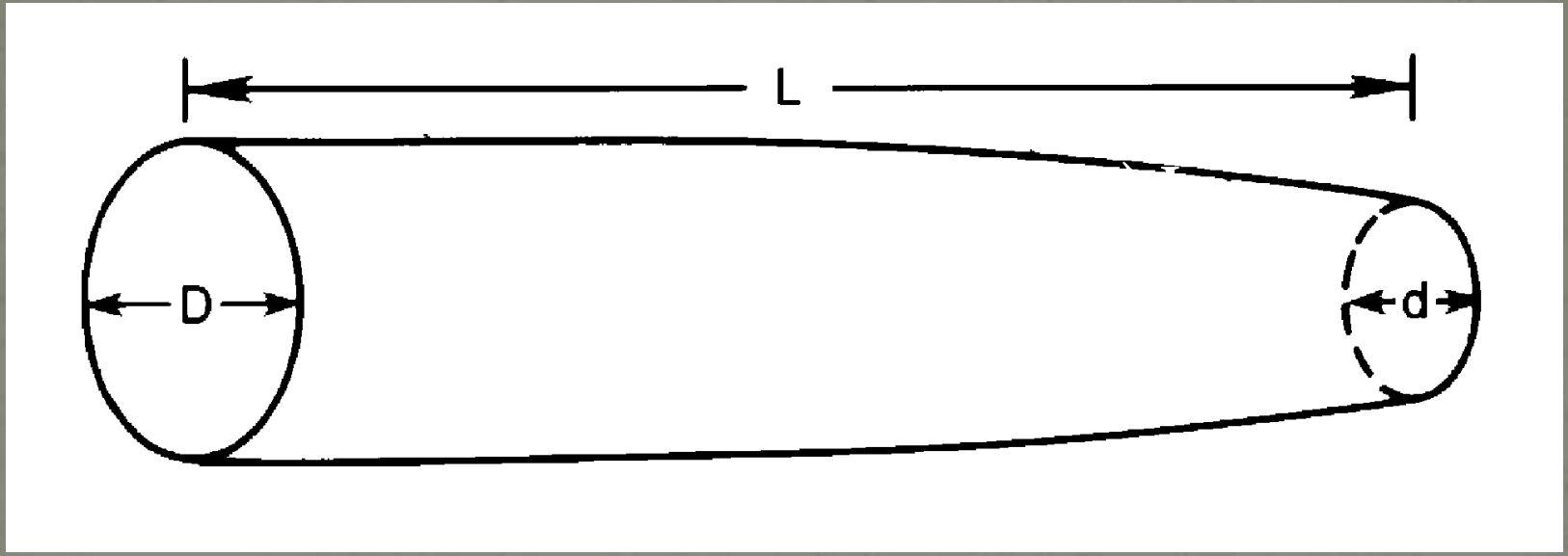
Cubic Scaling

What it Means for Suppliers

Cubic Volume

Frustrum of a Paraboloid



Cubic Volume

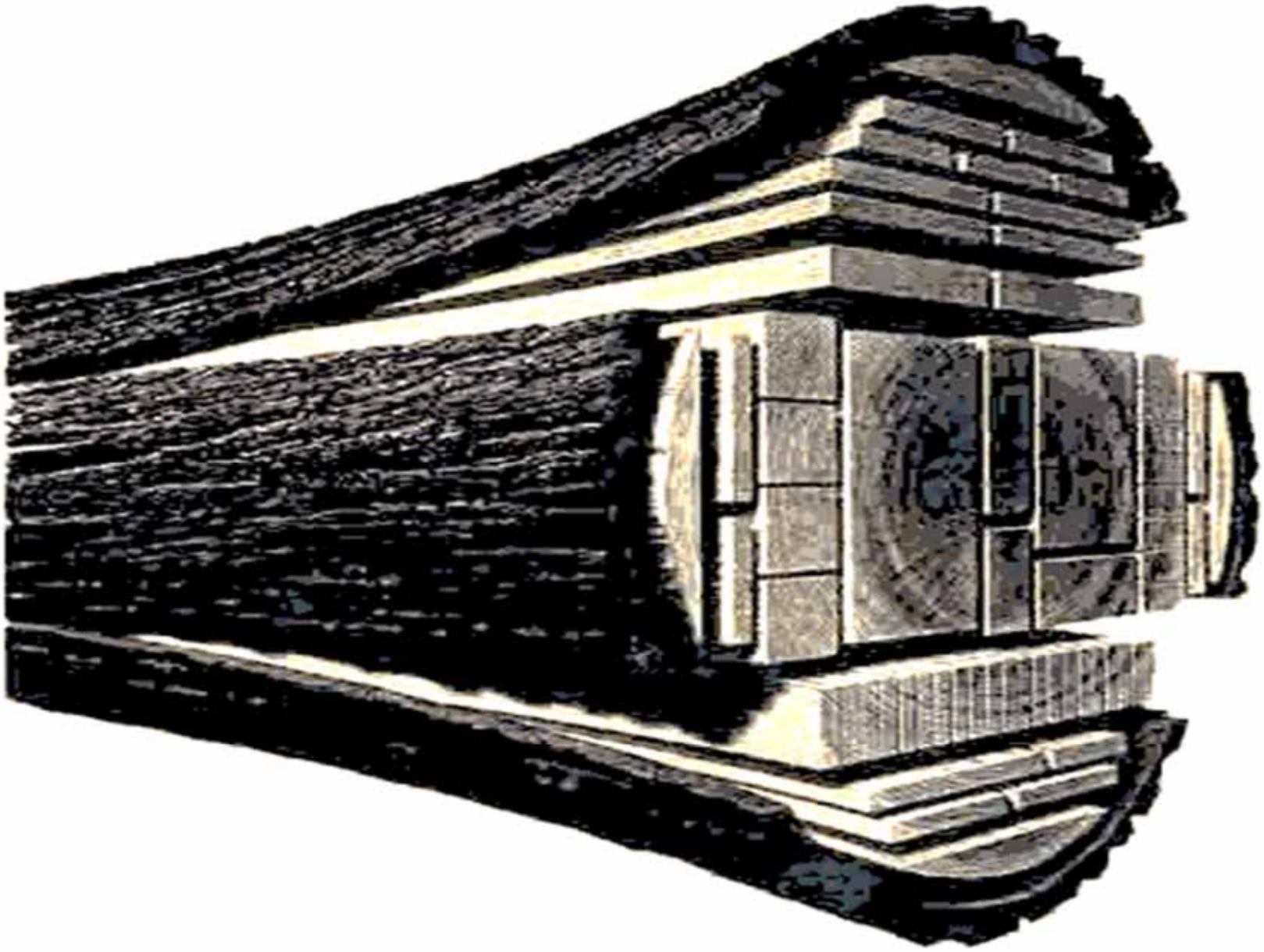
Smalian Formula

Example for a One Segment Log

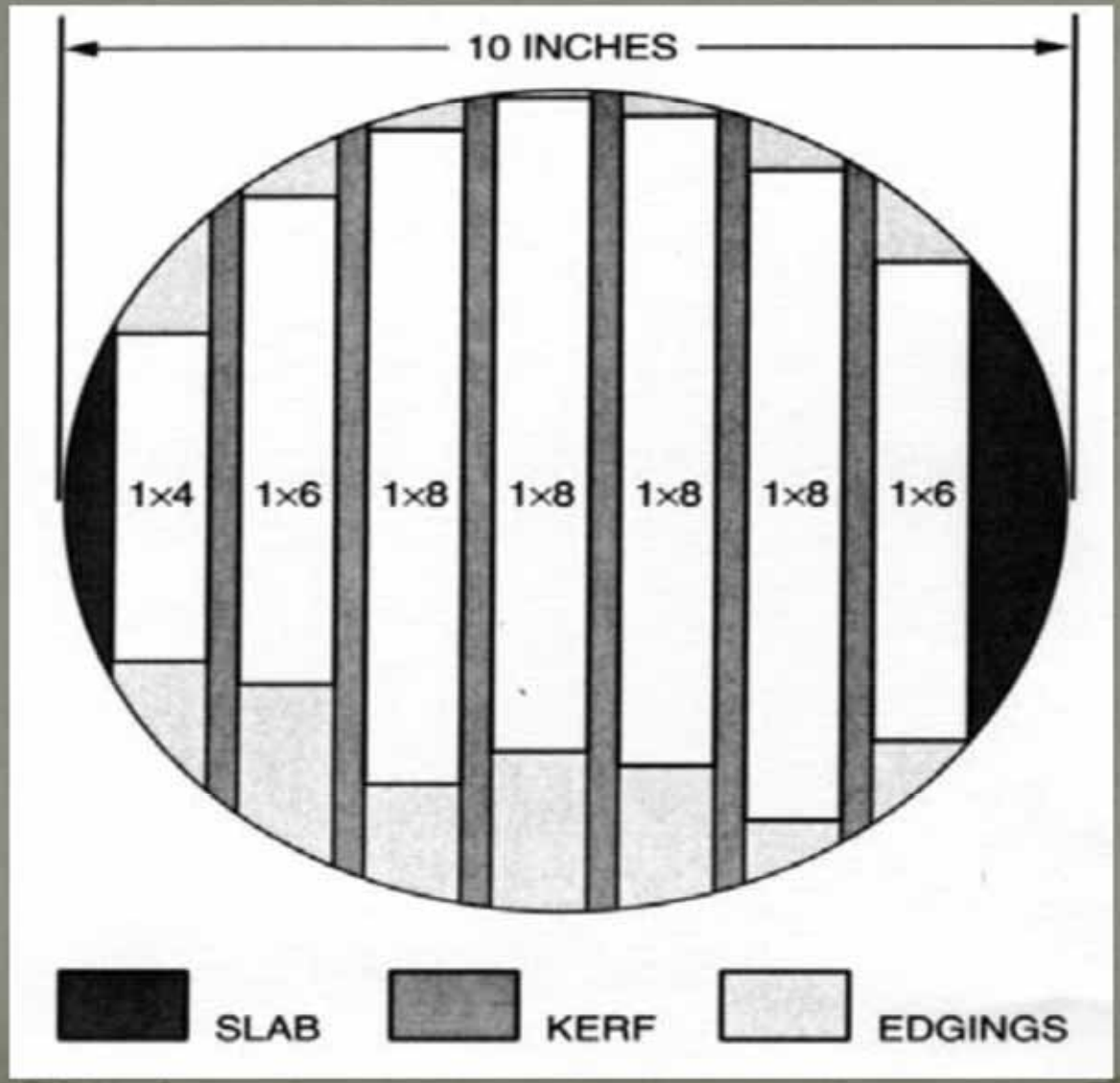
Vol (ft3)= 0.002727 (D2 + d2) SL

V = 0.002727 (172 + 152) 16

V = 22.4 ft3



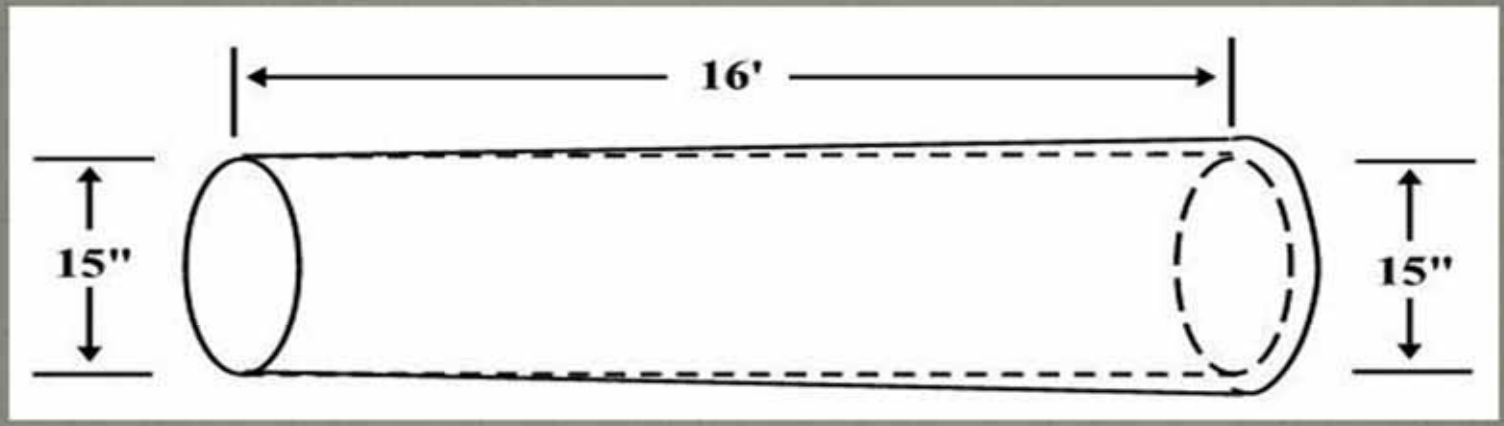
Log Diagram

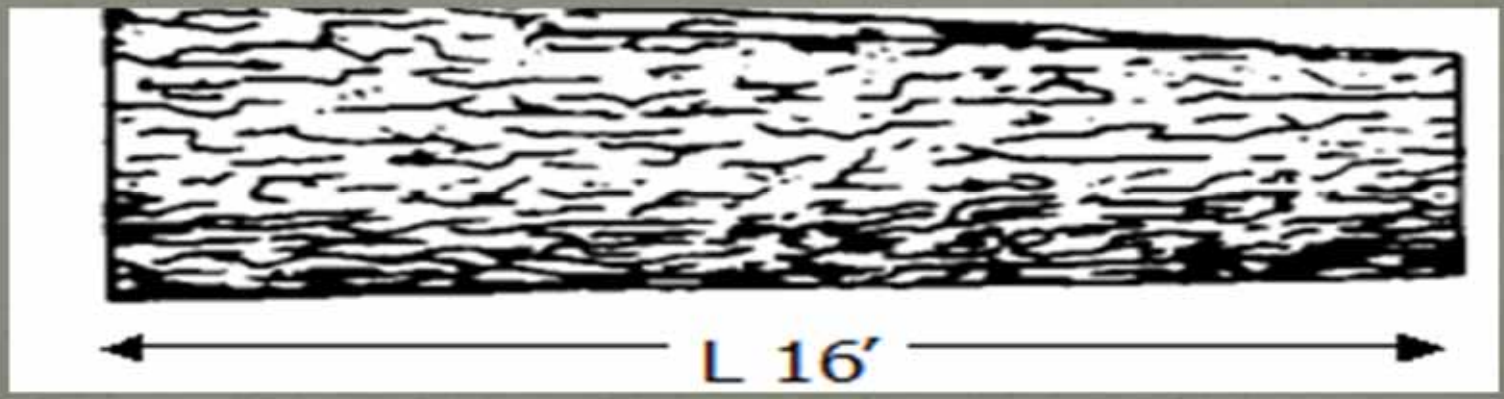


Cubic Scaling

- FS Cubic Scaling Handbook with modifications using the Idaho Log Scaling Manual
- Volume Determined by the Taper of the Log not the Scaling Cylinder like Scribner
- Small and Large Ends Measured the same as Scribner with the exception of a Butt Log
- Scaled in Segments up to 20 ft, Multiple Segment Logs are divided the same as Scribner
- Taper Distribution on Multiple Segment Logs is the same as a Second Cut Log in Scribner with the Exception of a Butt Log

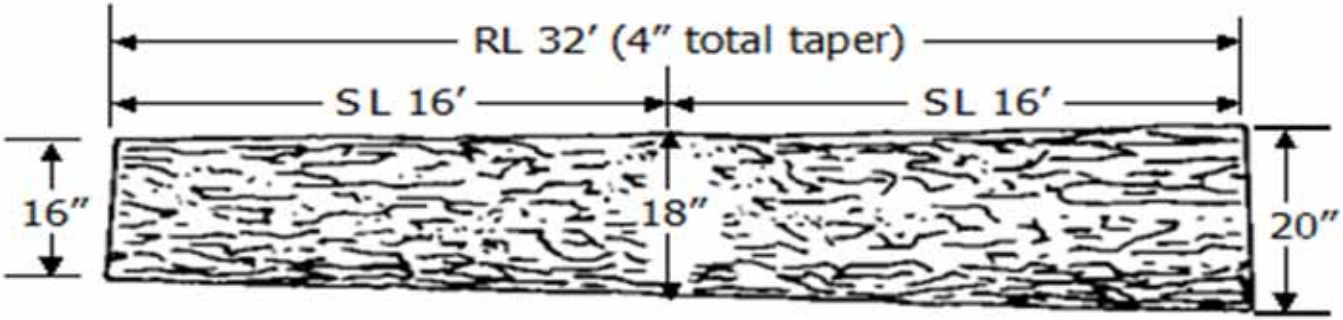
Cubic vs Scribner



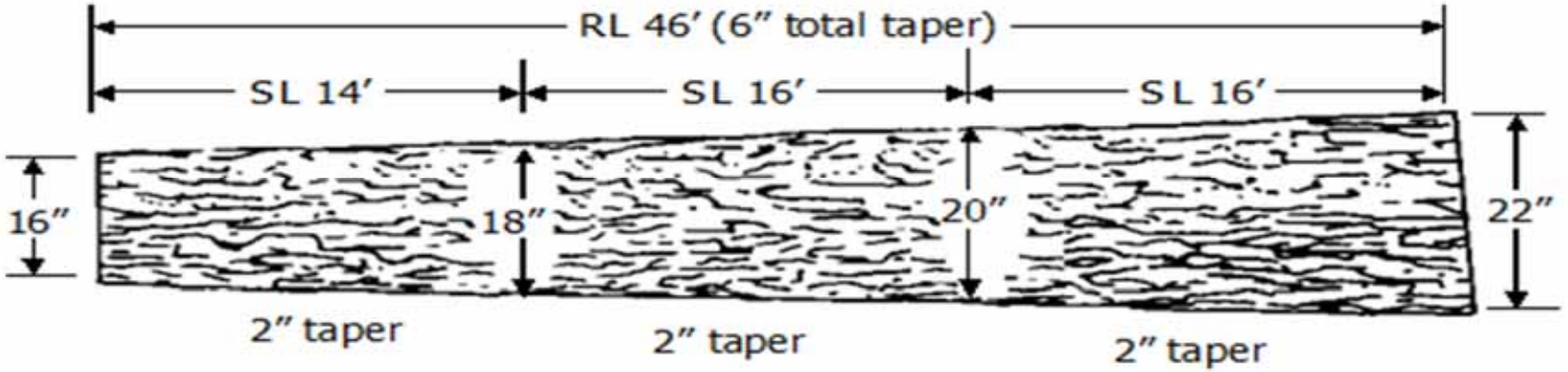


Taper Distribution

Even Taper Distribution 32 ft Log

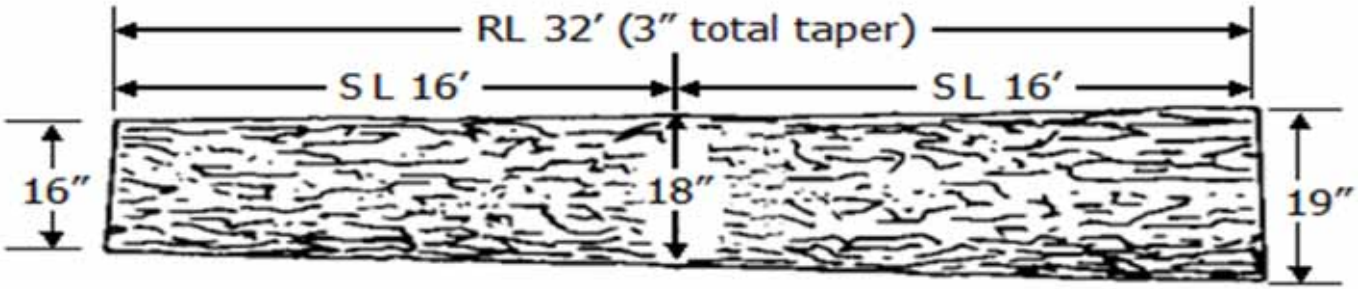


Even Taper Distribution 46 ft Log

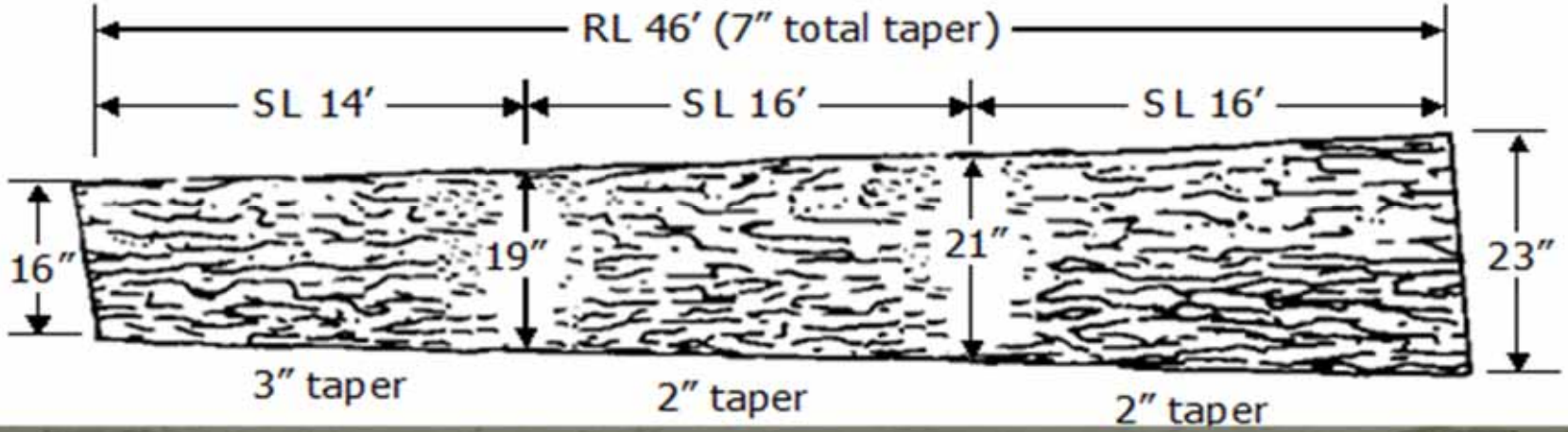


Taper Distribution

Uneven Taper Distribution 32ft Log



Uneven Taper Distribution 46ft Log



Cubic Scaling

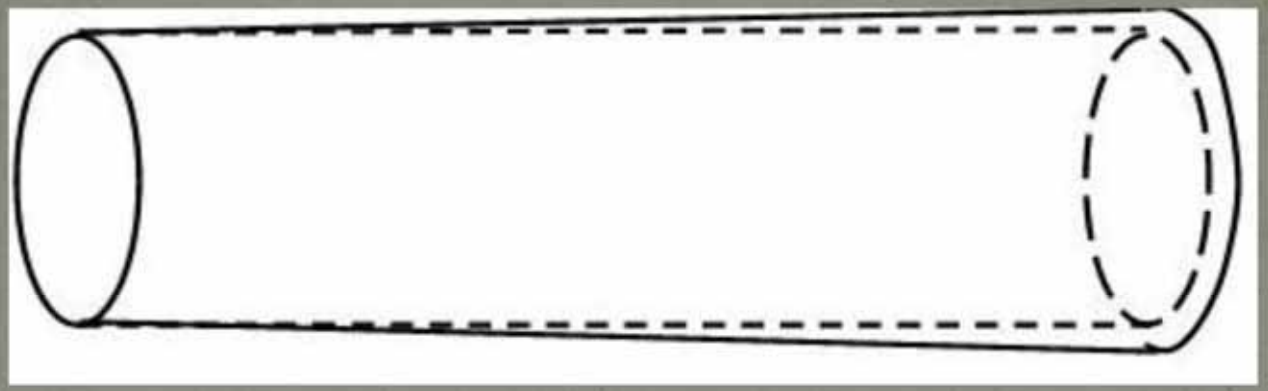
- Trim allowance will be the same – 6in. per Segment
  +/- 2 in.
- Defect determination is the same, by Segment – measured in .10 of ft3
  - Rot
  - Crook and Sweep
  - Shake ,Checks, and Pitch Seams
  - Breakage and Mechanical Damage
- 100 ft3 = Cunit Expressed as: Ccf

Cubic Scaling

Cubic vs Scribner Volume

16 ft.

6 in.



9 in.

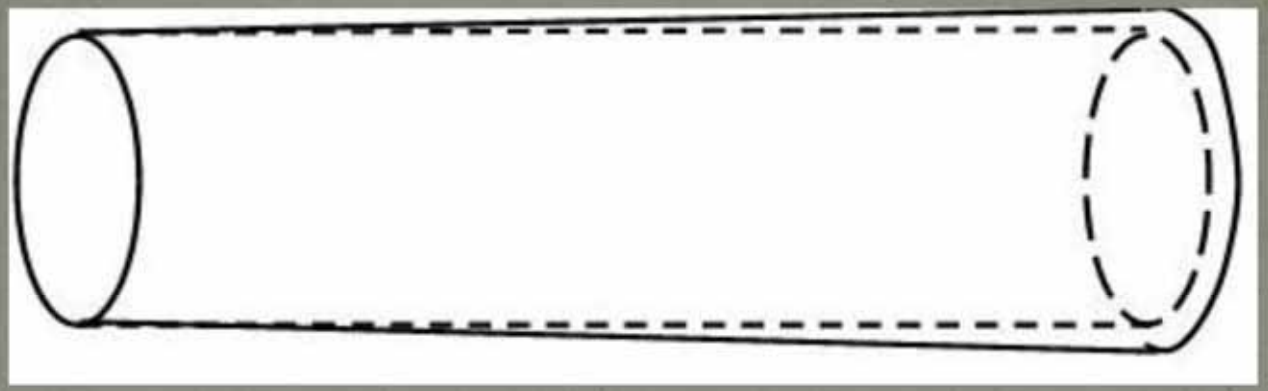
Scribner Vol 2 = 20 bf

Cubic Vol = 5.1 ft3

Cubic Scaling

Cubic vs Scribner Volume

20 ft.



6 in.

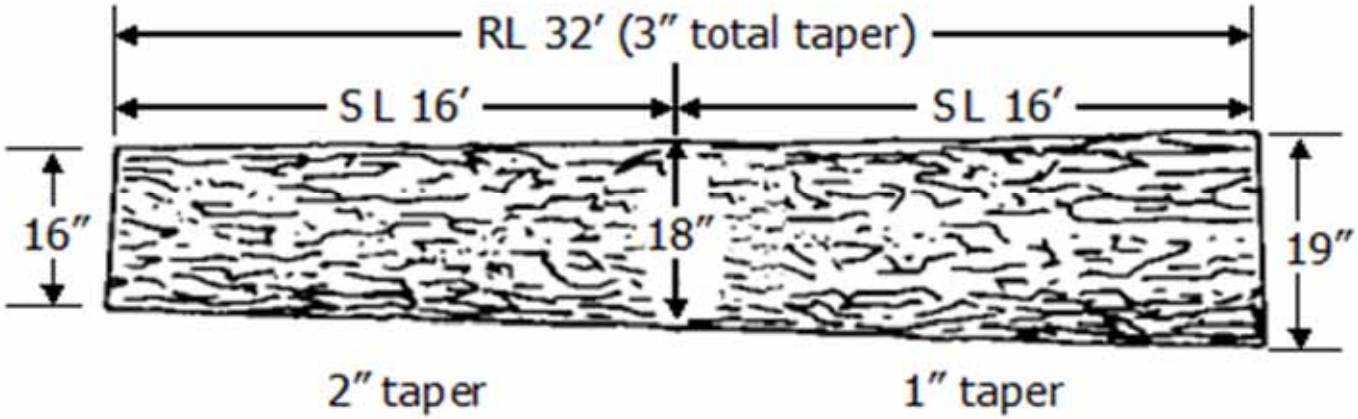
9 in.

Scribner Vol 2 = 20 bf

Cubic Vol = 6.4 ft3

Cubic Scaling

Cubic vs Scribner Volume



Scribner Vol 160 + 210 = 370 bf

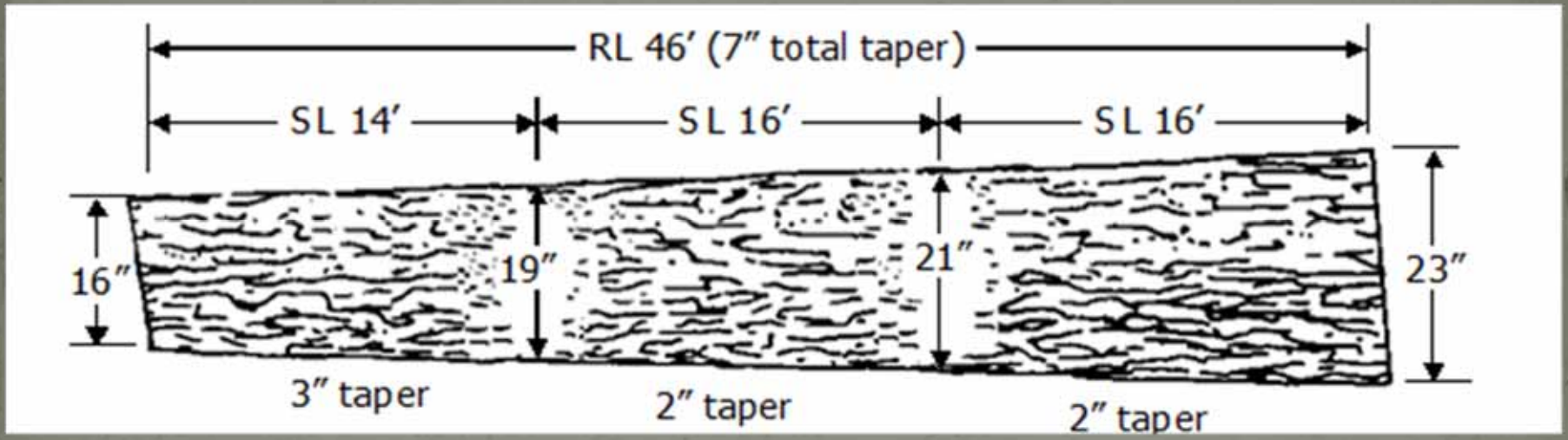
.37 Mbf

Cubic Vol 25.3 + 29.9 = 55.20 ft3

.552 Ccf

Cubic Scaling

Cubic vs Scribner Volume



Scribner Vol 140 + 240 + 300 = 680 bf

.680 Mbf

Cubic Vol 23.6 + 35.0 + 42.3 = 100.90 ft3

1.01 Ccf

Cubic Scaling

Typical Load of Logs

44 logs
Avg Diameter 9.1 in.
Avg Length 26.2 ft
8ft multiples

Scribner Volume	Gross –	4,390 bf	4.390 Mbf
	Net -	4,120 bf	4.120 Mbf
	Defect – 6.2 %		
Cubic Volume	Gross –	826.40 ft3	8.264 Ccf
	Net -	797.0 ft3	7.970 Ccf
	Defect – 3.6 %		

Cubic Scaling

- Not a Requirement For Log Sellers
- An Option to Suppliers
- Increase the Number Longer Logs Delivered
- Single Segment
- 2 Segment
- 3 Segment Logs
- The Exact Log Specifications for 3 Segment Logs is a Work in Progress

Cubic Scaling

IDAHO FOREST GROUP

Questions