

**RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS
ANNUAL MEETING
GALBRAITH BUILDING AT 35 ST. GEORGE STREET
TORONTO, CANADA**

June 20, 2008

Main Meeting Minutes

1. **Introductions** – 9:00 AM – Carter called the annual meeting to order at 9:00 AM. Carter acknowledged the unfortunate passing of Rex Owen, Chairman of the RCSC, who passed away on June 11th, 2008. Carter thanked Peter Birkemoe and Suja John for making the annual meeting plans and arrangements.
2. **Approval of Agenda** – Carter asked for a motion to approve the meeting agenda, Tide made a motion to accept, 2nd made by McKenzie, approved unanimous.
3. **Approval of the minutes of the June 2007 meeting** – Carter called for a motion to approve the minutes of the 2007 annual meeting. A motion to accept was made by Wilson, 2nd made by McKenzie, approved unanimous.
4. **Resolutions-** Rex Owen had intended to honor past members Ed Estes, Bill Munse and Bill Milek. Carter commented that Owen had intended to include the resolutions in the meeting, but Owen passed away before completing the work. Kulak agreed to work on honoring the past members, Larson agreed to help get details for a future meeting.
5. **Secretary – Treasurer's Report** – Larson passed around a sign up sheet to register meeting attendees and to ask for any contact information changes and corrections.

Larson gave a report to Council regarding RCSC membership status and the current financial position. A summary was given of the current cash flow of the council and expected payables. Larson presented the balance sheet and mentioned the Council is financially sound and might be able to start looking towards new research commitments in the next year or two. He gave a Summary of research payments that were issued during the past year.

Larson reported the membership is active and healthy, with 75 current members. New and unpaid members were mentioned.

Carter asked for motion to approve the Secretary/Treasurer report, Hamilton made a motion to accept, 2nd by Wilson, approved unanimous. Carter noticed introductions were missed and made a call for introductions of members and Guests. Those in attendance introduced themselves.

- 6. Nominating Committee Report** – Tide reported as the Chair of the nominating committee, with Thornton and Tarpay as members. Based on the By-laws of the Council they chose nominees for the open positions on the Executive Committee. Al Harrold and Geoff Kulak were nominated and elected as returning Directors. Joe Greenslade was nominated and elected as a new director. Charles Carter was elected as the new Chairman. Greg Miazga was nominated and elected as the new Vice Chair, and Chad Larson was nominated and elected as returning Secretary/Treasurer.

- 7. Election of Officers and Directors.** All nominees received an acceptable number of votes and the nominating committee recommendations carried through vote of Council. Motion made to accept the nominating committee report made by Gilmor, 2nd by Wilson, approved unanimous.

- 8. Executive Committee Report-** Executive Committee meetings were held in Denver, Colorado on March 13 and on June 18 in Toronto, Canada. Carter reported on the actions of the Executive Committee. He noted that the financial report and cash flow looked positive. AISC, MBMA, and DOT collaboration efforts will be made for future funding. Carter discussed the failed Specification Committee ballot. The required 60% of members did not respond to the ballot, and therefore none of the items passed. The ballot items will be revised and resubmitted. Reminders of the ballot will be sent before the due date.

There was consideration given to try and issue the ballot through the AISC electronic system. Carter will investigate if it is possible.

Additionally, the Executive Committee;

- Approved the Secretary/Treasurer report for the Fiscal Year
- Approved new members
- Authorized the preparation of the Income Tax return
- Appointed a Nominating Committee
- Reviewed the progress of all ongoing research projects
- Approved research payments
- Accepted the Nomination Committee report
- Issued a ballot for the election of officers
- Certified the Election results
- Forwarded items to the Specification Committee

9. Committee Reports -

A.1 – Specification – Al Harrold provided a summary of the actions of the Specification Committee meeting held on June 19th, 2008.

1. Resolution of Ballot Results:

Six items were balloted early in 2008. There were insufficient votes received to make this an official ballot. Discussion was held on each of the six items to resolve comments and negatives that were received on the previous ballot attempt. Modifications will be made to a number of the items.

- a) The proposal to add language to show the proper limits for the preinstallation verification was modified to show the information in a table rather than in text for clarity.
- b) Commentary language regarding thick non-galvanized coatings. Minor editorial changes were made to the previous ballot.
- c) The language regarding thermally cut holes had been balloted with no negatives. During discussion there were concerns regarding the interaction between the Engineer of Record and other parties in the fabrication cycle. There will likely be some addition rewording of the ballot item before the next ballot.
- d) Modify language regarding the removal or retention of burrs on faying surfaces. After discussion, no modifications were made to this item during the meeting.
- e) Proposal to add ASTM F1136 (Dacromet) coatings to various locations in the specification. There had been a number of negatives on this ballot item. The most significant of these came from Dr. Raymond via Mike Friel. After much discussion the committee felt the direction of the proposal with minor editorial adjustments was logical. Dr. Raymond was raising technicalities although he apparently does not find fault with the research conclusions.
- f) A proposal for a revised definition of "snug tight" was balloted. With minor editorial changes this will be ready for the next ballot:

2. Task Group reports were presented.

- a) SI Specification - Roger Hamilton reported that these efforts were being put on hold for lack of interest. After further discussion it was proposed to resurrect this task group with the goal of creating a joint imperial/SI specification rather than separate documents. Roger and Joe Greenslade will be the driving forces on this new effort.
- b) Minimum Shim Thickness - Al Harrold reported minimal progress on this topic.
- c) Calibrated Wrench Inspection - No report was given.

- d) Turn of the Nut Rotation Tolerance - Bob Shaw reported that the TG has basically agreed on a revised proposal that will hold the under tolerance to the current 30 degrees and broaden the over tolerance based on bolt diameter.
- e) Ray Tide presented a brief overview of the efforts expended in regard to modification of shear reduction equations. The primary presentation will be during the Main Council meeting.
- f) Slip Critical Connections - Tom Schlafly presented a review of the work that is ongoing under the auspices of AISC. This includes the meeting that was held in Oklahoma City in May and the research work of Dusicka, Grondin and Hajjar.

3. New Proposed Specification Changes

- a) The title of section 8.2 is proposed to add the words "and Slip Critical Joints". The committee forwarded this proposal to the ballot.
- b) "10 Second Rule" This proposal looks at setting an operational time limit on an impact wrench installation to minimize the risk of bolt breakage. This item was forwarded to ballot.
- c) Tension Calibrator - This proposal removes the word "Hydraulic" from the definition of tension calibrator allowing a broader range of methods for evaluating the pretension force that is created for a given installation procedure. This item was forwarded to ballot.
- d) Verification Frequency - This proposal clarifies the timing and frequency of the preinstallation verification test. This item was forwarded to ballot.
- e) A325T Bolts - A proposal was made to limit the use of the standard turn-of-the-nut guidelines to A325 bolts that are not A325T. Discussion showed that there is some past research available in regard to the acceptability of a fully-threaded bolt for achieving mandated tensile forces under the normal tightening rules. A TG was formed to proceed further on this.
- f) Alternative Holes - This proposal was a carryover from an item on last year's agenda regarding holes other than those sizes shown in Table 3.1. Additional language needs to be proposed for the commentary to insure that all design failure modes have been properly considered. This item will proceed to ballot.
- g) Short Slots - This proposal would relax the rules for the use of short slots without the permission of the EOR. A TG was formed to review this more deeply.
- h) Relubrication - This proposal was a carryover from previous ballot actions. With minor editorial wording changes this item will proceed to ballot.

4. Old Business

- a) Larson discussed the need to review the specification to eliminate references to the old ASTM galvanizing standard and replace those references with references pointing to ASTM F2329.

5. New Business

- a) Skidmore Testing Temperature Tolerances - Ken Lohr presented a series of concerns related to low temperature functionality of the Skidmore tension testing device. There will be an effort to add some language related to these concerns to Table 7.2-1 that is the subject of a current ballot item.
- b) Oversize Holes - Slip Critical - A discussion was held in relation to the concept that just because a connection has oversize holes does not mandate that the connection be considered slip critical. A TG was formed to consider modifications to Section 4 to describe further allowances in regard to slip critical.
- c) Bolt Type Groups - Tom Schlafly led a discussion in regard to whether there is a logical way to group bolt types to avoid needing to spell out every bolt standard in every applicable location in the spec. This is an effort that is already underway for the AISC specification.
- d) Figure C-2.1 this figure shows the bolt head and nut mandatory markings. The update of this figure has been assigned to the Education Committee.
- e) Galvanized Washer Hardness - Chris Curven led a discussion regarding the issue of galvanized washers being softer than an equivalent uncoated washer due to the head of the galvanizing bath. Too low of hardness creates problems for washers adjacent to DTI washers as well as on oversize holes. A TG will evaluate potential specification changes and/or future research requirements.

RCSC/AISC Task Force on Slip Critical Schlafly reported on SC design task group. A copy of his summary will be made available on the website.

There was renewed interest in the SI specification. Hamilton had stopped progress with the loss of a summer intern and asked if anyone would like to take over. There was discussion of a joint specification with the inch series specification. A task group was formed to review the status and needed changes.

A.2 – Research – Jim Ricles provided a handout report detailing procedural steps for the RFP process including payments, schedules, etc. The Executive Committee will further review and distribute to membership after any needed changes or corrections.

A.3 – Membership and Funding – Tide reported that Membership and funding has done well over the past year. A summary of the 5 new members was given. Tide asked for help in recruitment from membership, asking those who already serve to help recruit new members.

A.4 – Education – McGormley reported on the Education Committee meeting held that morning. He handed out sample cards for the Turn of Nut tensioning method to get some feedback. He named some planned topics of education for the general public. He commented on the possibility of an FAQ section on the website. Larson to help develop technical data sheets if needed. McGormley proposed a “Field Guide” for proper tensioning. Approval will be needed from the Executive Committee to move forward. Gilmore noted tyvek paper used in CISC publications. Hay noted that this type of publication would be a valuable item for testing labs and inspectors. Birkemoe noted liability concerns.

Brahimi asked for the Education Committee to put together a presentation group to train the industry. McKenzie agreed with the need for more industry education. Gilmore noted You Tube as means of distribution. Kulak noted idea good but not likely to raise funds and the implementation would be difficult. Deal noted NFDA information is available and we could piggy back with them. Frank noted that it needed to be web based to have the most impact. Metha mentioned implementing a CBI “bolting inspector” program, similar to what other organizations do for welding, for example. Deal noted the need for multiple education levels, like field worker, inspector or fabricator. McGormley asked if there was interest, and the consensus was yes.

A.5 – Liaison Report– Joe Greenslade -

Industrial Fastener’s Institute

The IFI launched a new online technical reference service called the ***IFI Technology Connection***[™]. This site contains over 90% of the tabulated data from the IFI Inch and Metric Standards Books plus the most popular ISO and DIN standards. Subscribers access the data for all dimensional and performance data by using a simple pull-down menu system. Complete fastener information is output in less than 30 seconds. This service is sold on an annual subscription basis.

The IFI has now fully adopted a new Project Management System through which all technical projects are executed. This is based on a series of web conferences of one hour length spaced approximately one week apart. All old projects were completed by early 2008. Currently there are no open projects.

The IFI published standard, IFI-301, The Calibration Requirements and Procedures for Thread Gages, in April of 2008. This is the first comprehensive standard of its kind. It is hoped that this will lead to greater uniformity in the way thread gages are calibrated in the future.

The IFI is publishing a 2008 Supplemental Inch/Metric Standards book containing about 25 IFI standards not contained in the current Inch or Metric Standards Books plus several helpful technical bulletins.

The IFI Technical Committee is prepared to revised IFI-144 as soon as specific proposals are made by Salim Brahimi and Andrew Pfeifer so additional finishes can be evaluated for use on ASTM A490 bolts in the future by the same process used in evaluating Dacromet™.

ASME B1

Most of the activity of the B1 Thread Committee is updating the inch thread gage standard, B1.2. It has been in the revision process for about 10 years. No official target date has been set for completion.

The B1 Committee has authorized the formation of a working group to make a proposal to ISO for some revisions and additions to the metric thread gage standard, ISO 1502, to recognize the USA thread gage designs and sizes. This is the first necessary step before the US can move toward the adoption of select ISO fastener standards as US standards to make us more compatible with the rest of the world to facilitate more US exports of threaded products.

ASME B18

Most of the activities of the B18 Committee are the maintenance of existing documents. There are a few new bolt and nut standards in development, but none that will affect RCSC related fasteners.

The one project that does relate to RCSC related fasteners is a review of the dimensional requirements in the ASME B18 standards and the ASTM standard covering load indicating washers to assure that there are no inconsistencies between the two organizations for the same products.

Efforts are being made to decrease the number of different quality standards published by ASME. There are currently 6 standards and it is felt these can be reduced to two or three. Art Clever, B18 Chairman, announced his retirement the end of this year. A new chairman will be elected at or near the time of the fall meeting.

ASTM F16

ASTM is not going to change A325 hardness and tensile values to be consistent throughout the range as requested by RCSC last year.

The coating of ASTM F1136 (Dacromet) has been approved for coating A490 bolts. A ballot is being proposed for using a different criteria now used in steel fabricating for determining if a type of steel qualifies to be considered "weathering steel". This would enable producers of washers and DTI's to use more readily available steels that are not considered "weathering steels" under the current criteria. Effort is on-going to incorporate a widely recognized test for the acceptance of nicked threads into ASTM F788 and F788M. ASTM approved a definition for "certificate signature" to clarify that digitally generated signatures or quality certificates are acceptable.

SAE Fastener Committee

Very little work is taking place in the SAE fastener committee. Earlier this year they did approve a revision to SAE J1061 defining a test for the determination of the acceptance of nicked threads.

ISO Fastener Committee

After approximately 10 years the ISO TC2 Committee has completed revisions of ISO 889-1, 898-2, and 898-6. These are the foundational standards for the chemistry and physical requirements for bolts, screws, studs, and nuts. They will be balloted in the very near future. CEN EN 14399 -1 through 9 is the European Union structural bolt, nut, washer, and DTI specifications that have been in effect since March of 2005. At the request of one of the IFI member companies the committee that controls this document was requested to consider changing one of its requirements during their spring 2008 meeting. The current standard requires that all components of an "assembly" (bolt, nut, and washers and DTI if applicable) must all be marked with one manufacturer's identification mark. They rejected this suggestion. If anyone would like the IFI review of these standards please send me a request at jgreenslade@indfast.org. Note: The installation guide comparable to the RSCS Standard is CEN/TC 135 N 154 rev. 2007-08

Break – Larson asked for archive information for information relative to RCSC.

10. Research Project Presentations

- Gian Rassati - "Evaluation of the Current Resistance Factors for Bolted Connection Strength". Rassati presented – Report on website or by request.
- Peter Dusicka - "Effect of Fillers on Steel Girder Field Splice Performance" Doubled RCSC funds with contributions with funds from a fabricator and Oregon DOT. Report on website or by request.
- Peter Birkemoe – "Delayed Installation of ASTM F1852 Fasteners". Report will be made available to members upon request.
- Salim Brahim - Hydrogen Embrittlement of Steel Fasteners. Report will be made available to Council members upon request.
- Gilbert Grondin - Final Report – "Fatigue Resistance of High Strength Bolts in Tension" – No presentation given.

11. Technical Presentations

- Squirter DTI research – Birkemoe – Presentation on DTI washer research. Report available to members on request.
- Bolt Shear Value revision – Tide – Summary of shear data used for revision proposal. Tide went through data to eliminate variables. Variables were condensed to eliminate non-critical items. Much of the data was from 50 plus years ago. Tide is proposing a design value change based on the findings. Kulak expressed concern with the values.

Frank gave notice of Structures congress in Austin April 30th to May 2nd. 2009

12. Web Site Re-design – Larson explained the status and lack of progress on the new web site. The new site is cleaner and operational, but there is some difficulty with a member only section or page. Larson will investigate further. Plans were to work with Barry Owen, prior to Rex Own passing away.

13. New Business

- Resolution of negative votes on the 2008 Specification Change Ballot Summary. Details given in Specification Committee report earlier in the minutes.
- Proposed new Ballot Items for pending Specification revision
- Proposed new Ballot Items for pending By-Law revision – See below

There was a proposed addition to the By-Laws wording to revoke voting privileges and membership status for members who have not paid dues for over two years. Shaw moved to approve the change, 2nd by Harrold, approved unanimous. Ballot will be needed and changes will need to be incorporated into the by-laws.

There was a motion made based on a proposal to allow voting by proxy for absent members. Shaw made a motion to accept the proposed Proxy voting wording, 2nd by McKenzie, approved unanimous. A ballot will be needed and changes will be incorporated into the by-laws.

14. Location of 2009 Annual Meeting – Carter called for a vote to have a date and time for the annual meeting. Vermont (Applied Bolting) and Cleveland (IFI) were considered as potential meeting locations. A group vote was taken, with the group deciding on Cleveland, June 18th and 19th. The Executive meeting will be held at IFI on Wednesday afternoon, July 17th.

15. Adjournment –Motion to adjourn at 3:30 by Tide, 2nd by Hamilton, approved unanimous.