Timber Measurement Society 2014

Log Exports to China

Scaling and Accountability

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- This presentation is and update from 2013 about the methods and procedures used In China for inspecting imported logs and the challenges that British Columbia log exporters face in the progression to smooth business transactions.

- Searching Google for an image of a Chinese log scaler produced this.

- Certainly not the result I expected but rather amusing.

Chinese Log Scaler?

Standards in China

- Contrary to popular belief, the log inspection standards in China are quite stringent.
- Log Scalers must be certified in every scaling method of the country logs are being imported from.
- When check scales are performed, the tolerance is one percent (1 %).
- All incoming log shipments are scaled and piece tallied by independent parties

Scaling Methods

Scaling Methods Explained

- Many log exporters are under the impression that this is how logs are scaled in China.
- This is common with “Cut to Length” shipments from Russia and New Zealand where there is no question about the length.
- The Chinese scalers will use a hammer to knock on the log for the opposing end to be identified.
- I have experimented with this and it is quite effective but, not very efficient.

Typical scaling procedure for North American log imports

The China Domestic Scale

- This scale method is used for domestic sales and import tax charges in China, it only uses a top measurement along with a taper factor which is built into their version of the Smalian formula.

- This is NOT the scale that is used for volume comparisons on imported logs although it is expected to produce a higher result than other Cubic Metric scale methods.

- The China Domestic Scale overstates the cubic meters of the same log in comparison to the BC Metric Scale by approximately 5 – 10%. As a log's top diameter increases the scale difference begins to get smaller.

Chinese Log Importers

- Prefer to buy logs on a Scribner scale basis due to the over run or favorable conversion rate to the China Domestic Scale.
- When buying logs on a BC Metric Scale the expectation is to benefit from at least a 5% increase in the Chinese Domestic scale on the same logs.
- The volume that is gained between the different scaling methods between buying and selling is often the largest piece of the importers' profit margin.
- The larger logs have a less favorable scale conversion or volume difference which explains why the smaller logs are more favored by the importer.

Comparison Between Scale Volumes

BC Metric				China Domestic				
Length (M)	Top (Rads)	Butt (Rads)	M3	Length (M)	Top (Rads)	Butt (Rads)	M3	%
12.6	15	19	**1.159**	12.6	15	NA	**1.328**	12.71%
12.6	20	24	**1.931**	12.6	20	NA	**2.161**	10.66%
12.6	26	30	**3.118**	12.6	26	NA	**3.426**	9.00%
12.6	30	35	**4.204**	12.6	30	NA	**4.431**	5.13%
								9.37%

China Inspection and Quarantine

- This agency is better known as the CIQ.
- The CIQ is a government agency who is responsible for regulating all imports and exports to and from China.
- A separate division of the CIQ is responsible for governing all of the scaling regulations and certification of the log scalers in China.
- All imported logs must be scaled by an accredited independent 3rd party scaling company and that company must submit it's results and all data to the CIQ for audit.

CIQ

- Once the CIQ has done it's audit of the scale and piece tally information it will issue an official and final report of the scale results .
- The CIQ is actively involved in shortage claims on behalf of the importers and is also persistent in finding the reasons why the shortages occur.
- Statistics are kept on all imports to assist in identifying trends and problems.

Scale and Piece Shortages
Why Do They Occur?

- Scaling Integrity
- Inventory Control
- Boom & Bundle Quality
- Water Transport of Log Booms
- Shipping
- Breakage During Loading and Unloading
- Interpretation of Scaling Rules and Methods

Interpretation and Practice of Scaling Methods

- It has been identified that there is some misinterpretation in the application of large end measurements and how they are taken.
- Section 4.2 of the BC Scaling Manual explains this.
- It has become apparent that some of the scalers in BC either don't clearly understand or are not properly applying the rules from section 4.2 of the BC Scaling Manual.

BC Scaling Manual Section 4.2

- This has been the largest topic of discussion with the CIQ officials in China about the reason for scale shortages.
- According to the BC Scaling Manual: The difference between the large end and the small end of a log shall not exceed 30% and if it does the volume of the log is overstated using the Smalian formula.
- The manual then uses an example of the large end not to exceed the small end by 150%.
- These two statements seem to be in conflict?

Smalian's formula arrives at average area by averaging the areas of the top and butt ends of a log. The Smalian formula is the official log scaling rule for the Province of British Columbia because it is practical and works well where logs are bucked prior to scaling.

The effect of bucking is to reduce taper, and experience has shown that where the difference between the top and butt diameters exceeds 30 percent, (where the butt diametre exceeds 150 percent of the top diameter) the use of Smalian's formula is not an accurate reflection of log volume. This is demonstrated in Figure 4.3, where a one cubic metre cylinder is gradually reduced in diameter at one end, becoming a cone, which has a volume of 0.333 m^3. Calculated with Smalian's formula, the volume is overstated as

0.500 m^3, and if calculated by averaging the diameters, the volume is understated as 0.250 m^3.

Interpretation

- Due to a misinterpretation of the BC Scaling manual, the Chinese scalers and the CIQ believe that large end measurements shall not exceed 1.3 times that of the small end.
- After many discussions, comparisons and revisiting the manual it became clear that there is another issue.
- Not only are the two previously mentioned statements in the manual conflicting, one of them is not mathematically correct.

30% or 150%?

- A log with a top of 10 Rads and a butt of 15 Rads
- 10 / 15 = .66 or 33% difference which exceeds 30% difference between the large and small ends.
- 10 x 150% = 15 This example fits with the example used in the BC Scaling Manual but it is not mathematically correct in comparison to the 30% difference.
- 10 x 140% = 14 and 10 / 14 = .71 or 29% difference this seems to be consistent and correct to the intent of the BC Scaling Manual.

Is Section 4.2 of the BC Scaling Manual Being Applied Properly?

- Because there has yet to be a revision or proper clarification of this, it appears that it is not clearly understood by anyone.
- A number of Ministry of Forests staff and industry professionals have been consulted for their thoughts but, so far there has been no firm conclusion or resolution.
- Based on the following sample data from a recent BC log shipment that arrived in China there appears to be little attention paid to the implications of how the large end measurements effect the cubic meter volume of a log.

Sample BC Scale Data Analysis

1.4 is the correct representation of 30% difference					
Butt-End Dia. Ratio				BC Pieces	BC Volume
« 1.3				8383	4668.825
1.3				1195	549.418
1.301-1.399				6558	4068.240
1.400-1.499				4970	3098.965
1.500-1.599				4382	2224.803
1.600-1.699				2520	1267.979
1.700-1.799				1053	521.619
1.800-1.899				341	185.465
1.900-1.999				39	34.486
2.000-2.099				139	82.421
2.100-2.199				54	34.116
2.200-2.299				17	11.227
2.300-2.399				3	2.357
2.400-2.499				4	2.207
2.500-2.599				4	4.278
2.600-2.699				2	1.164
2.700-2.799					
3.125				1	1.245
Total				29665	16758.815
>1.3Total				20087	11540.572

Where is the Large End?

- It is very common to see scale data like this where the small end and large end radius exceed 30% difference.
- The large end of a log is more of a judgement or opinion that is supposed to be based on one of three shapes.
- Conoid (Truncated Cone), Neiloid and Parabolic.

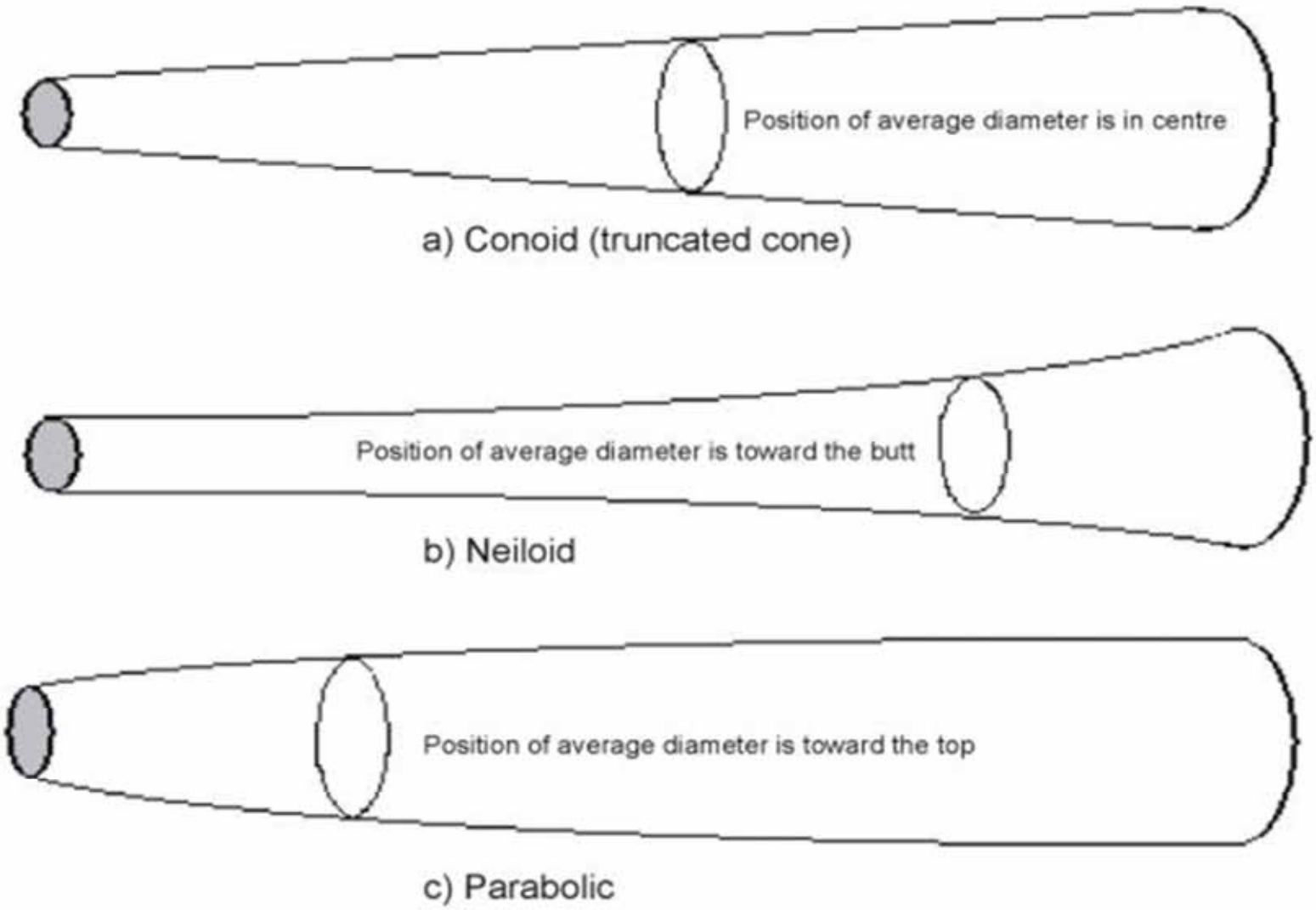

Figure 4.2 Depictions of Three Typical Log Forms.

Credibility

- Currently the log importers in China and the CIQ do not have much confidence in the BC Metric scale for the basis of trade.
- We as an industry should be concerned about this because it could also be effecting the amount of stumpage and royalties being paid to the local government.
- It is important that we understand and conduct our own scale system properly if we expect our trading partners to have confidence in it.

International Co-Operation

- Recently, one of the larger scaling bureaus in the United States entered into an agreement with the CIQ to establish a scaling task force.
- This task force is a very positive step towards trade co-operation between the two countries and so far has produced some favorable results.
- The CIQ has expressed a very keen interest in establishing a similar arrangement with the BC forest industry.

The Solution

- The solution to the issues remains to be seen.
- Deficiencies need to be fixed at home before we can expect people from another country to understand our system and properly apply it.
- The responsibilities lie on all parties involved from Government, Licensees to scalers in the field.

Thanks for Listening!

- Questions?

- Comments