

WOOD INCREASES MARKET SHARE

RTA FORESEES EVEN STRONGER DEMAND FOR TIES

By Jim Gauntt

For all its genuine simplicity, the wood tie—or rather the demand for it—sure can be a complicated thing to understand. But, over the past few years, the Railway Tie Association (RTA), through its economic research, has gotten a pretty good handle on what is likely to happen with future tie purchases.

Take, for example, our predictions earlier this year. The econometric models forecast that tie purchases for 2005 would reach 18.9 million ties. Even under the worst of circumstances, demand was expected to be no worse than 18.4 million.

As of the mid-year point in 2005, annualized tie purchases stand at 18.5 million ties. And, if you would talk to railroads west of the Mississippi as well as some short lines, you would learn that the unsatisfied demand is several hundred

thousand ties. So, a forecast of 18.9 million “true market demand” looks to be at the center of the bulls eye.

What is also happening is that the wood is actually increasing its share of the overall market for tie products. It’s a trend that you would expect to occur as a natural by-product of a rapidly growing railroad business since so much existing track is built on wood. But, it’s not necessarily intuitive, considering all the hype about the increasing use of alternative tie products over the past few years.

That’s probably the subject of another article as well as debate. However, it is worth pointing out since a look at historical numbers for 2004, and then what is occurring in 2005, suggests that alternative products have yet to elevate market penetration beyond certain niche applications.

So, what did happen in 2004, according to the railroads themselves? A look at the tables generated from R1 reports and graciously provided by the Association of American Railroads (AAR) offer the meaningful data.

Historical Overview

Tables 1 and 2 outline what U.S. Class 1 railroads installed in track in 2004. In the first table are those ties that were laid in “maintenance” mode, and the second reports ties laid in “new construction” mode. Adding them together gives the totals for all new ties used by U.S. Class 1 railroads in 2004.

That means U.S. Class 1s “installed” 12,704,036 wood ties in track in 2004. That’s up by 128,258 ties.

Total alternative ties “installed” equaled 861,634 or 118,187 less than in

Table 1—Crossties Laid In Replacement Statistics For Class 1 Railroads In The U.S. In 2004

| District & Railroad | Treated wooden crossties laid in replacement (#) | | New crossties laid in replacement other than wooden (#) | Track maintained by reporting railroad | | Crossties per mile (1967) | New crosstie replacement avg. | | (9) |
|-------------------------------|--|----------------------|---|--|---------------------|---------------------------|-------------------------------|---------------------|-------------------|
| | New Ties (1) | Second-Hand Ties (2) | | Miles occupied by crossties (a) | Total crossties (b) | | % renewal to all ties (7) | # laid per mile (8) | |
| Eastern District | | | | | | | | | |
| CSX | 2,502,867 | 43,061 | (c) 53,421 | 32,276 | 96,440,688 | 2,988 | 2.65% | 79 | 7,384,981 |
| Grand Trunk Corp. (CN) | 621,258 | 132 | 0 | 10,221 | 32,247,255 | 3,155 | 1.93% | 61 | 1,589,727 |
| Norfolk Southern | 2,457,681 | 158,142 | 0 | 30,695 | 94,417,820 | 3,076 | 2.60% | 80 | 9,153,210 |
| Total Eastern District | 5,581,806 | 201,335 | 53,421 | 73,192 | 223,105,763 | 3,048 | 2.53% | 77 | 18,127,918 |
| Western District | | | | | | | | | |
| Burlington Northern Santa Fe | 2,369,611 | 0 | (c) 143,947 | 40,344 | 124,864,680 | 3,095 | 2.01% | 62 | 3,153,570 |
| Kansas City Southern | 273,700 | 0 | 0 | 4,145 | 13,259,855 | 3,199 | 2.06% | 66 | 670,162 |
| Soo Line (CPR) | 132,163 | 0 | 94 | 2,727 | 8,232,813 | 3,019 | 1.61% | 48 | 521,873 |
| Union Pacific | 4,110,965 | 2,541 | (d) 403,182 | 46,410 | 138,301,800 | 2,980 | 3.26% | 97 | (e) 7,811,862 |
| Total Western District | 6,886,439 | 2,541 | 547,223 | 93,626 | 284,659,148 | 3,041 | 2.61% | 79 | 12,157,467 |
| Total United States | 12,468,245 | 203,876 | 600,644 | 166,818 | 507,764,911 | 3,044 | 2.57% | 78 | 30,285,385 |

The 2004 Grand Trunk figures include BLE and DMIR beginning May 14.

42,165 Second-Hand Other-Than-Wooden ties, not shown on this page were laid in replacement in 2004.

Source: R-1 Annual Reports to the Surface Transportation Board

(a) Total mileage operated at the end of year, excluding mileage under trackage rights. (b) Based on crossties per mile of track in 1967, the last year reported. (c) Concrete ties. (d) No concrete ties, all other non-wooden ties. (e) All concrete ties except 28,740 other non-wooden ties. (f) Includes 205 steel switch ties and 1,134 concrete switch ties, all assigned 65 board feet per tie.

Table 2—For Calendar Year 2004

Crossties Laid In Addition Statistics For Class 1 Railroads In The U.S.

| District & Railroad | Treated wooden crossties laid in addition (number) | | New crossties laid in replacement other than wooden (number) (12) | Switch and bridge ties laid in addition (board ft.) (13) |
|-------------------------------|--|-----------------------|---|--|
| | New Ties (10) | Second-hand ties (11) | | |
| Eastern District | | | | |
| CSX | 76,002 | 855 | (c) 1,585 | 167,769 |
| Grand Trunk Western (CN) | 0 | 0 | 0 | 0 |
| Norfolk Southern | 12,541 | 0 | 0 | 36,159 |
| Total Eastern District | 88,543 | 855 | 1,585 | 203,928 |
| Western District | | | | |
| Burlington Northern Santa Fe | 42,506 | 0 | (c) 139,158 | 78,870 |
| Kansas City Southern | 9,350 | 0 | 0 | 5,912 |
| Soo Line (CPR) | 0 | 0 | 0 | 0 |
| Union Pacific | 95,392 | 222 | (c) 120,247 | (g) 302,545 |
| Total Western District | 147,248 | 222 | 259,405 | 387,327 |
| Total United States | 235,791 | 1,077 | 260,990 | 591,255 |

Source: R-1 Annual Reports to the Surface Transportation Board

(c) Concrete ties. (g) Includes 1,133 concrete ties that were assigned 65 board feet per tie.

2003. The vast majority of these installed ties were concrete, with only 28,740 composite ties reported (roughly half the number of composite ties installed in 2003) and just a few hundred steel ties, mainly switch ties, used.

U.S. Class 1 market share for new wood thus was 93.7 percent in 2004 versus 92.8 percent in 2003. While this may be statistically insignificant, wood tie producers will nonetheless be gratified with this data.

What happens in 2005 and beyond requires a look at this year's exclusive surveys of both the Class 1s and the short line industries.

Surveys

Sticking with the Class 1s for the moment, what do the engineering and purchasing staff tell RTA about what they will buy in 2005 and beyond?

Table 3 gives the data for both U.S. and Canadian Class 1 roads. Note that this is what these roads say they will purchase (not necessarily install). It makes the comparison to the installed data a bit

Table 3—Railway Tie Association Annual Survey*

Estimated Crosstie Requirements Class 1 Railroads (000's omitted)
2005-2008 Inclusive

AUTHORIZED CROSSTIES FOR 2005

| Region | Total Track Miles | New Wood Crossties | | Wood Relay Crossties | New Non-Wood Crossties | | | Switch Ties (Units) | | Bridge Timbers Units |
|------------------------------------|-------------------|--------------------|----------------|----------------------|------------------------|---------------|----------------|---------------------|----------|----------------------|
| | | Hardwood | Softwood | | Concrete | Steel | Other | Wood | Other | |
| Eastern U.S. | 64,200 | 5,137,000 | 0 | 28,000 | 50,000 | 15,000 | 0 | 198,308 | 0 | 41,077 |
| Western U.S. | 76,778 | 7,108,795 | 500,000 | 157,475 | 843,761 | 5,981 | 130,156 | 332,570 | 0 | 29,500 |
| Canada & Canadian Owned U.S. Track | 33,300 | 2,314,000 | 155,000 | 60,000 | 61,000 | 3,000 | 5,000 | 95,000 | 0 | 1,800 |
| TOTAL | 174,278 | 14,559,795 | 655,000 | 245,475 | 954,761 | 23,981 | 135,156 | 625,878 | 0 | 72,377 |

AUTHORIZED CROSSTIES FOR 2006

| Region | Total Track Miles | New Wood Crossties | | Wood Relay Crossties | New Non-Wood Crossties | | | Switch Ties (Units) | | Bridge Timbers Units |
|------------------------------------|-------------------|--------------------|----------------|----------------------|------------------------|---------------|----------------|---------------------|----------|----------------------|
| | | Hardwood | Softwood | | Concrete | Steel | Other | Wood | Other | |
| Eastern U.S. | 55,294 | 6,037,000 | 0 | 55,000 | 50,000 | 15,000 | 0 | 229,077 | 0 | 42,615 |
| Western U.S. | 76,778 | 7,278,000 | 400,000 | 220,000 | 1,001,500 | 6,000 | 200,000 | 310,000 | 0 | 29,500 |
| Canada & Canadian Owned U.S. Track | 33,300 | 2,400,000 | 175,000 | 62,000 | 30,200 | 3,000 | 5,000 | 50,000 | 0 | 1,800 |
| TOTAL | 165,372 | 15,715,000 | 575,000 | 337,000 | 1,081,700 | 24,000 | 205,000 | 589,077 | 0 | 73,915 |

AUTHORIZED CROSSTIES FOR 2007

| Region | Total Track Miles | New Wood Crossties | | Wood Relay Crossties | New Non-Wood Crossties | | | Switch Ties (Units) | | Bridge Timbers Units |
|------------------------------------|-------------------|--------------------|----------------|----------------------|------------------------|---------------|----------------|---------------------|----------|----------------------|
| | | Hardwood | Softwood | | Concrete | Steel | Other | Wood | Other | |
| Eastern U.S. | 55,294 | 6,037,000 | 0 | 35,000 | 25,000 | 15,000 | 0 | 229,077 | 0 | 42,615 |
| Western U.S. | 76,778 | 7,281,000 | 350,000 | 270,000 | 1,052,500 | 6,000 | 225,000 | 310,000 | 0 | 29,500 |
| Canada & Canadian Owned U.S. Track | 33,300 | 2,300,000 | 155,000 | 65,000 | 30,200 | 3,000 | 5,000 | 85,000 | 0 | 1,800 |
| TOTAL | 165,372 | 15,618,000 | 505,000 | 370,000 | 1,107,700 | 24,000 | 230,000 | 624,077 | 0 | 73,915 |

AUTHORIZED CROSSTIES FOR 2008

| Region | Total Track Miles | New Wood Crossties | | Wood Relay Crossties | New Non-Wood Crossties | | | Switch Ties (Units) | | Bridge Timbers Units |
|------------------------------------|-------------------|--------------------|----------------|----------------------|------------------------|---------------|----------------|---------------------|----------|----------------------|
| | | Hardwood | Softwood | | Concrete | Steel | Other | Wood | Other | |
| Eastern U.S. | 55,294 | 5,837,000 | 0 | 35,000 | 25,000 | 15,000 | 0 | 229,077 | 0 | 42,615 |
| Western U.S. | 76,778 | 7,356,000 | 255,000 | 270,000 | 1,052,500 | 6,000 | 225,000 | 310,000 | 0 | 29,500 |
| Canada & Canadian Owned U.S. Track | 31,500 | 2,300,000 | 155,000 | 65,000 | 30,200 | 3,000 | 5,000 | 90,000 | 0 | 1,800 |
| TOTAL | 163,572 | 15,493,000 | 410,000 | 370,000 | 1,107,700 | 24,000 | 230,000 | 629,077 | 0 | 73,915 |

* Eastern Railroads reporting - CSX Transportation; Florida East Coast; and Norfolk Southern. Western Railroads reporting - Burlington Northern Santa Fe, Kansas City Southern Railway and Union Pacific. Canadian Railroads reporting - BC Rail, Canadian Pacific Railway (includes Soo Line) and CN/IC (includes GTW).

Volume of Wood Necessary To Produce Estimated Crosstie Requirements For Class 1 Railroads (000's omitted)

| | Thousand Board Feet | | |
|--------------------------------|---------------------|----------------|----------------|
| | 2005 | 2006 | 2007 |
| Crossties - U.S. & Canada | 608,592 | 651,600 | 644,920 |
| Switch Ties - U.S. & Canada | 40,682 | 38,290 | 40,565 |
| Bridge Timbers - U.S. & Canada | 9,770 | 9,978 | 9,979 |
| TOTAL BOARD FEET | 659,044 | 699,868 | 695,464 |

more complicated, yet still provides a pretty good picture of what is happening and is going to happen.

For 2005, Class 1s say they will demand from wood producers a total of 15,214,795 ties. Back out the ties destined for Canadian track (about 1.72 million), and the resultant is 13,502,795, or about 800,000 more ties, for the United States than in 2004. That's right in line

with RTA forecasts from earlier this year.

And what about 2006? If you believe the survey respondents, the demand for new wood ties by the Class 1s in the United States and Canada will skyrocket by 1 million next year. If you've already read the companion article that describes RTA's econometric model, you'll note that it forecasts between 800,000 and 900,000 additional Class 1 tie demand in

2006. So, surveys and forecasts agree. We're headed into a big demand year by the Class 1s.

That leads us to the short line industry. What do short lines tell RTA about their plans for the rest of 2005 and beyond?

Table 4 tabulates the data for short lines. For 2005, tie usage is expected to be up some 10 percent over 2004 at 3.44 million ties (since many of these ties are relay ties,

SHINING LIGHT ON THE VOLUME OF TIMBER REQUIRED FOR TIES

By Jim Gauntt

Last year, a sawmill member of the Railway Tie Association contacted headquarters to express a few thoughts about how we calculate the volume of timber required to produce the number of crossties expected to be produced each year. The issue at first appeared to be one of semantics, but looking at the points Ree Ellis of Cross-Ties Inc. made in that conversation, it became clear that more needed to be said about this subject.

For years, the chart that appears at the bottom of the Class 1 surveys has simply taken the amount of crossties expected to be produced for the Class 1s and multiplied it by 40BF average for crossties, 65BF average for switch ties, and 135BF average for bridge timbers to arrive at the volume of timber required to produce those products. What was really being calculated was the volume of wood (in board feet) that would be required.

Ellis pointed out quite correctly that this

did not even come close to how much timber had to be harvested—or rather the volume of timber required on average—to meet railroads' needs in any given year. His rationale is outlined in the reprinted letter on page 19.

By reviewing these points, it becomes clearer what a sawmill's real job is—and that it is a much larger job than just dealing with the sawing of crossties. Anytime someone takes ownership of the logs that they buy off a given tract of timber, there is much more to do than just think about ties. The ultimate consumer of a given product doesn't necessarily care about the details very often. But for tie users, more often than not, it becomes critical to understand all the market dynamics. This is especially true when demand is ramping up. It places into perspective just how crucial it is for the other markets for low-grade lumber products to be in sync if sawmills are expected to operate with any efficiency at all.

Consider the example given by Ellis: In the average tract, 20 percent of the logs can only be cut into lumber products. Some of these lumber products will be of the lower grades. When a mill saws ties, it produces even more low-grade lumber logs as a by-product. This increases the total amount of low-grade lumber a mill has to find a buyer for out of the same batch of logs. Usually, that is not a problem. But in today's markets, with low-grade lumber pricing as depressed as it is, some mills are backing into a real cash flow problem. One can hear the sawmiller say, "If I cut ties and produce lumber I can't sell, except at a loss, that can/will put me out of business."

That is the essence of the word "conundrum." Does that sawmiller just keep cutting, hoping that he won't run out of room to store the lumber or, more importantly, cash before the low-grade markets turn around? Or, does he shut the mill down and cut nothing

the actual number of new ties required is somewhere between 2.6-2.8 million). This increase in activity is confirmed by marketplace reports. However, the short lines that reported did not confirm any major increase in demand for 2006.

RTA has seen this before. Short lines have always been reluctant to project future purchases. This is probably a result of a cloudier crystal ball that smaller roads, by reason of cash flow uncertainties, have to peer into.

Still, you would think that with tax credit legislation in place to spur demand the surveys would portray greater optimism. Maybe habits are hard to break no matter how positive the news.

RTA's models project a true demand

Table 4—The Railway Tie Association* 2005 Regional & Short Line Crosstie Survey

| <u>Tie Categories</u> | <u>2004 Usage</u> | <u>2005 Projected</u> | <u>2006 Projected</u> | <u>2007 Projected</u> |
|----------------------------------|-------------------|-----------------------|-----------------------|-----------------------|
| New 7" Ties | 1,102,192 | 845,908 | 942,221 | 980,103 |
| New 6" Ties | 848,774 | 930,423 | 872,344 | 908,500 |
| Sub-Total New | 1,950,966 | 1,776,331 | 1,814,566 | 1,888,603 |
| Relay 7" Ties | 599,859 | 775,000 | 723,311 | 598,475 |
| Relay 6" Ties | 36,331 | 49,500 | 26,057 | 51,467 |
| Sub-Total Relay | 636,190 | 824,500 | 749,369 | 649,943 |
| Industrial 7" Ties | 392,564 | 661,557 | 632,459 | 517,049 |
| Industrial 6" Ties | 184,333 | 178,164 | 162,172 | 213,770 |
| Sub-Total Industrial | 576,897 | 839,721 | 794,631 | 730,820 |
| Grand Total All Wood Ties | 3,164,052 | 3,440,552 | 3,358,566 | 3,269,366 |
| Switch Ties | 100,405 | 99,333 | 95,511 | 89,103 |
| Bridge Timbers | 32,964 | 42,131 | 43,133 | 66,626 |
| Concrete Ties | 2,025 | 2,049 | 10,697 | 1,352 |
| Steel Ties | 1,908 | 1,544 | 3,020 | 2,528 |

In cooperation with the American Short Line and Regional Railroad Association.

Note: Calculation based on survey responses from 171 roads, representing approximately 61% of operating trackage.

(including ties) until the markets relent?

Consider also that while this scenario may be limited only to certain geographic regions of the tie-producing world at any given time, other producing regions may face some other issue. Take, for example, this year when in certain southeastern locales paper companies bought entire tracts of timber just to be chipped for pulpwood. Since timber cost for paper companies is only about 15 percent of their total costs, it's easier for them to pay higher prices than a small tie Sawyer can when their costs for timber may represent 60 percent of their price of a tie. More than not being able to compete for the timber it's often the knowledge that all those good tie-sized logs get chipped for pulp that really chafes sawmills and railroads alike.

Thus, the ongoing efforts to bring ties to the market has many faces. And, the sawmiller will see them all throughout his career. This should be kept in mind by all of those individuals and companies involved in tie production and use. Hats off to Ree Ellis for helping to shine a new light on this important subject. §

Dear Mr. Gauntt:

The following facts and assumptions were used to establish the total annual timber volume that would be harvested to produce 20,000,000 ties.

Facts

- Each ton of crosstie grade logs will produce an average of 2.2 crossties less 4 percent culls = 2.112 crossties per ton of logs processed.
- Twenty million ties will require 9,469,697 tons of crosstie grade logs and 28,409,091 tons of pulpwood, grade and pine logs equals 37,878,788 total tons of logs harvested.
- To produce 37,878,780 tons of logs, 631,313 acres of timber will be harvested.

Assumptions

Average hardwood tracts will yield 60 tons of logs to the acre. Broken down by species, 60 tons of logs produce 40 percent hardwood pulpwood, 25 percent crosstie grade logs, 20 percent grade sawlogs, 4 percent pine pulpwood, 10 percent pine chip 'n saw, and 1 percent pine sawlogs.

Formula

Twenty million ties divided by 2.112 ties per tons = 9,469,697 tons of crosstie grade logs divided by 25 percent = 37,878,788 total tons of logs harvested divided by 60 tons per acre = 631,313 total acres of logs will be harvested to yield 20,000,000 crossties.

History

Crosstie yield per ton of logs is taken from our mill production over the past 10 years as an average. Our mill produces more than 250,000 crossties annually.

The 60 tons of logs to the acre is an average from tracts 50 acres to more than 8,000 acres harvested over the past 10 years.

The percent breakdown by species is an average over the past five years taken from harvest data compiled from our own tracts and other experienced hardwood consultants that cruise hardwood tracts for their clients.

Sincerely,

Ree R. Ellis, Cross-Ties, L.P.

email: xties@mylink.net

increase from the smaller markets of around 600,000 ties in 2006. Short lines make up 70 percent of the smaller market for new ties, so it can be expected that if this sector's demand goes up by 600,000 ties in 2006, then 420,000 of that increase will come from short lines.

Are we too bullish for this segment of the market? A look at extenuating parameters for all the markets may provide some answers.

Caveats (Supply, etc.)

True demand and actual supply are two different things. Also impacting what will happen are several external mitigating factors. Thus, it is instructive to look at one and then the other to hone the viewpoint.

In this case, the factors that support a growing market include increasing freight traffic, absence of major track rationalization, and an expanding healthy economy. When you add to this the tax credit legislation for short lines and the newly enacted SAFTEA, which increases federal funding for rail-related infrastructure applications, you have an

irresistible picture—a picture of strong demand for ties.

On the other hand, as RTA reported in a presentation at the American Short Line and Regional Railroad Association national convention in Anaheim, Calif., earlier this year, there are numerous constraints that will effect meeting “true demand.”

Among these are supply constraints—the ability of railroads to actually install all the ties they want (in other words, do they have all the personnel, equipment and track time to do the work?)—and the financing (or budgetary) constraints that could affect some purchasers.

On the supply side of the equation, there is a bifurcated scene. East of the Mississippi, tie supply seems to be tracking along quite well. But west of that divide, it's different. Tie suppliers have been racked with depressed markets for the other products they cut when they saw ties. And, weather has been exceptionally wet this year, which has added to the woes. Some tie producers estimate that unmet demand could approach half a million ties in 2005.

And, you might ask, railroads want more next year, too? Well, if that reality unfolds, then there will likely be unmet demand at the end of 2006 as well.

What, if anything, on the horizon could ameliorate this lack of supply and demand equilibrium?

For one, the Federal Reserve is not yet finished raising interest rates. If what happens this time is similar to past actions of the Fed, then you could speculate that interest rates will go beyond a soft landing point for the economy and create a slight recession sometime in 2006. Possible, but not everyone thinks that will happen. Standard and Poor's (S&P) stated on Aug. 1 that the rising interest rate environment was nearing an end point and suggested that the Fed would skip a rate hike in one of its next two meetings. S&P thinks that Fed funds rate will not exceed 4 percent at the end of the year.

Another scenario would be that railroad capacity will reach its limits in the short term. We heard rumblings of this from some Class 1s earlier this year. And, it's not just the question of how many trains can be run over the existing track.

It's also a question of manpower and equipment.

But, let's say that the equipment and manpower are in place, how then do you improve capacity? You got it; build more double/triple tracks, improve track conditions on other lines, and improve efficiencies throughout the system. Most of these actions require more ties.

There just doesn't seem to be any way around the obvious conclusion but that the new era for railroads—and tie suppliers—is here.

Synthesis

In the final analysis, it appears certain that demand will outstrip supply for a period of time. History suggests that

when market conditions ramp up quickly it takes several months for equilibrium to be reached between supply and demand. The last two times it happened (1993-94 and 1997-98), the inequity existed for almost a year and a half. But part of the reason the equilibrium was reached was that tie demand went soft during the last rounds of railroad mergers. No such mollifying influence appears to be on the horizon this time.

In 2005, tie purchases will be between 18.5 and 18.7 million ties from all users. In 2006, the increase in "true demand" will probably be 1 million ties or more. However, if the supply constraints at the sawmill remain in place, the industry may only reach production levels of 19.0 to 19.2 million ties, leaving an unmet demand similar to that of 2005.

While some may see in this a silver lining in that this will ensure the rally for ties stays in place even longer, it also means that some customers may not achieve their maintenance or construction goals in the time frame desired. And that's not an optimum position for tie users to be in.

Conclusion

A lot can happen in a short period of time in this industry. For example, if market pricing reversed itself in certain low-grade oak lumber markets and lumber started to flow, the outcome would likely result in an increase in tie production. As one seasoned veteran sawmiller put it recently, "Just when you think things in the sawmill business are going to be one way, the markets change course, and just like that, it makes a fool of you."

Yet, there are others in the business who sense that a fundamental change has occurred at the sawmill base and that this will affect us for years to come.

Tie producers have a history of rising to the challenges of increasing demand for their products. The many instances where this has happened before and suppliers have quickly ratcheted up their production levels would argue that it will happen again this time. The key for buyers of ties for the remainder of 2005 and into 2006 is how long will it take before enough ties will be produced to equalize the supply/demand equation.

Only time will tell. §

Sales To Inventory Ratio

| | Mo/Yr | Tie Production | Tie Inventory | Change In Inventory | Tie Purchases | Annual Purchases Rolling Total | Inventory To Sales Ratio |
|------|-------|----------------|---------------|---------------------|---------------|--------------------------------|--------------------------|
| 2001 | Jan | 1,128 | 13,811 | 163 | 965 | 14,412 | 0.96 |
| | Feb | 1,117 | 13,839 | 28 | 1,089 | 14,288 | 0.97 |
| | Mar | 1,274 | 13,719 | (120) | 1,394 | 14,220 | 0.96 |
| | Apr | 1,109 | 13,398 | (321) | 1,430 | 13,991 | 0.96 |
| | May | 1,363 | 13,009 | (389) | 1,752 | 14,425 | 0.90 |
| | Jun | 1,213 | 12,427 | (582) | 1,795 | 14,636 | 0.85 |
| | Jul | 1,267 | 12,315 | (112) | 1,379 | 14,486 | 0.85 |
| | Aug | 1,414 | 12,108 | (207) | 1,621 | 14,756 | 0.82 |
| | Sep | 1,147 | 12,114 | 6 | 1,141 | 15,180 | 0.80 |
| | Oct | 1,415 | 12,382 | 268 | 1,147 | 15,367 | 0.81 |
| | Nov | 1,226 | 12,764 | 382 | 844 | 15,271 | 0.84 |
| | Dec | 1,284 | 12,624 | (140) | 1,424 | 15,981 | 0.79 |
| 2002 | Jan | 1,446 | 13,057 | 433 | 1,013 | 16,029 | 0.81 |
| | Feb | 1,399 | 13,118 | 61 | 1,338 | 16,278 | 0.81 |
| | Mar | 1,312 | 12,760 | (358) | 1,670 | 16,554 | 0.77 |
| | Apr | 1,370 | 12,482 | (278) | 1,648 | 16,772 | 0.74 |
| | May | 1,359 | 11,996 | (486) | 1,845 | 16,865 | 0.71 |
| | Jun | 1,401 | 11,735 | (261) | 1,662 | 16,732 | 0.70 |
| | Jul | 1,533 | 11,751 | 16 | 1,517 | 16,870 | 0.70 |
| | Aug | 1,647 | 11,602 | (149) | 1,795 | 17,044 | 0.68 |
| | Sep | 1,611 | 12,006 | 404 | 1,208 | 17,111 | 0.70 |
| | Oct | 1,893 | 12,927 | 922 | 972 | 16,935 | 0.76 |
| | Nov | 1,370 | 13,174 | 246 | 1,123 | 17,215 | 0.77 |
| | Dec | 1,127 | 13,406 | 232 | 895 | 16,686 | 0.80 |
| 2003 | Jan | 1,288 | 13,782 | 376 | 912 | 16,585 | 0.83 |
| | Feb | 1,143 | 13,748 | (34) | 1,177 | 16,424 | 0.84 |
| | Mar | 1,255 | 13,544 | (204) | 1,459 | 16,213 | 0.84 |
| | Apr | 1,525 | 13,354 | (190) | 1,714 | 16,280 | 0.82 |
| | May | 1,439 | 13,148 | (206) | 1,645 | 16,080 | 0.82 |
| | Jun | 1,365 | 13,037 | (111) | 1,476 | 15,894 | 0.82 |
| | Jul | 1,577 | 13,136 | 98 | 1,479 | 15,856 | 0.83 |
| | Aug | 1,587 | 12,997 | (139) | 1,725 | 15,786 | 0.82 |
| | Sep | 1,651 | 13,020 | 23 | 1,628 | 16,207 | 0.80 |
| | Oct | 1,725 | 13,403 | 383 | 1,342 | 16,577 | 0.81 |
| | Nov | 1,378 | 13,658 | 255 | 1,124 | 16,577 | 0.82 |
| | Dec | 1,280 | 13,426 | (232) | 1,512 | 17,194 | 0.78 |
| 2004 | Jan | 1,615 | 14,022 | 596 | 1,019 | 17,301 | 0.81 |
| | Feb | 1,470 | 14,129 | 107 | 1,363 | 17,487 | 0.81 |
| | Mar | 1,927 | 14,140 | 12 | 1,916 | 17,943 | 0.79 |
| | Apr | 1,583 | 14,254 | 113 | 1,470 | 17,699 | 0.81 |
| | May | 1,497 | 14,284 | 30 | 1,467 | 17,521 | 0.82 |
| | Jun | 1,876 | 14,384 | 100 | 1,776 | 17,820 | 0.81 |
| | Jul | 1,532 | 14,343 | (41) | 1,573 | 17,914 | 0.80 |
| | Aug | 1,656 | 14,243 | (100) | 1,755 | 17,943 | 0.79 |
| | Sep | 1,789 | 14,342 | 99 | 1,691 | 18,006 | 0.80 |
| | Oct | 1,655 | 14,728 | 386 | 1,269 | 17,933 | 0.82 |
| | Nov | 1,373 | 14,865 | 136 | 1,236 | 18,046 | 0.82 |
| | Dec | 1,366 | 15,015 | 150 | 1,216 | 17,749 | 0.85 |
| 2005 | Jan | 1,273 | 14,898 | (117) | 1,390 | 18,120 | 0.82 |
| | Feb | 1,270 | 14,707 | (191) | 1,461 | 18,218 | 0.81 |
| | Mar | 1,451 | 14,410 | (297) | 1,748 | 18,051 | 0.80 |
| | Apr | 1,421 | 13,951 | (459) | 1,880 | 18,460 | 0.76 |
| | May | 1,502 | 13,984 | 33 | 1,469 | 18,462 | 0.76 |
| | Jun | 1,793 | 13,988 | 5 | 1,788 | 18,475 | 0.76 |
| | Jul | 1,590 | 13,927 | (62) | 1,651 | 18,553 | 0.75 |

NOTE: The information in this chart is calculated from reported production and inventory numbers by RTA members. This represents more than 95% of the U.S. and Canadian market for wood crossies.