

# Additional Issues

## Survey, Subdivision & Development Issues Affecting Surveyors

- Drainage (AREMA C-1)
- Railroad Industrial Development
  - Bad design in industrial parks/plats lead to future grief
  - Almost all the Class 1's have design specs/standards on the web (MOC/CMR uses CSX's standards)
- Fencing & gates (AREMA C-1)
- Pipeline & wireline crossings (AREMA C-1, C-28, C-26)
- Bridge basics & abbreviations (AREMA C-18, C-4 and others)
- Cross section (cut & fill typical example)

# Lease & Contact (AREMA C-1)

- Control & Risk
- Railroad Specifications
- Easements run with the land/leases-contracts-permits **do not!** Railroads was accountability!

Please beware of the trend by some railroad operating departments to delegate these duties to outside railroad contractors.

- BNSF uses Staubach/Bartlett & West
- NS uses DMJM/Harris
- RailAmerica use IMGONLINE
- RAMS used by multiple shortlines

Contract documents & forms commonly now show up on the web. *Lots of problems encountered with owner/developers waiting for the last minute to submit lease documents for approvals. Submit these documents as early as possible!*

# Survey Operations

Topographic Mapping and Plan Sets to Communicate with Railroad Engineers

## MODULE 11

- What the railroads want to see (simplicity, eliminate the clutter)
- Use graphical symbols railroads use in graphical presentations
- Level of detail

# Field Surveying Operations

## Field Construction Layout Staking

### MODULE 13

- Safety Considerations
- Intervals (especially curves (Tangent Points) and turnouts
- Gradelines and key points to identify
- Setting stakes a track foreman can identify and actually use
- AREMA C-24 and Practical Guide

# The Abandonment Issue and ICC/STB

## Abandonment

### MODULE 14

- Abandonment vs. Embargo vs. Out-of-service
- Who is the final arbiter?
- NITU/ Rails to Trails / Rail banking
- Adverse abandonment
- Abuses of the system that affect surveyors
- What happened between 1980 and 1983 with the ICC that affects railroad mapping data as sought by surveyors

# The Abandonment Issue

- Is it abandoned, embargoed or out of service?
- 49 USC 10903....Abandonment Regulations
- 49 USC 10502....Prior Approval Conditions For Abandonment
- National Trails Systems Act 16 USC 1247 (Rails to Trails)
- Principal of Adverse Abandonment (STB Creede & Yakima Valley cases)
- The ICC/STB Dockets For Abandonment (AB- & FD- Prefixes)
- 1996 to Present on-line, on the WEB [www.stb.dot.gov](http://www.stb.dot.gov)
- 1975-1996 at the STB/ICC Library in Washington
- Pre-1975 (1873-1975) Filed At National Archives, Rockville MD
- PLSC and the Trinidad Railway Abandonment Case (AB-573 O X)

# Retracement Tips Abandoned R/W

- Scavenging and detective work pays big dividends
- Gather as many R/W maps as possible (bias)
- If you find standard plans: JACKPOT!
- Old photos, sketches, PUC files, road viewer reports
- Know your local historians and their resources
- History and evidence have value
- Wisconsin statutes/ORC archived files



# Retracement Tips Abandoned R/W

- Locate old fixed objects on R/W
- R/W Posts
- Poleline cut-offs
- Bridge Piling Cutoffs (Match To Standard Plans)
- Old culverts and or headwalls
- Locate limits of cuts & fills, especially on long tangents
- Fixed ties with spike holes still present





# Retracement Tips Abandoned R/W



- Road crossings with ties, tie plates or rail abandoned in place
- Locate limits of ballast & split
- Signal foundations and or signal appliances
- Terrain analysis basics
- Dig for culverts and boxes with covered ends
- Closeout notes, bridge & building records, contracts

# Relevant Indiana & Regional Cases

- **FD-34893** Chicago, Lake Shore & South Bend RR (NS - near Notre Dame University)
- **AB-865 0 X** Honey Creek Railroad vs. Roberts Construction (Henry County, New Castle, IN... What happens when local opinion clashes with federal rule + NITU) **FD-34869?**
- **EP-647 0** Class Exemption for expedited abandonment procedure for Class II and Class III Railroads (Friction between ACSM and AAR)
- **AB-878 0** Adverse Discontinuance - City of Peoria, IL (Peoria Heights Railroad)
- **FD-34783** Indiana Railroad - Acquisition of CP-Soo Line Latta Subdivision (Milwaukee Road, CTH&SE Evansville Line, Fayette to Bedford + Trackage Rights)

# Relevant STB / ICC Cases

- **AB-55 579X** CSX Railroad, Abandonment in Parke & Vermilion Counties (OFA), former C&IW line over Wabash River...
- **AB-556 2X** Railroad Ventures Case (Youngstown, OH, Land swindle
- **FD-34527** Maumee & Western RR/RMW Ventures vs. CSX (rail crossing at Defiance, OH)..senior rights case
- **AB-477-3 X** Graysville & Poseyville Railroad (Owensville Terminal RR)...railbanked line comes back to life and out of the weeds (Gibson & Posey counties)
- **FD-34536** RailAmerica (Indiana & Ohio) - Creation of Chicago Ft. Wayne & Eastern RR from CSX, former CR/PC/PRR main line
- **AB-55 631 X** Terminal Warehouse vs/ CSX (Cleveland, OH abandonment determination)

# Relevant STB / ICC Cases

- **FD-33388 100** Conrail  
Division of Assets to NS  
& CSX (Conrail Breakup  
& Shared Assets)
- **AB-448 2X** SF&L  
Railway/ A&K Materials  
(Sale of west end of  
TP&W Railway, Scam &  
Abuse of STB  
Regulations by a salvage  
and real estate company  
abusing OFA rules)



# Railroad Measurement Science

## MODULE 20

- Track geometry cars (49CFR213) (AREMA C-2)






# Railroad Measurement Science

- Railroad GIS (AREMA C-16)... UP example “Do Maps”
- Track Charts (AREMA C-16)







# GIS & The Railroad Industry

*"The PMV is one of the most powerful, efficient, and cost-effective tools available."*



The Precision Measurement Vehicle brings various components together into one system. Together these technologies produce facility information ready for the digital world.

	Encoder Wheels		Video Camera (left) GPS Receiver (right)
	Laser Rangefinder		Optical Rangefinder

In the following sections, absolute horizontal and vertical (elevation) accuracy results are presented for both real time acquisition using Nationwide Differential GPS (NDGPS) and post-processed input using Continuous Operating Reference Stations (CORS).

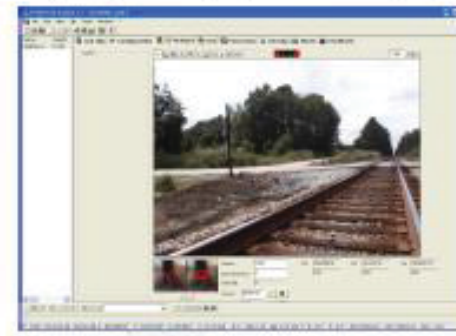


Figure 2: Data Extraction Interface

## Horizontal Accuracy from Video Extraction

The statistics presented in the following table by survey day and correction type for all features mapped using the video extraction.

NOTE: A synchronization malfunction occurred for some of the video sequences for the NDGPS data August 30th. This resulted in large errors that skewed the horizontal results of the test. For analysis purposes the information presented for NDGPS00 includes removal of the outliers extracted from the video sequences (reducing the total number of samples from 174 to 95) as well as the actual results (noted in parentheses for NDGPS00).

# Contact Sheet(s)...Region-Specific

Railroad Name	FRA CLASS	AAR CLASS	MAPPING CONTACT	ENTRY CONTACT	COMPANY CODE	REMARKS:
<p>CSX Transportation <a href="http://www.CSX.com">www.CSX.com</a></p> <p><b>Business Headquarters</b> Corporate Headquarters 500 Water Street, 15th Floor Jacksonville, FL 32202 904-359-3200</p> <p>CSX Transportation Inc. 500 Water Street Jacksonville, FL 32202 904-359-3100</p> <p>EMERGENCY: 1-800-232-0144</p>	1	1	<p><a href="http://www.csx.com/?fuseaction=general.csexp_maprequest_ext">http://www.csx.com/?fuseaction=general.csexp_maprequest_ext</a></p>	<p>Access Permit Shortcut:  <a href="http://www.csx.com/?fuseaction=general.csexp_access">http://www.csx.com/?fuseaction=general.csexp_access</a></p> <p>Flagging: <a href="http://www.csx.com/?fuseaction=general.csexp_flag">http://www.csx.com/?fuseaction=general.csexp_flag</a></p> <p>Property Services - Intercarrier Agreements Attn: Flagging Project CSX Transportation 500 Water Street Jacksonville, FL 32202</p> <p>Phone: 904-633-3404 FAX 904-633-3460</p>	<p>CSX, CSXT  CR(NYC)  B&amp;O, C&amp;O,MON,L&amp;N, CH&amp;D,C&amp;IW</p>	<p>CSX has an archivist/historian and maps for some of its abandoned R/W for B&amp;O, C&amp;O. Contact: Baltimore &amp; Ohio RR Museum <a href="http://www.borail.org">www.borail.org</a> email: <a href="mailto:info@borail.org">info@borail.org</a> 901 W. Pratt Street, Baltimore MD21223 410-752-2490 David Shackelford, Ch Curator x-215 Also see: <a href="http://www.cohs.org">www.cohs.org</a> (C&amp;O)</p>
<p>Norfolk Southern Corporation (NS) <a href="http://www.NScorp.com">www.NScorp.com</a> Three Commercial Place Norfolk, VA 23510-2191 757-629-2600</p> <p>1200 Peachtree St. NW Atlanta, GA 30309 404-529-1734</p> <p>EMERGENCY: Police Communication Center: 800-453-2530</p>	1	1	<p>Norfolk Southern Corporation Robert F. Davenport Jr. 1200 Peachtree Street NE Building Box 142 Atlanta, GA 30309-35797 Phone: (404) 529-1220 Fax: (404) 529-1367 E-mail: <a href="mailto:robert.davenport@nscorp.com">robert.davenport@nscorp.com</a></p>	<p><a href="http://realestate.nscorp.com/realestate/ShowDoc/english/realestate/pdf/right_of_entry.pdf">http://realestate.nscorp.com/realestate/ShowDoc/english/realestate/pdf/right_of_entry.pdf</a></p> <p>Norfolk Southern Corporation Real Estate Department Attn: Right of Entry Application 1200 Peachtree Street, NE, 12th Floor Atlanta, GA 30309</p>	<p>NS, N&amp;W,SOU  CR(PRR)  NKP,WAB,LE&amp;W</p>	<p><a href="http://realestate.nscorp.com/realestate/index.jsp">http://realestate.nscorp.com/realestate/index.jsp</a></p> <p>NS has supported a growing Archive at Roanoke, VA <a href="http://www.nwhs.org/">http://www.nwhs.org/</a></p> <p>Absorbed Algiers, Winslow &amp; Western (AWW)...FD-34839</p>

Copy attached to your handout and also in your electronic files....



# Contact Sheet for Indiana RR's

- List is current as of January 11, 2007
- Please plan to contact railroads EARLY and OFTEN (60-90 days)....Latecomers expecting railroads and management companies to jump through hoops because of a lack of planning on the parts of surveyors, engineers and developers are doomed to fail! Tardiness is hardly an excuse.
- Almost all companies listed are private.
- ISPLS WELCOME TO POST ON WEBSITE
- Communication is good business & good policy.

# Glossary / Common Railroad Terminology

## MODULE 17

- Headblock / Point of Switch
- Point of Frog / PF (theoretical vs. 1/2 “ PF)
- Lead
- Heel & Toe of Frog
- Clearance Point
- Anchor
- Angle Bar
- O.T.M.
- Track Foot vs. Lineal Foot
- Insulated Joint
- Track Throw
- Surface
- Bent
- EE Br. (etc.)
- Dump Plank
- Equivalent Curve (turnouts)
- Degree of Curve
- Gauge Corner
- Gauge Side / Curve Side / Field Side
- Equation

*From multiple AREMA sources among others*

# Websites

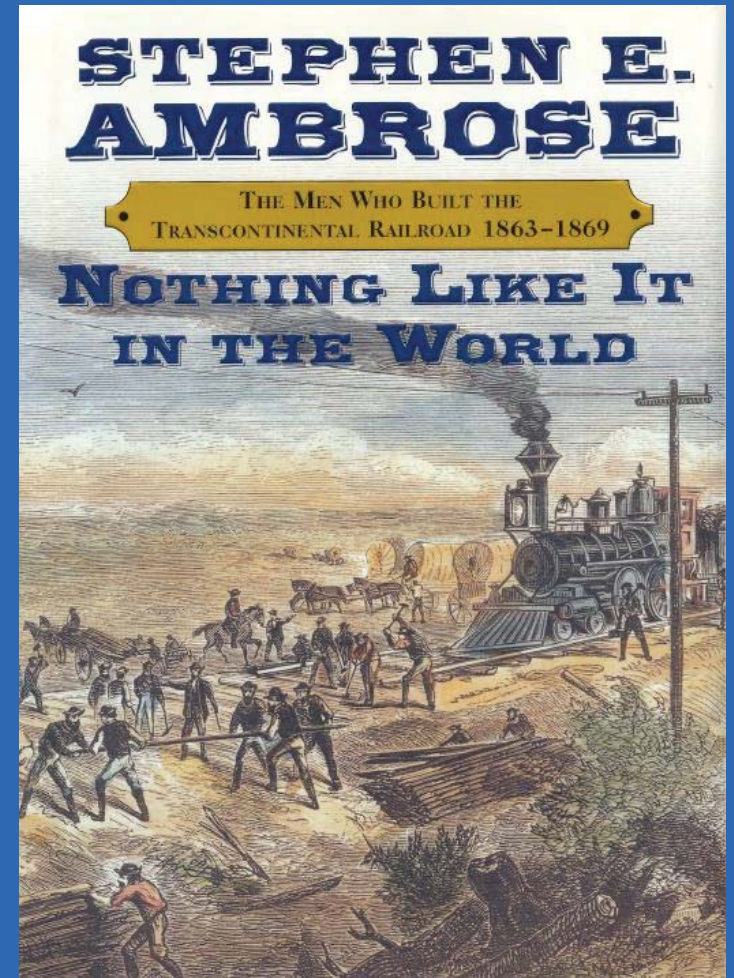
- [www.livegenmi.com/1895](http://www.livegenmi.com/1895) (railroad maps by county circa 1895)
- [www.aar.org](http://www.aar.org) (Association of American Railroads)
- [www.bnsf.com](http://www.bnsf.com) (BNSF Railroad, links to Staubach & Map Requests)
- [www.uprr.com/reus/](http://www.uprr.com/reus/) (Union Pacific Real Estate)
- [www.omnitrax.com](http://www.omnitrax.com) (Colorado Based shortline rr holding company)
- [www.RailAmerica.com](http://www.RailAmerica.com) (owner of 30 shortline railroads and others)
- [www.stb.dot.gov](http://www.stb.dot.gov) (Surface Transportation Board, successor to ICC)
- [www.crrm.org](http://www.crrm.org) (Colorado Railroad Museum - Golden)
- [www.caliper.com/maptitude/fra/init.asp](http://www.caliper.com/maptitude/fra/init.asp) (FRA Crossing Locator)
- <http://memory.loc.gov/ammem/gmdhtml/rrhtml/rrhome.html> (Library of Congress, links to old railroad route maps, historical documents)
- [http://www.in.gov/icpr/archives/databases/land/land\\_off.html](http://www.in.gov/icpr/archives/databases/land/land_off.html) (Indiana State Archives)

# Websites

- [www.AREMA.org](http://www.AREMA.org) (American Railway Engineering & Maintenance Association; successor to AREA)
- [www.ipogo.net/spiral.html](http://www.ipogo.net/spiral.html) (10-Chord Spiral help, “Spirals for Dummies”)
- [www.archives.gov](http://www.archives.gov) (National Archives, NARA-Rockville, MD)
- [www.rrb.gov/cov\\_index2.html](http://www.rrb.gov/cov_index2.html) (Index to active railroads, RRB lists)
- [www.aar.com/ertc/index.htm](http://www.aar.com/ertc/index.htm) (AAR Emergency Response Training Center at Pueblo Test Track...”Rattlesnake Junction Training Facility”)
- [www.contractororientation.com](http://www.contractororientation.com) 49CFR214 awareness trainer for BNSF, Union Pacific and others, need certification for R/O/E
- [www.wyoarchives.state.wy.us](http://www.wyoarchives.state.wy.us) (Wyoming State Archives)
- [upmuseum@up.com](mailto:upmuseum@up.com) (UPRR Museum/ Durham Collection-Council Bluffs IA...Curator Don Snoddy ....Uncle Pete’s attic!)
- More websites linked to your state contact sheet, railroad & museum specific

# Required Reading

- Steven Ambrose's *“Nothing Like It In The World”* (New York: Simon & Schuster; 2000)
- Edward Gillette's *“Locating the Iron Trail”* (Boston: The Christopher Publishing House; 1925)



# Operation Lifesaver

- [www.oli.org](http://www.oli.org)
- In Indiana:

Indiana Operation Lifesaver

Thomas Kinser

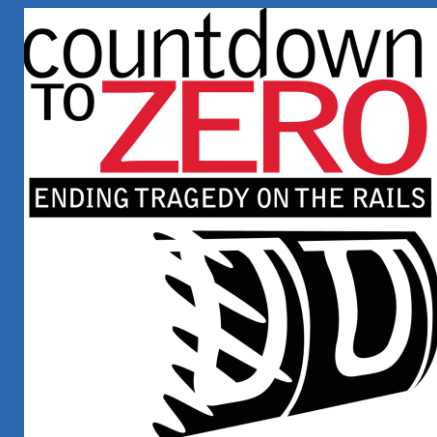
31 East Georgia Street

Indianapolis, IN 46204

317-267-4357 317-267-4011(fax)

[www.inol.org](http://www.inol.org)

email: [kinserinol@prodigy.net](mailto:kinserinol@prodigy.net)



# Farnsworth Group Contact Information

- [www.f-w.com](http://www.f-w.com)
- In Colorado:

Charlie Tucker, LSi

8055 E. Tufts Avenue, Ste. 850

Denver, CO 80237

303-692-8483 303-692-0470 (fax)

303-475-7200 (cell)

email: [ctucker@f-w.com](mailto:ctucker@f-w.com)

# Farnsworth Group Contact Information

- [www.f-w.com](http://www.f-w.com)

- In Illinois:

2709 McGraw Avenue

Bloomington, IL 61704

309-663-8435 309-663-1571 (fax)

-or-

Mick O'Neil

309-689-9888 309-689-9820

email: [moneil@f-w.com](mailto:moneil@f-w.com)



# Questions & Answers