ICC Chaining Notes & Location Sketch
(D&RG Ouray Branch - Colorado 1918)
Pop Quiz!

What goes on here?
Field crews picking this data up?
Rail data supplied in your electronic files
Recovering Railroad Records

MODULE 4

• Mapping (AREMA C-1, C-16)

• ICC Valuation Maps
  – ICC Act of 1913 / Balanced Taxation
  – Evolution of Alignment (Line changes)
  – Variation in Cadastre, Original Purpose of Maps
  – Format & ICC Instructions

• Profile Maps
  – Changes in Grades
  – High Water Data
  – “engineer’s profile chaining”
Recovering Railroad Records (Sources)

- Records (AREMA C-16, C-11)
- Standard Plans
  - Respecting the past
  - Retracement clues
  - Old monumentation / what it was
  - How it was put together
- Bridge records
- Fence records
- Crossing records
  (public/private/company
- Rail record / pipe & culvert record
- Crossing frog record
- Clearance record
  - safety and alignment issues
- Building records
- Curve record
  - Evidence of change, line changes
OREGON Fence Law

- THERE IS NOTHING IN THE LAW THAT SAYS THE FENCE HAS TO BE PLACED ON THE BOUNDARY/PROPERTY LINE................. (DOG FOOD PREVENTION DEVICE?)

- RAILROAD FENCES TYPICALLY ARE PLACED WHERE THEY CAN BE MAINTAINED AS A BARRIER

- RAILROADS KEPT RECORDS ON WHERE THEIR FENCES ARE, THERE WERE ICC FIELD NOTES AND CONTRACT DOCUMENTS THAT CALLED OUT FENCES...
Evidence & Data Collection

MODULE 10

- Rail (AREMA C-4)
- Hierarchy of typical railroad control
- Who owns what? (of joint lines, union railroads, trackage rights and such…)
- Sources: Where to find?
Reference Material/Supporting Documents

• The Railroads (Current Data & CADD updates)
• The Courthouse (amazing stories of what is on hand without their knowledge!, Careless map storage)
• Oregon State Archives – 800 Sumner St NE Salem OR
• [http://sos.oregon.gov/archives/Pages/records.aspx](http://sos.oregon.gov/archives/Pages/records.aspx)
• ODOT HQ File Archives
• Colorado Railroad Museum – Golden, CO (Myreck Collection)
• NARA (National Archives & Records Administration, Rockville, MD) **RIP-91**- copies to be reprinted 2/07? (Also RIP-116)
• Stanford University Main Library / Special Collection (SP)
• Mercantile Library/Barriger Collection (UM-StL)
Researchmanship

• Mapping, records, standards and contracts……..
• ICC Federal Mandate, Tax Basis
• GLO/BLM Filing Maps
• R/W & Track Maps, Track Charts
• Additional RR Cadastral Mapping
• Land Schedules
Researchmanship

• Bridge Records
• Elkins Act Contracts
• Building Records
• Closeouts (AFE’s AFR’s)
• Secretary’s Office (deed & contract)
• Standard plans
• Chief Engineer’s Standard Instructions
• AREMA Manual
Researchmanship

- Track charts (schematics)
- Pipeline/water/wells/fueling facility diagrams and handwritten records
- Lease & Contract/ License Agreements
- Permits/ File Records Folders (UPRR)
- Location Engineer’s Profile Maps
- Fence/Crossing/Sidetrack/ Clearance
Curves (AREMA C-5, C27)

MODULE 6
• Curve Definition (Arc vs. Chord)
• Spiral Curve
  – Talbot 10-Chord
  – Searles
  – Tapers (Including SP’s Hood)
  – (The great passenger train wars, “Speed is King” between NYC & Chicago circa 1890-1910, especially in Michigan and Indiana - CSS & SB speed merchants)
• Stringline Solution (62 Foot Chord)
• Machine Curves (understanding what a machine does, how it “thinks” - Chord offsets and what a plotted curve looks like (Fairmont [Canron & Jackson] & Plasser typical machines)
• Crosslevel / Profile grade line in curves
• Field Practice (marking, tags, intent)
Searles Spiral Notation

- Curve in the field is anything BUT the curve on the map (Use 3-Point on a Curve Solution and be prepared to dance with the devil in survey hell!)
- Searles vs. AREMA / AREA 10-Chord Spiral
- The track may show spiral data on the map, but the right-of-way is most likely NOT spiraled (99% of the time)…Look for the original intent!
Curve Tags / Spiral Parts
String Line Solution and Machine Curves

- String line solution and machine graphed curves smooth the curve given existing track conditions...
- These curves are not engineering or survey correct.
- Over time, curves tend to get elongated, have doglegs at the ends & main body of curve gets pulled to inside of cut/fill.
Track Liners
Track Liners continued
Design & Technical Considerations for Surveyors & Civil Engineers

MODULE 9

- Road Crossing (AREMA C-5)
- Public Works Engineers
- Local PUC’s and State Railroad engineers
- Implied liability of locating or reconstructing road crossing in a given area with bad profile/alignment/vision distance, etc. or just staking for construction by others
- Train Horn Rule implications
Signal Implications

AREMA C-36, C-37, C-38

• Train Horn Rule Implications

• Vision Distances

• Upcoming Federal Private Crossing rules(s) & comment (8/29/06)