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The Track Guy

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NEWSLETTER

Camden, New Jersey

The Delaware River Port Authority (PATCO) placed an offering for renewal of all their interlockings. 14 interlockings will be upgraded. 5 are in the tunnel and 9 are at grade. Also surfacing, lining, tamping, shoulder cleaning and vac truck work will be performed. Electrical signal, power and negative work is also part of this contract. The bid date was August 24th. The Bid results are as follows:

1.	Railroad Construction	22,625,000.
2.	Balfour Beatty Rail	25,052,000.
3.	Railworks	28,052,655.

Railway Engineering

The Railroad Engineering 2004 Course and Conference will be held at the University of Wisconsin on October 18-20. This is a 3-day fast paced practical approach to Railway Engineering. Discussions will pertain to design, construction and maintenance of railroad infrastructure. Mike Franke will give the keynote address. Some topics are: Fundamentals of Railroad Engineering (Bob Ahlf), Introduction to design of light rail transit (John Lackey), Design and Construction of Passenger Systems (John Zuspan), Contracting Practices (Larry Laurello) and Track Inspection (Brett Rekola). There will be an industry reception on Monday night to learn new technologies, products and services.

Track Guy Consultants

Track Guy Consultants has signed a 3-year contract with Reliant Energy to perform inspection services and construction management for the Conemaugh Power Plant in New Florence, Pennsylvania. The Conemaugh Plant was built in the early 70's and receives 120 coal hoppers per day. Their car dumper has seen a lot of action over the last 30 years. We performed a full track inspection and life cycle analysis of the 14 mile system and prepared contracts for capitol improvement and a 3-year maintenance contract. Bids have been received and Marta Track has been awarded the contracts. Work will begin in October.

San Diego, California

The Oceanside to Escondido (Sprinter) line has bid and the results are as follows:

1.	Fluor Daniel	187,200,000.
2.	Kiewit	192,700,000.
3.	Granite/Herzog	197,100,000.
4.	Yeager/Skanska	197,500,000.

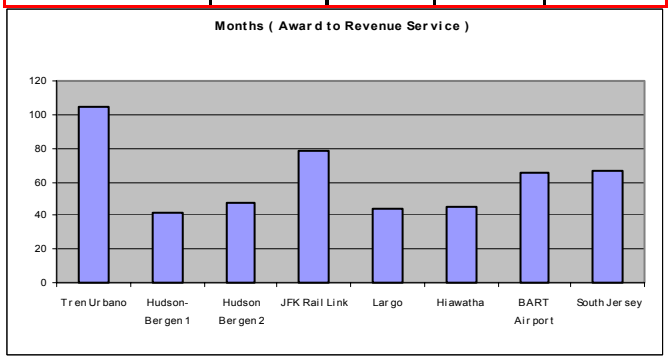
All numbers are rounded off.

Spotlight, Design Build Projects

How long should it take for a DBOM (design, build, operate, maintain) project to be completed? The right answer is; less time than it takes for a conventional procurement method. The beauty of D/B is that construction can begin prior to completion of all design. Typically the owner will produce 30% drawings and design criteria and leave the rest to the successful group to finish. The term "turnkey" was coined many years ago. The concept is simple; the owner will offer a request for proposal (RFP) to design and build an ***integrated system***. At the end of the construction the builder simply hands the key to the system over to the owner. The O&M (operation and maintenance) may or may not be part of the owners responsibility. Revenue collection has always been the owners responsibility. QA and QC are the most important part of the construction and professional qualified people should perform this task. Pre-qualification is an absolute must and regular audits are imperative. There are pro's and con's for each procurement method and choosing the correct approach is the key. All of the projects listed have been successful and the ones in revenue service have exceeded expectations. This issue of our newsletter will only focus on time, the next quarter will be comparisons of cost and scope. See our website under the Value Engineering section for a discussion on D/B.

* Anticipated Opening Date

Project	Award Date	In Service	Months	Type
Tren Urbano	Jun '96	Mar '05*	105	DBOM
Hudson-Bergen 1	Nov '96	Apr '00	41	DBOM
Hudson-Bergen 2	Sep '00	Sep '04	48	DBOM
JFK Rail Link	Jun '97	Dec '03	78	DBOM
Largo	Mar '02	Dec '04*	44	DB
Hiawatha	Sep '00	Jul '04	45	DB
BART Airport	Jan '98	Jun '03	65	DB
South Jersey LRT	Sep '98	Mar '04	66	DBOM



Information is gathered from many sources. It is collected and in some cases interpreted by John Zuspan and may represent his opinion only.

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 PlasTie™?

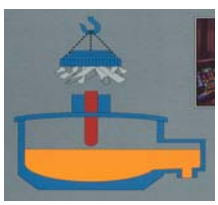
PlasTie™ is an improved oak crosstie. The standard oak timber

is treated with 5 borate capsules, case hardened and grooved longitudinally with dovetails. The tie is given two plastic end caps and then coated with hot plastic under pressure. Will this product serve a need?, absolutely. Creosote has been labeled a probable carcinogen to humans. It causes cancer in lab rats. Creosote has devastated the town of Jerome, Florida where a leaking tank of creosote contaminated drinking water and the Everglades. This is a story right out of a horror flick. The EPA is in the midst of registering creosote again. The last time being 1984 where they banned it from residential use. One of the reasons they did not ban it from the Railroad Industry is because of "no viable alternative". There will always be creosoted ties but the industry must look

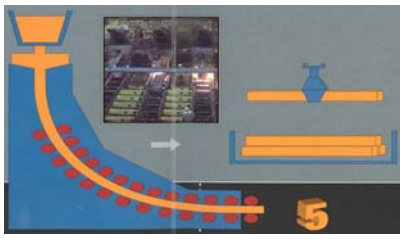
at ***where*** they put them. There are alternatives now and the skeptics are out in full force, as they should be. We have concrete, steel, plastic and now plastic coated ties. They all have there limitations, but only one can do the same or better than the creosoted tie; PlasTie™. PlasTies should be used on every elevated structure within a city. Creosote is dripping all over cars, kids and sidewalks. New York City Transit, Chicago, Philadelphia and other cities need to take a hard look at PlasTie™. Track built in environmentally sensitive areas should use PlasTie™. The wood tie will be with us forever and like everything else, there are new and improved versions of almost every product. It is a simple process of using the right tool for the job. For more information, see our website under new products.

How do you make rail?

Making rail has come a long way since the original pear-shaped rail of 1850. The Steel Age began with the invention of the Bessemer (open hearth) process. The earlier pig iron was just to soft. The open hearth method of making steel was used until the invention of the continuous caster in the mid 1980's. Rail has always been made from the top of the line steel. Up until the control cooling process (1930), rail was brittle and cracked easily. The open hearth method would produce inferior rails from the top of the ingot (A rails) which could only be used in industrial sidings or yards. The continuous casting method does not produce these "A" rails. Making rail starts with scrap metal that is placed in a gigantic ladle.

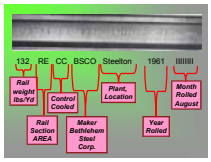


Positive and negative electrodes are placed in the ladle and a short circuit is created that melts the scrap. The same principle is used to heat the rail ends for flash-butt welding. The molten

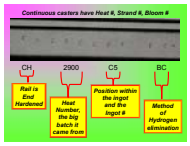


steel is now transported to the next station where the other ingredients are added. After each addition, a sample is tested and when it's soup, the molten metal goes to the top of the caster (10 stories up) and is poured into the caster. The blooms go into the soaking pits until it is time to roll. The heat is maintained until the rolling operation begins. The hot blooms are then rolled through a series of rolls until the shape of the rail is achieved. Rolling is done on it's side. Stamping, straightening, testing, UT and inspection are performed before any rail is shipped. We have a much superior quality of rail today then we had a few decades ago. The process is amazing and the controls are impecable. The Track Guy salutes the steel makers of the world.

What do all those numbers and letters mean on the side of the rail?



The numbers and letters stamped in the web of the rail are the identifiers that track each piece of rail back to which Toyota was melted down to make it. We need these markings to trace the process for Quality Control and in the event of problems. One side is stamped with the size, section, process, manufacturer, location and date that the rail was rolled. These markings stand proud of the surface. The other side is indented with heat #, strand # and bloom # for continous casters. Heat #, ingot #, position in the ingot and methods for the open hearth process.



How is rail hardness affected by field welds and shop welds? Is it the same?

Hardness issues for field welds and flash-butt welds are absolutely not the same. Most specifications require a certain percentage of welds undergo a hardness test and then compare to the rail hardness with no more than a 40bn variation. A flash butt weld can be +35bn only ¼" away from the center. 2½" away from a field weld the reading could be –70bn of the rail hardness. These are the heat effected zones. Extreme care must be taken when performing these tests. For more info call ***The Track Guy.***