

Increasing value and reducing
costs through hauling longer logs
– A preliminary look

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- The Oregon forest to mill transportation sector spends an estimated \$200+ million per year.



Potential areas of savings

- Truck Scheduling
 - Use of GPS technology, truck assignment
- Reduce road construction costs
 - Evaluate road building standards
 - Recycling rock
- Reduce moisture in logs
- Single wide tires
- Exempt forest industry from catalytic converters
- Transporting longer logs

Transporting Longer Logs

	Legal Weight	Permitted Weight
Gross	80,000	105,500
Tandem	34,000	34,000
Single	20,000	20,500
Length	65'	75'
Restrictions	Few	Multiple

The Federal Bridge Formula

$$W = 500[(LN / N-1) + 12N + 36]$$

W = The maximum weight in pounds that can be carried on a group of two or more axles to the nearest 500 pounds

L = The spacing in feet between the outer axles of any two or more consecutive axles

N = The number of axles being considered.

Measure the axle spacing from the first to last axle in the combination

Permit Weight Table 2

- For heavier divisible loads

The loaded weight of a group of axles, vehicles, or combination of vehicles shall not exceed that specified in this permit weight table or any of the following:

- The manufacturer's side wall tire rating but not to exceed 600 pounds per inch of tire width;
- 21,500 pounds per single axle
- 34,000 pounds per tandem axle
- The weight shown on the permit; and
- The sum of the permissible axle, tandem axle, or group axle weight, whichever is less.



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PERMIT WEIGHT TABLE

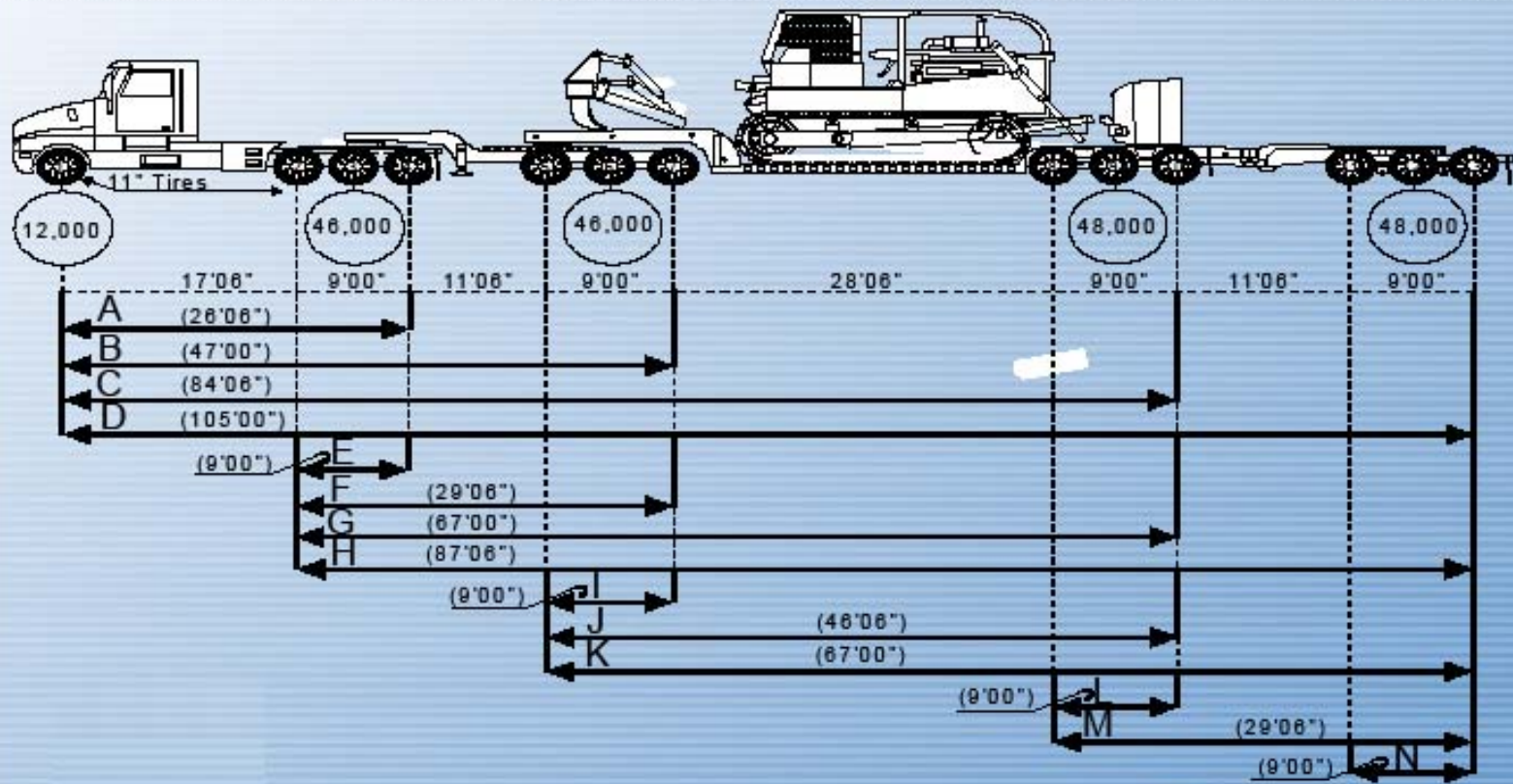
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WHEELBASE	5 Axles	6 Axles	7 Axles	8 or More Axles
47	77500	81000	81000	81000
48	78000	82000	82000	82000
49	78500	83000	83000	83000
50	79000	84000	84000	84000
51	80000	84500	85000	85000
52	80500	85000	86000	86000
53	81000	86000	87000	87000
54	81500	86500	88000	91000
55	82500	87000	89000	92000
56	83000	87500	90000	93000
57	83500	88000	91000	94000
58	84000	89000	92000	95000
59	85000	89500	93000	96000
60	85500	90000	94000	97000
61	86000	90500	95000	98000
62	87000	91000	96000	99000
63	87500	92000	97000	100000
64	88000	92500	97500	101000
65	88500	93000	98000	102000
66	89000	93500	98500	103000
67	90000	94000	99000	104000
68	90000	95000	99500	105000
69	90000	95500	100000	105500
70	90000	96000	101000	105500
71	90000	96500	101500	105500
72	90000	96500	102000	105500
73	90000	96500	102500	105500
74	90000	96500	103000	105500
75	90000	96500	104000	105500
76	90000	96500	104500	105500
77	90000	96500	105000	105500
78	90000	96500	105500	105500

See Weight Table 1, if using less than five axles or 47 feet wheelbase.

Heavy Haul Axles

Example of a large combination and the various axle groups that must be considered



5 Axle Standard Combination

		Maximum Weight Allowed Using	
Axle Groups	Wheelbase Spacings	Permit Weight Table 1	Weight Table 2 By Permit
1 - 3	21' 06"	52,500	52,500
1 - 5	50' 06"	80,000	80,000
2 - 3	4' 00"	34,000	34,000
2 - 5	33' 00"	68,000	68,000
4 - 5	4' 00"	34,000	34,000

8 Axle Heavy Combination

		Maximum Weight Allowed Using	
Axle Groups	Wheelbase Spacings	Permit Weight Table 1	Weight Table 2 By Permit
1 - 2	9' 00"	39,000	39,000
1 - 3	13' 00"	45,500	45,500
1 - 5	21' 06"	61,500	61,500
1 - 7	60' 06"	** 80,000	95,000
1 - 8	67' 00"	** 80,000	104,000
2 - 3	4' 00"	34,000	34,000
2 - 5	12' 06"	50,500	50,500
2 - 7	51' 06"	** 80,000	85,000
2 - 8	58' 00"	** 80,000	92,000
3 - 5	8' 06"	42,500	42,500
3 - 7	47' 06"	78,000	78,000
3 - 8	54' 00"	** 80,000	86,500
4 - 5	4' 00"	34,000	34,000
4 - 7	43' 00"	70,500	70,500
4 - 8	49' 06"	79,000	79,000
6 - 7	4' 00"	34,000	34,000
6 - 8	10' 06"	44,000	44,000

The Benefits

Case		1	2	3	4	5
Axle Spacing		5-axles	6-axles	6-axles	7-axles	8-axles
1-2		17.5	9	9	9	9
2-3		4	8.5	8.5	8.5	4
3-4		25	4	4	4	4.5
4-5		4	25	31	31	4
5-6			4	4	4	31
6-7					6.5	4
7-8						6.5
Total Wheelbase		50.5	50.5	56.5	63	63
Bunk to Bunk		35	37	45	38	43
Gross Load		80,000	84,500	88,000	96,000	102,000
Tare Weight		27,000	28,000	28,000	30,000	32,000
Net Load		53,000	56,500	60,000	66,000	70,000
Percentage Increase		Base	6.6%	13.2%	24.5%	32.1%

More Benefits

Case		1	2	3	4	5
		5-axles	6-axles	6-axles	7-axles	8-axles
Ownership, \$/hr		\$17.83	\$19.08	\$19.08	\$20.45	\$21.82
Operating, \$/hr		\$34.41	\$38.37	\$40.64	\$46.39	\$49.96
Labor, \$/hr		\$25.78	\$25.78	\$25.78	\$25.78	\$25.78
Cost per Ton						
2-trips		\$12.52	\$12.50	\$12.07	\$11.86	11.76
3-trips		\$8.59	\$8.57	\$8.27	\$8.11	\$8.05
4-trips		\$6.63	\$6.61	\$6.37	\$6.24	\$6.19

Other Considerations

- Impacts on Value Recovery
- Log Loading and Unloading
- Off-tracking
- County Restrictions
 - Bridges
 - Curve Radius



Questions?

