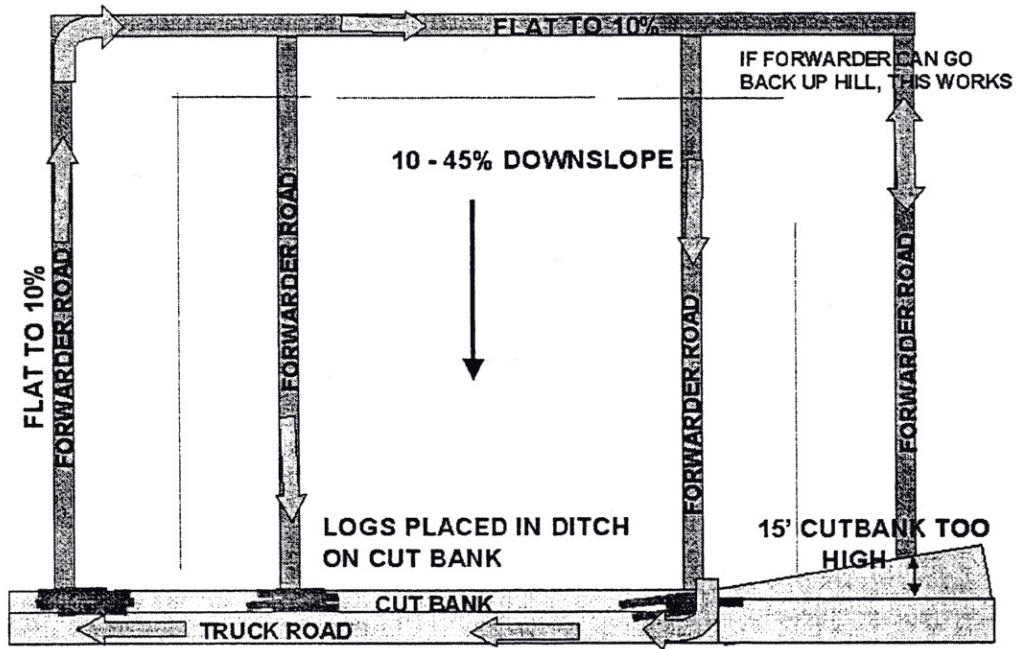


Figure 2. Return roads.

over 30%, they can be used for a main forwarder road going uphill. Lay out and cut the main forwarder road first, then forward the logs. If the forwarder can climb uphill without any problems, the rest of the unit can be cut and forwarded down the hill, of course, downhill roads must connect with the main forwarder road that goes up the hill (see Figure 3).

As in Example 2 you may find old cat trails that will work well for the main forwarder road uphill.

EXAMPLE 4: Benches

When thinning benches (benches are like stairs in your house), forwarder roads can be laid out along the bottom and the top of the bench. Machine cut all that

can be reached from top and bottom, then hand fall the remainder (Figure 4). The steeper the bench, the better the hand fell trees will slide to the bottom.

CONTRACTOR NEEDS FOR A PROFIT

I was requested to list what contractors need for systems like mine. This is what a contractor needs to show a profit:

1. Dedicated Well-Trained People

An excellent source of well-trained people is the Forestry Training School located in Forks, Washington. Even after the training school, I feel that it takes about 1-2 years for operators to get to 100% productivity. Without the training

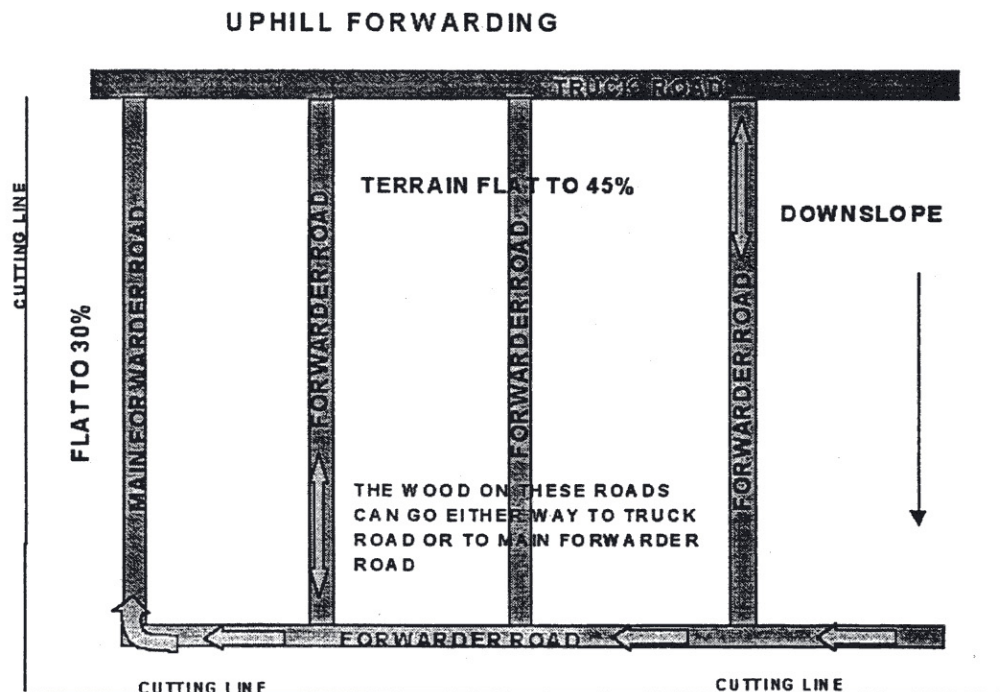


Figure 3. Uphill forwarding.

THINNING BENCHES (side view)

Cut everything that can be reached from the top and bottom. Then hand fall the rest. In some cases, the steeper the better-trees will slide to the bottom when hand fell.

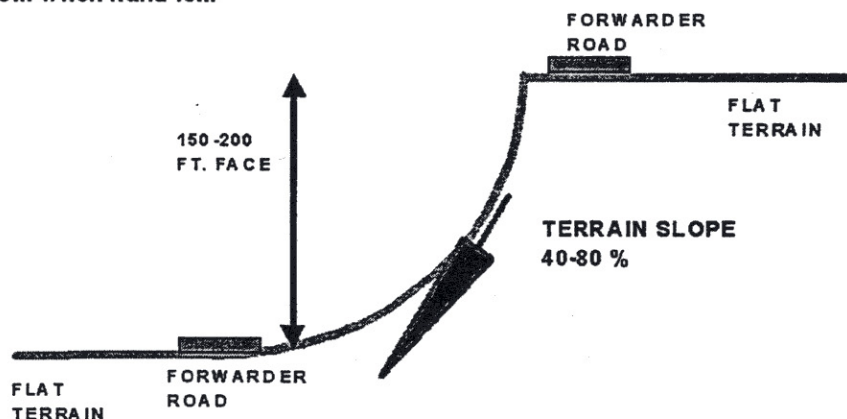


Figure 4. Thinning benches.

school education, you can plan on at least one year of total frustration! Operators will bend saw bars at the rate of about 4 per day--not to mention the lack of production. The leave tree damage will be very high and often the wrong tree will be cut. I found that the cost of training harvester operators is in the area of \$100,000--most of the cost is in lost productivity.

2. Large Available Land Base

A large available land base is needed. One good cut-to-length side will thin approximately 1000 acres per year. I have found the best timber to thin is that which was precommercially thinned and is now 30-40 year old. At this age, the trees are the right size for the machines we use. We usually thin to 150-170 trees per acre. Also, finding the ground free from old-growth stumps and windfalls is especially helpful. We produce a lot more when the machines are not fighting through such debris.

3. Fair Logging and Trucking Rates

Surely two of the most important factors are fair logging and trucking rates. A contract logger and trucker should know their costs. I feel that 15% for profit and risk is not out of line.

When bidding a job, ask about quotas. If there is a quota, base your price on the limit of the quota.

4. Machines Built Strictly for the Job

I have found rubber-tired, bogie type machines work the best. The bogie system allows the machine to crawl over tree roots, stumps, and old logs without any problem. Specially built track type machines will work alright, but the tracks seem to do more damage to tree roots and the soil. I feel the excavator type will not work well in thinning due to the tailswing.

5. A Good Maintenance Program

Maintenance on these machines is a must to prevent costly downtime. On average, your operator will spend one hour per day on routine maintenance, such as greasing, changing weak hoses, maintaining saw bars and chains, checking fluid levels and changing oils. Our operators also look for cracks, loose bolts or anything that might cause a problem. If you keep up with the little everyday problems, your machine will give more service during the work week.

I keep a two ton shop truck on-site complete with a welder, cutting torch, air compressor, air tools, crane, and over \$10,000 in hand tools. Each machine carries a small set of tools available at all times.

In the shop truck we carry nearly \$30,000 in spare parts--including hydraulic hoses, hydraulic cylinders, fittings, cylinder packing, electrical parts, nuts and bolts, saw bars and saw chains.

At the shop, we have approximately \$40,000 in spare parts available.

When a part is used, it is reordered for stock. We do 99% of our repairs. Repairs involving large hydraulic cylinders, hydraulic pumps, motors and transmissions are sent out.

We have a complete hydraulic hose room where metric and standard hoses can be made up. The hoses have numbered identification which corresponds with a chart in the shop. This way if you see a bad hose, you can look in our spare hoses to see if we have it. If we do not have the hose, it will be made up that night. We carry just about every hose needed on each machine.

We also grind and make up all of our saw chains. The saw bars are straightened, tips replaced, and rails shaped-up at the shop. Ten bars and 30 chains are kept on hand at all times.

6. Keeping Good Cost Records

We keep records on all machines and this starts with the operators. They have a daily time card to fill out about the machine, such as, the amount of fuel they burn per day, hydraulic oil used, motor oil used, name of job, how many hours the machine actually worked, how much time was spent on maintenance, what type of maintenance was done, and any reoccurring maintenance problems. This information is turned into the office on a weekly basis. The office staff enters the information into the computer along with employee wages, taxes, benefits, insurance, depreciation and parts cost. Our computer program from Office Equipment Company

gives us a cost on each machine. We have to manually divide the hours into the costs to see the cost per hour. Weekly production records are kept, and at the end of each job, the total production in tons is divided into the total costs to calculate the cost per ton. This lets me know if I bid the job right!

At the start of each job, I let the crew know how many tons per week are needed. If we reach that number, a bonus is given. This approach seems to help things run smoothly.

7. Good Road Systems:

Finally and just as important are the road systems which allow raw products to be delivered to the mill safely and swiftly. Since we contract all of our trucking, it is important that the trucks keep coming back. If the road systems are poor and trucks get stuck, tip over or tear parts off, trucking contractors will find another job. I have been on jobs where the roads were bad and we had to pull the trucks out. This costs the logger and the trucker. It just makes for better working relations when road systems are good.

CONCLUSION

If I had it to do it all over again, I would not change a thing!

THE AUTHOR

Fred Pleines is owner/operator of Pleines Logging, Forks, WA.