AREMA COMMITTEE 30
MINUTES FOR FALL 2015 MEETING
JW Marriott Starr Pass Resort
Tucson, Arizona.

Day 1 (Thursday November 5th)
0800 – Safety Briefing (Lewandoski)
0810  State of AREMA
    Committee 30 Scholarship currently at $1,722. Funds due by 12-1
    2016 Call for Papers deadline in 12-1
    2016 Scholarship application deadline is 12-11
    Booth sales for the 2016 conference are now open. Currently 70% sold to date.
    2016 AREMA Conference is August 28th – 31st in Orlando, FL

0820 - Introductions
0825 – Sub-Committee Chairs introduction and agenda
    - Sub-Committee A (Recommendations for further investigation and research)
      Jose MediaVilla
    - Sub-Committee B (Revision of Manual) Greg Grissom
    - Sub-Committee 1 (Testing) – Vacant
    - Sub-Committee 2 (Wood Preservation) Stan Thomas
    - Sub-Committee 3 (Collaborate with AAR and other research) Conrad Rupert
    - Sub-Committee 4 (Concrete Ties) John Bosshart
    - Sub-Committee 5 (Fasteners) Scott Tripple
    - Sub-Committee 6 (Engineered Composite Ties) Rich Lampo
    Other (Steel Ties) Tom Price

0845 – UIUC Presentation (Edwards)
0915 – Review current ballots
0945 – Break into subcommittees

Day 2 (Thursday November 6th):
Meeting commenced at 7 AM
Chairman Lewandoski did the Safety briefing.

Ballot Review:
Chairman Lewandoski updated the committee on the status of the 2015 ballots. Ballots 1 and 2
passed. Ballots 3, 4, and 5 did not pass and were to be removed down from the website.
Henry(U of I) gave the committee an overview of Ballot 5, on behalf of the Concrete Tie
subcommittee (4). The ballot will have a final review in subcommittee and to be resubmitted for
ballot in 2016.
Chairman Lewandoski proposed that an email notification system be setup when a new ballot had
been posted onto the website, as a way to improve participation. It was suggested that the ballots
be attached to this email, as the website can be down quite often. The committee agreed that this
was a good proposal.
Steve Mattson proposed that AREMA should improve the ballot system. As an example, ASTM
has automatic emails sent to members that don’t vote on a particular ballot. This was suggested as
a potential improvement with the upcoming new AREMA Communities portal on the website.

Future Meetings:
It was announced that the next Spring 2016 Committee 30 meeting would in conjunction with the Tie Symposium at the University of Illinois, Jun 16-17.

TTCI is hosting the annual AAR Research Review on DATE, in Colorado Springs, CO. This will be an opportunity for subcommittee’s to meet if needed.

Discussion on the location of the Fall 2016 will be held at the spring meeting. The only proposed option at this time is in conjunction with the 2016 RTA. This will be held in Bonita Springs, FL, in late October. A Thursday/Friday meeting would be the available option if the committee was to meet in conjunction with the RTA.

**Membership Update:**

Chairman Lewandoski review the committee membership status:

- 68 voting members
- 76 full members
- 116 total members

Chairman Lewandoski noted that the committee leadership will be reviewing membership participation over the last 2 years. The focus will be on who is coming to meetings and who is voting.

Chairman Lewandoski reviewed the current policy of 2 voting members per Supplier Company for each committee. He indicated that this policy seemed to be outdated and that the total number should be improved. He is to propose and improvement to the AREMA Board at the Fall Chairman’s meeting.

**Subcommittee Reviews:**

Stan Thomas reviewed the proceedings of Subcommittee 2 (See Notes).
John Bosshart reviewed the proceedings of Subcommittee 4 (See Notes).
Scott Tripple reviewed the proceedings of Subcommittee 5 (See Notes).
Mike McHenry reviewed the proceedings of Subcommittee 6 (See Notes).

He also led a discussion on the purpose of Table 30.A.1 (details below).

Chairman Lewandoski recommended that each subcommittee assign people to review relevant sections of the chapter for editorial review.

**Table 30.A.1 Discussion:**

Mike McHenry reviewed with the committee, the purpose of Table 30.A.1.
John Bosshart stated that the purpose of the table was to list design values of specific track types, which are representative.

Mike McHenry questioned the data in the tables as much of it is uncited.
Steve Mattson recommended that each subcommittee incorporate the data in the table into the respective section of the chapter. Essentially, moving to remove the table from the appendix.
Jose Mediavilla recommended at a minimum each subcommittee should review the data in the tables to confirm its relevancy and accuracy.
Chairman Lewandoski recommended that each subcommittee should review the appendix tables annually. There is a need to review the tables every time there is a value change in the chapter.
Riley Edwards and Mike McHenry suggested that all values in the tables must have references.

**Peer Review on Ballots Discussion.**
1. One subcommittee submitted several ballots this year. It was determined that the subcommittee only had one member, and therefore no peer review occurred on the proposed ballots.
   a. John Bosshart suggested that all ballots must be presented to the committee before being posted. The committee agreed with the value of this proposition, but did not favor it based on practicality because of the limited meeting time each year.
   b. Jose Mediavilla suggested that each subcommittee ought to have a minimum membership (more than 1 member) from at least 2 organizations.
   c. Bill Moorehead suggested that each ballot must have 3 signatories as a minimum before being posted. The committee agreed with this and Bill made the following motion:
   d. Each posted ballot must have three voting members sponsor it. Each sponsor must be from a different organization.
   e. John Bosshart volunteered to 2nd the motion. The committee voted and passed the motion

New Business:
1. Mike McHenry announced that there will be a Composite Tie Research Day at TTCI on March 29-30.
2. Section 5.6.6.2 was found to need an improvement on the existing citation. This was deemed as an editorial change. Chairman Lewandoski will fix.
3. John Bosshart motioned that the committee take on the topic of Under Tie Pads (UTP) and Under Ballast Mats (UBM) as study subjects. The committee voted in favor of this motion. Chairman Lewandoski will approach the board on this topic.
4. Bill Moorehead asked which chapter would 3rd rail anchorage fall under. He questioned if it should fall under Committee 5, 12, or 30.
5. The committee agreed that all details relating to ties should be in Chapter 30. Chapters 5 and 12 should reference Chapter 30 on topics relating to ties.
6. Chairman Lewandoski will ask the board to add the assignment to committee 30.
7. Subcommittee 4 will take on the assignment. They will work with committees 12 and 17 to incorporate transit information.
8. Steve Mattson requested the current list of assignments for Committee 30 from the AREMA Board.
9. Chairman Lewandoski requested a list of future work from each subcommittee. This information will be incorporated into the list of official assignments.
10. Erik Frohberg asked for a recommendation on the disposal of old wood ties. Specifically he mentioned that the initial marking tends to wear off. He is looking for a better way to identify ties for recommended disposal.
11. John Bosshart proposed a field trip to a wood tie gang. Chairman Lewandoski and Larry Fenwick will work together on a proposal. They are looking at a September/October time frame.

The meeting adjourned at 9:24 AM.
Subcommittee 2 met during the morning of Thursday, November 5, 2015 at the JW Marriott Starr Pass Resort in Tucson, Arizona. Following the general meeting of the entire Committee 30 group, we assembled in a breakout room. There were 6 members present as follows: Stan Thomas (Subcommittee 2 chair), Gary Ambrose, Tim Carey, Bill Moss, Ken Peirson and Conrad Ruppert. The following items of business were discussed.

1. The committee agreed that the content of Section 3.1.4.5 would be more accurately described if the heading were changed from the current “Branding” to “Branding and Marking”. We will be submitting a ballot recommending that change in the near future.

2. Because so many ties being sold to railroads today are being treated with combinations of preservatives, we feel that it is more important that it used to be that ties be marked with the preservatives they contain. Creosote/borate treatments are very common and creosote/copper naphthenate preservatives are being used. Other combinations may be on the market in the future. Disposal options and options for reuse of used ties may be limited according to the preservatives contained in ties so it is important that information be known. We will submit a ballot in the near future adding a paragraph to Section 3.1.4.5 which will recommend marking all ties with identification as to the preservative(s) used.

3. For the same reasons as listed above regarding reuse or disposal, ties removed from track need to be segregated according to preservative type. A comment about this needs to be added to Section 3.5.14 Salvage, and we will submit a ballot to this effect.

4. Over the past 2 to 3 years our committee has submitted a large number of ballots which we feel have resulted in a greatly enhanced and updated “Part 3 Solid Sawn Timber Ties” to Chapter 30. While the most significant of the changes have been made, we will continue to review Part 3 in an effort to search out whatever more refinements might be made to improve the content and relevance of this section. We have assigned each section of Part 3 to various committee members to thoroughly scrutinize for completeness, clarity, and even correct grammar and punctuation. This to be accomplished in time for our spring meeting at which time we can decide on what additional changes to recommend.

The above actions were reported to the full Committee 30 when it reconvened in the morning of November 6, 2015.
1) Presentations with Fastening Sub-
   a) Donovan Holder gave us a presentation on lateral load comparison between Safelok and Vossloh systems
   b) Gao gave us a presentation on rail seat stress distribution.

2) Proposed changes to Chapter 30 lateral peak load distribution environment. (forwarded in late March 2015 to concrete tie sub-committee) - Andrew Scheppe and Sean Lin
   a) Data was from truck performance detectors located throughout the western part of the US. Load detectors were on 3-6 degree curves only without rail lubrication.
   b) Results of discussion: Proposed table for lateral wheel loads and L/V ratio. Edits were made to existing load environment table to put remaining data in more readable format. Additional clarification was made to describe the class of track and maximum track speed. Replaced the lateral load table (all axles) to leading axles only. The leading axle loads give higher lateral loads than trailing axles.

3) Henry Wolf
   a) Proposed methodology for calculating tie design for AREMA Chapter 30 portion on concrete tie design. The proposed changes were forwarded to the subcommittee in late March for review prior to this meeting. Center positive and center negative calculations would change. Comparisons were made between:
      i) Current AREMA recommendations
      ii) Proposed AREMA change under this recommendation
      iii) European Norm standard
      iv) Australian design standard
   b) Change beam support to under rail seat since that is the most in demand / harsh loading. Remove table and substitute formulas.
   c) Instead of seeing on a table the tie length the tie length will placed into a formula.
   d) All assumptions as clearly shown (support, rail seat load, rail seat load area.)
   e) Dependent on axle load, these proposed changes can lead to more efficient design and better performance.

4) Sean developed table for transit systems (light rail, heavy rail, commuter and transit). Definitions of loads which are different than freight loading.

5) New Business
   a) Pedro Lemmertz will work on language for the fall 2015 meeting to organize qualification testing of tie systems dependent on the changes to the complete system. We have three separate sections: tie envelope testing, fastener testing, and complete system testing. As example: a change in the tie design would not necessitate retesting of the fastening system or vice versa.

The meeting was attended by roughly 40 members. Committee appreciated the presentations and work that was developed by the University Of Illinois team members. At the closing committee meeting it was suggested that we annually review tie criteria table.
SUBCOMMITTEE 5 – FASTENERS

There were 5 people present for the meeting. The following items of business were covered.

1) Presentations with Concrete Subcommittee
   a. Comparison of Skl and Safelok I Concrete Crosstie Fastening Systems – Holder
   b. Modeling of Rail Seat Stress Distribution and Relevance to Design Assumptions – Gao

2) Discussion on proposed Tie Pad Test ballot (Still a work in progress. Copy available upon request)
   a. Clarify if load is applied normal to rail foot or bottom of tie
   b. Specify 70 F as standard temperature.
      i. Allow for other temps to be tested at will
   c. Questions as to where wording in C.2 came from. Is this a phrase out of CEN?
   d. Change the cyclic load to 0-30 kips. Specify that force is a downward force.
   e. Section C.5: Change to maximum of 50 kips
      i. Remove “up to a maximum” and change to “up to 50 kips”
      ii. Indicate load is downward
      iii. Change rate to 6 kips/min (continuous load)
      iv. The deflection should be recorded every kip.
      v. Improve the transducer location description, but leave as vague as possible.
         Add wording about transducers being spread out as far as possible
   f. Section C.6: Indicate load shall be released instantaneously, “as quickly as possible”
   g. Section C.8: Change to 24-44 kips and 4-20 kips.
   h. Need a figure.
      i. Dillon Benros will head up the proposed changes

3) Tie Pad Return Test
   a. Vossloh and Pandrol to summarize data on performance after the repeated load test. This will influence final recommendation. Ballot now to be reworked for 2016.

4) Electrical Resistivity
   a. Need to determine water “conductivity” at various locations. (Test labs Vossloh, Pandrol, etc.)
   b. Improve conductivity requirement of water based on standard city water at various locations.
   c. Need to get a recommendation on 10 or 20 kOhm requirement from signaling community.
   d. Scott Tripple to lead effort.

5) Uplift Test
   a. Need to revise the description to eliminate variability.
   b. The description of “separation” is too vague. The method of determining separation has a huge effect on the result of the test. This needs a more serious method to be proposed.
   c. The 1.5P requirement is still under investigation.
SUBCOMMITTEE 6 – ENGINEERED COMPOSITE TIES

After an initial meeting of the main Committee 30, the various Subcommittees broke out for their respective meetings. Mr. Richard Lampo, Chair of Subcommittee 6 on Engineered Composite Ties, called the Subcommittee meeting to order with the following participants. After self introductions, the group proceeded to address the agenda of business items. In attendance:

Rich Lampo (Subcommittee Chair) via phone, Mike McHenry, TTCI, Cory Burdick, Axion William Jordan, Axion, Linda Thomas, LT Resources, Art Schelldorf, American TieTek, Hailing Yu, Volpe Center, Hugh Thompson, FRA, Mike Grubb, Encell Composites, Damon Smith, CSX, Tony Chambers, ABC Tie Tech

1. The first order of business concerned a review of Chapter 30: Tables A-30-1 and A-30-4 in the chapter’s Appendix. The group discussed the purpose and objectives of these tables. Cory Burdick and Mike McHenry stated that in practice, these tables are construed as “standards” or AREMA “specifications.” The group all agreed that these are representative mechanistic parameters for different tie types, but that any indication of performance is not intended. Mike McHenry took on the action item of presenting this question to Committee 30 and attempting to determine a committee consensus as to the purpose of these tables before the subcommittee proposes edits to the tables and/or edits to the introductory text.

2. Rich Lampo presented a proposed ballot item (referred to in this meeting as #1) concerning the definitions provided for Engineered Polymer Composite (EPC) Ties in 5.2.2.1. These edits were in response to discussion at the last subcommittee meeting in the spring. Mike McHenry took on the action item to send out a modified version of proposed ballot item 1. He will propose edits to Rich Lampo’s existing ballot item and send out to the group. The intent is to have this ballot ready for 2016 voting.

3. Mike McHenry offered to have TTCI host a subcommittee meeting and track walk in concert with the spring Annual Review at TTC. The group was in agreement and it was decided that such a meeting will be planned whether an official Committee 30 meeting takes place at this time or not.

4. The group agreed that proposed ballot item 2 (clarifying the citation in 5.6.6.2) was editorial. Mike McHenry took on the action item to send this editorial change to the Committee Chair.

5. Mike McHenry provided the group an overview of the ongoing composite tie research at TTCI and a brief status report. Reports on laboratory testing results and in-track installations are expected in the coming months.

6. Axion representatives stated their desire for the committee, and TTCI to establish an accelerated weathering/wear test. The group discussed the existing Poo Chow method presented in AAR reports R-702 and R915. TTCI will take up the review of this and propose a plan of action to see these types of tests considered for inclusion in the manual. On a related note, Mike McHenry stated that TTCI will be performing AREMA laboratory
testing on TieTek and RTI composite ties recently pulled from the HTL at FAST. The TieTek and RTI ties had been in the HTL since 2000 and 2004, respectively.

7. Tony Chambers introduced himself to the group and stated that he was representing a potential composite tie supplier.

8. The group discussed how we can encourage more railroad participation in the subcommittee. Before the end of the meeting, Erik Frohberg of BNSF had asked to be included in the subcommittee’s correspondence.

9. As in past meeting, fire testing was again a topic of lively discussions. Rich Lampo, Mike McHenry, Tony Chambers, and Linda Thomas discussed fire testing and the usefulness of including a recommended test in the manual. All agreed that this would help standardize the issue and provide some clarity in an area that appears to confuse the industry, particularly those new to composite ties. Tony and Linda took on the action item of sending Mike documentation on the CN 3/4-inch cube test.

10. Hugh Thompson discussed upcoming FRA funding to augment the current work that TTCI is performing on composite ties. Hailing Yu and Mike McHenry discussed, briefly, some ideas for material level characterization of composite ties and how the Volpe Center would be involved in this upcoming work. They agreed to discuss offline and report back to the subcommittee with a status report at the spring meeting.

11. Rich Lampo asked the group to review Part 5 for editorial errors and for clarity prior to the next meeting. This action item was taken on by each individual in the subcommittee.
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