The Track Guy NEWSLETTER

Fall, 2010

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934 Royal Court, Canonsburg, PA 15317 Office: 724-873-7333 Fax: 724-873-5733
Cell: 973-222-1300 — E-mail: zuspan@trackguy.com — Website: www.trackguy.com
by: John Zuspan, Track Guy Consultants

Some Bid Results

Lindenwold Diamond Interlocking

1.	Railroad Constructors	1,641,000
2.	Railroad Construction	2,261,000
3.	Railworks	2,884,000

Rail Rehab, Calverton, NY

1.	Railroad Construction	3,497,000
2.	Railworks	3,677,000
3.	Railroad Constructors	3,949,000

Tunnel Rehab, Coshocton, OH

1.	Atlas Railroad Const	4,978,000
2.	Balfour Beatty Rail	5,179,000
3.	Delta RR Const.	5,681,000

Crossing Rehab, Michigan

1.	Armond Cassil	5,412,000
2.	CR Construction	5,565,000
3.	Delta RR Const.	6,000,000

Track Guy Consultants

We seemed to have missed winter, 2010, Spring, 2010 and Summer, 2010 but here we are again with the Fall of 2010 issue. Our work has exceeded every expectation and we look forward to continued work activities. We have trained over 750 people so far this year and still have a number of training sessions to do until 2011. We have been asked by the University of Wisconsin to develop a Project Management class that is directly geared toward the Railroad Contractor. It will be offered in Philadelphia with anticipated dates of March 2-4. It has always been part of my mission to share my learning experiences with the industry that has helped me achieve a better quality of life over the years. We are getting into some Lawyer stuff now as far as expert witness and evaluating situations. Need to be careful what I say so I will leave it at that. No exotic travel lately but work in the US has been very plentiful. Our CWR and FRA classes are doing well and we decided to offer them to the general industry and will be doing the CWR class on January 25, 2011 and the 2-day FRA class on January 26 and 27 at the Hilton Garden Orlando Airport Hotel. See our website for details and registration. These are both qualification classes and a good idea for anyone doing maintenance, construction or inspection on Railroad Track with continuous welded rail or under FRA Track Safety Standards. Not a bad place to be in January.

Spotlight: Contracting in the Rail Industry

In our Spring of 2008 issue we listed a few Contractors and what their rating was in the ENR Top 400. In our Summer of 2009 issue we updated a couple companies. This time we will show a trend from those 2 and the latest for 2009. The headlines in the May 17, 2010 issue of ENR say "Concerns grow as backlogs shrink". It goes on to further list a 14% drop in total revenues from 2008 to 2009. It also says that 78% of the companies saw a decline in revenues from 2008 to 2009. I don't know what all this means because I am not an economical analyst but I can show you the numbers for the Contractors that are either 100% rail or have a rail component. We will simply show a table for these companies.

In millions $	2006	2008	2009
Railworks	————	390	416
Herzog	264	385	401
Stacy & Witbeck	203	351	351
Skanska	5,072	————	5,700
Keiwitt	3,841	————	8,820
Balfour Beatty	657	————	3,950

This is only the US market. Skanska does 15.7 billion world wide and Balfour Beatty does 9.1. Skanska has remained the same in their ranking, Balfour Beatty has moved from #28 to #14. Railworks from 146 to 138, Herzog from 188 to 145 and Stacy from 212 to 171. This is from 2008 to 2009 ranking. Does this mean that the Rail industry is booming? My mind says absolutely. As other industries have seen plummeting revenues, the rail industry has shined and continues to rise during this so called recession. Do you think Warren Buffett saw this? Even in our little piece of the action as Track Guy Consultants, we have seen growth throughout the realm of what we do. I think we all see the future for the Rail industry and it is bright. Phil Stout predicted this a long time ago and it is finally here. The country and the Politicians see the need for fuel efficiency and mass transportation of people and goods. ***Hold on for a great ride.***

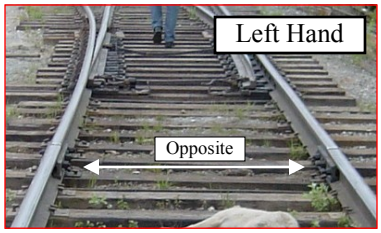
Ask The Track Guy

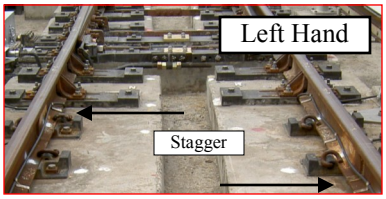
TRACK GUY CONSULTANTS

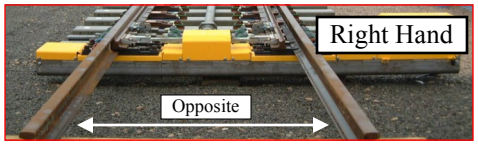
This is where you, the reader get to ask questions about Railroad Track engineering, design, construction, maintenance or anything to do with Trackwork. Simply write or e-mail a question and we will answer in a timely manner. Some questions will be published here.

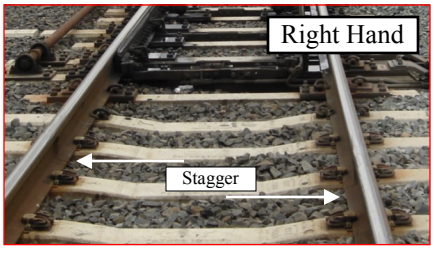
What is the correct joint stagger ahead of the Point of Switch ?

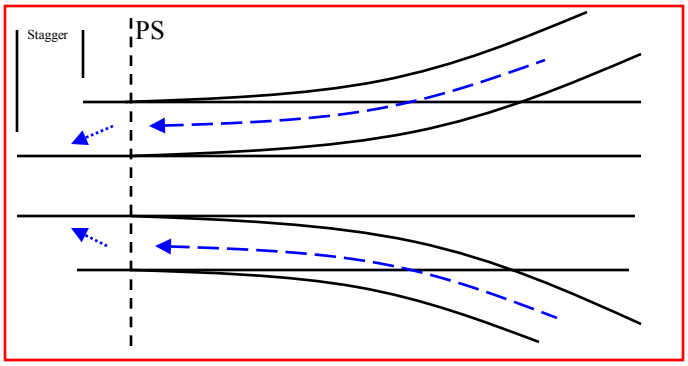
I find this an interesting question because when I went to the AREMA manual, I found something that is different than the way I was taught and the way I have built turnouts for the last 30 years. When I went a little further and started to look at some of the photos I have taken from other properties it is different. Some have the stagger with the joints staggered in the direction of the turnout side, others are the opposite and others are even with each other. Just another classic example of "it depends who you talk to". So what does it matter? Let us imagine a train making a reverse move from the turnout side. It will take a boggy about 5 feet before the trailing wheel or axle becomes perpendicular to the rail after leaving a curve. By putting the joint on the straight side further away from the point of switch will not allow the front wheel to apply outward force on that joint. The axles will be perpendicular by the time the entire boggy reaches that point. This is very difficult to describe and I am not even sure that this is the reason because sometimes the old timers we learn from may not have it right because they heard it from their old timer. See the sketch for a better description hopefully. I would enjoy some e-mails on this subject so we can get a consensus. In the AREMA Manual Trackwork Plans it shows the joints opposite, staggered one way and staggered the other way. On Plan 911-41 (straight split switch) it shows the stagger for left hand turnouts with the shorter leg on the curved stock rail and on the right hand turnout it shows the shorter leg on the straight stock rail. Plan 921-52 (curved split switch) is the same. The MBTA in Boston shows the joints opposite each other if they are welded, otherwise short leg on curve stock rail, however 2 drawings show the stagger the other way.











The stagger of the joints ahead of the switch point should be as shown above, in my opinion. The small arrow represents the driving force of the lead wheel before it straightens out.

Can you use 78' rails for jointed track ?

We can but it will cause some big headaches over time. 78 foot rails were made to eliminate half the shop welds when making CWR which reduced the risk of a broken weld. In 1989 when the steel mills went to the continuous casting method and put roller straighteners in the line, it was relatively easy to roll out 80 foot rails. Only thing different is that the blooms are cut longer from the continuous caster. Prior to some of this technology it was difficult to get a straight rail. It is unfortunate that some properties may think that 78 foot jointed rail track helps. If you are in a climate that never changes its temperature by more than 50°, then maybe this would be OK. Let us exam and calculate what happens when the temperature drops. We know that the gap in the rail can be calculated by the formula: 0.000078 x ΔT x L. If we use this for 78' rail then for a 100° temperature change then a gap of ⅝" must be left at every joint. This cannot be achieved since the most play we have in the holes of a joint is ¼". If we do a little Algebra we determine that a ¼" gap only works for a 41° temperature change. If you're neutral temperature is 100° and of course you make the joints tight when building track then when the temperature goes to 59° the rail is pulling on the bolts. If you remember from a previous Newsletter (Winter 2006), a force of about 2,000 pounds for every 1° of temperature change begins to build up. In this example that force begins building at 59° therefore when the rail temperature goes to 0° there is 118,000 pounds of tensile force at every joint. This would be for 100 pound rail, for 140 pound rail the force is 161,300 pounds. One bolt in each end of a joint can handle about a 41° temperature change 2 bolts in each end 82° change and a 6-hole joint can handle about a 123° temperature change. If you build the track when the rail temperature was 123 and it went to 0, a good and tight 6-hole joint will slip and this does not account for any dynamic force. Just imagine the rail end batter you will have with ¼" plus gaps.