Spring, 2008

The Track Guy

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NEWSLETTER

Some Bid Results

Rail Improvements, Vidalia, GA

1.	Bullock Const.	1,360,200
2.	Queen City	1,423,700
3.	STX Corp	1,467,500

Bridge Tie Renewal, Oakmont, PA

1.	Balfour Beatty Rail	1,621,200
2.	GW Peoples	1,737,400
3.	Maine Track	1,965,800

Railroad Materials, Newark, NJ

1.	LB Foster	265,000
2.	Vossloh Track	269,500
3.	A & K Railroad	270,000

Track Rehab, Ithaca, MI

1.	Armond Castle	2,843,100
2.	CR Construction	2,944,100
3.	Railworks	3,283,189

Track Guy Consultants

This year is starting out to be the biggest ever for us. We have already given 11 Training seminars including 1 in Peru and have 14 lined up in the month of June. Our first APTA training program was a great success with the Cleveland RTA. We have been working on this program for months. It outlines all the requirements for a Transit System to become compliant with the new standards. This is a 2-day program that ensures that participants understand the basics of trackwork as well as minimum safety requirements. Give us a call if your maintenance personnel need a refresher on APTA requirements. They are different from FRA Track Safety Standards. Our website has more details also.

Our 2008 Trackwork tour is all set up. We are doing Trackwork 101 (an overview) and Trackwork 105 (Means & Methods). The schedule is Philadelphia July 22,23; Chicago Oct 1,2; Minneapolis Oct 7,8; Seattle Oct 16,17; San Francisco Oct 27,28; Albuquerque Nov 5,6 and Dallas Nov 12,13. Registration forms are being mailed out and are available on the website. We continue to take credit cards, check, cash, invoice or gasoline. We are already starting to get registrations so register early please. This will be another wonderful trip around this great United States. I am proud to be an American. The more I travel outside the US, the more gratitude I have for what we have here **in** the US.

Spotlight: Peru

In January I had the privilege to go to Lima, Peru and hi-rail the Central Railway owned by Railroad Development Corporation. My hosts were Bill Duggan, VP Operations and Francisco Carrión (aka Poncho), Manager. The Railroad is 330 miles long and starts at 0' elevation and in 50 miles reaches 16,000' elevation which makes it the highest Railroad station in the world. We did have oxygen in the hi-rail pickup but did not need it. This was my biggest fear since the highest I had ever been is Mt. Washington at 6,300'. The air was thin and I could not exert myself much. My hat is off to the track guys that maintain the railroad. Construction began in 1870 and was finally finished in 1890 after many starts, stops and wars. In 1999 RDC took over operations of 304 miles of Railroad hauling 1.6 MGT. Up until 2005, when the Rail Line in Tibet was built, this railway was the highest in the world but still carries the title of highest rail station. There are 68 tunnels, 61 bridges and 9 switchbacks. We started our trip in Lima on a little open air motor cart traveling through the streets of Lima being chased by what seemed like thousands of dogs. We then transferred to a nice hi-rail pickup and proceeded up to 16,000'. The scenery is indescribable. At the top, it was cold and snowing. One of the mud slides could be seen for miles where it took out 1,000' of track and a road. In many areas when I looked out the side window all I could see was the ground about 800' down. The steep grades and the sharp curves make track maintenance a true challenge. As we traveled on the rail, Poncho was spotting vertical split heads from the driver's seat. I was impressed. When we finished the 3-day tour I gave an FRA Track Safety Class to 14 of the track guys. All of them were extremely attentive and genuinely interested. Poncho translated at lightning speed. It was a seamless discussion from Spanish to English and back. It was absolutely amazing. Thanks Bill and Poncho for a very memorable experience. We have a proposal in to the Dubai Rapid Transit Authority. Who knows, maybe

Bill and Poncho

Fixing a mud slide

Highest Rail Station in the World

The Track Guys

Ask The Track Guy

This is where you, the reader get to ask questions about Railroad Track engineering, design, construction, maintenance or anything to do with Trackwork. Simply write or e-mail a question and we will answer in a timely manner. Some questions will be published here.

What is coefficient of expansion?

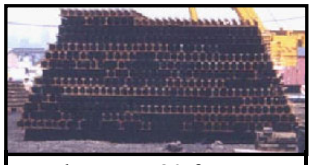
The coefficient of expansion for rail is the amount that one inch of rail expands for 1° of temperature change. As you can imagine, this is a very small number. The steel books say that steel should expand by .0000073 inches. Our industry says the number for rail is .0000065 or .0000067 depending on who you talk to. This is odd because I thought physics was a finite science full of numbers to the absolute. In many of our Newsletters we have discussed this topic, mainly because it is very important. There are 3 formulas floating around in the rail world for determining expansion of CWR due to temperature change:

$$\text{Gap (inches)} = .000078 \times \Delta T \times L'$$
$$\text{Gap (inches)} = .0000067 \times \Delta T \times L'' \times 12$$
$$\text{Gap (inches)} = .0000065 \times \Delta T \times L'' \times 12$$

Simple Algebra says that we can multiply any number in the equation. If we multiply 12 x .0000065 then we get .000078. When we use .0000067 we get .00008. So if you haven't dosed off by now, I would recommend the top formula which measures the length of rail in feet instead of inches. The difference between these formulas is only ¼" for 1,000' of rail with a 100° temperature change. In the real world it means nothing. If anyone has comments on this, please let me know. Thanks.

How much does Rail cost?

It almost depends on the hour of the day but steel prices have gone up, up and away. New rail is in the range of $1,500 per ton. #1 relay rail is near $1,000 per ton. New rail is purchased by the gross ton (2,240 pounds) and relay is measured by the net ton (2,000 pounds). Scrap steel is at an all time high of about $530 per ton and I have heard as much as $610 per ton. In 2004 we saw a big jump in steel pricing, then a slight rise in 2007, then in April of this year it went off the charts. The driver of all this is heavy exportation and the decreasing value of the dollar. The experts seem to think that a steady rise will continue into the 3rd quarter with a slight drop in the 4th quarter of this year. The re-roll market should stay strong with a possible increase of $50 or $60. When I look back on some of the old bids, as contractors we were paying between $500 to $700 per ton for new rail depending on the delivery point. This held true until about 2002, then the surcharges came and by 2004 we were paying $1,000 per ton. Here we are only 3 years later paying $1,500 per ton. It is near impossible to get a rail supplier to hold his price from morning to afternoon. So what to do?, what to do?



These are 80 footers

What are the APTA Standards?

The American Public Transportation Association (APTA) developed a set of minimum safety requirements that all Rapid Transit Authorities that are not under FRA jurisdiction must abide by. They had until September of 2006 to be compliant. These standards and recommended practices are for inspection and maintaining Rail Transit Systems. There were 241 volunteers represented by 25 Transits, FTA and Wabtec that wrote them. These standards do not apply to Commuter rail nor will APTA enforce them or hold any liability. A Transit may request a waiver due to different conditions. The written standards were voted on with one vote permitted for each agency and a 75% consensus is required for approval. The book contains Standards which are deemed to be safety critical and recommended practices which are not safety critical. They follow the same basic format as the FRA 213 but with much more pertinent material such as high water conditions, 3rd rail, catenary and storing material along the ROW just to mention a few. There are 6 volumes (Background, Vehicles, Grade Crossings, Operating Practices, Structures and Signals). It addresses embedded track and DF track. It is very well written and very appropriate.

Who are the big companies?

According to Engineering News Record, 2006 revenues posted in the United States are as follows:

- The top 500 design firms: $70 billion up by 18% from 2005

URS	$ 3,252,000,000. Total World $ 3.6b
Jacobs	$ 2,298,000,000. Total World $ 3.2b
Parsons	$ 1,203,000,000. Total World $ 1.5b
Bechtel	$ 1,018,000,000. Total World $ 2.1b
Fluor	$ 927,000,000. Total World $ 2.7b
HDR	$ 792,000,000.
Parsons Brinkerhoff	$ 671,000,000.
HNTB	$ 524,000,000.
STV	$ 357,000,000.

- The top 400 Contractors:$ 263 billion up by 12% from 2005

Turner Corp	$ 8,244,000,000
Bechtel	$ 6,436,000,000. Total World $ 15.3b
Skanska USA	$ 5,072,000,000. Total World $ 15.7b
Keiwitt	$ 3,841,000,000. Total World $ 4.5b
Walsh Group	$ 2,929,000,000.
Perini	$ 2,888,000,000. Total World $ 3.0b
Balfour Beatty Const.	$ 657,000,000. Total World $ 9.1b
Herzog	$ 264,000,000.
Stacy Witbeck	$ 203,000,000.
Railroad Construction	$ 174,000,000.

Now you have it. Remember these are only the companies that reported revenues. The 2007 statistics should be out soon and we will offer an update on the same companies. I have only shown some of the companies that have Rail connections.