



Structural Stability Research Council

NEWSLETTER

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Welcome To The Newsletter

It has been many years since the Structural Stability Research Council has produced a newsletter for its members. Most have never seen an SSRC newsletter. It was a paper document produced before we had email. Hopefully this will be the first of many that you will receive as SSRC members.

This newsletter is written to keep you better informed about SSRC. Copies of this and all future newsletters will reside on the SSRC website at <http://stabilitycouncil.org>. Be

sure to use the website as well to keep up-to-date regarding available publications, stability related courses, the next Annual Stability Conference, etc.

New Stability Design Guide Now Available!

First published in 1960, the *Guide to Stability Design Criteria for Metal Structures* is often described as an invaluable reference for practicing structural engineers and researchers. For generations of engineers and architects, the Guide has served as the definitive work on designing steel and aluminum structures for stability. Under the editorship of Ronald D. Ziemian and written by SSRC task group members who are leading experts in structural stability theory and research, this Sixth Edition brings this foundational work in line with current practice and research.

The Sixth Edition incorporates a decade of progress in the field since the previous edition, with new features including:

- Updated chapters on beams, beam-columns, bracing, and plates. Significantly revised chapters on columns, plates, box girders, curved girders, composite columns and structural systems, frame stability, and arches
- Fully rewritten chapters on thin-walled (cold-formed) metal structural members, stability under seismic loading, and stability analysis by finite element methods
- State-of-the-art coverage of many topics such as shear walls, concrete filled tubes, direct strength member design method, behavior of arches, direct analysis method, structural integ-

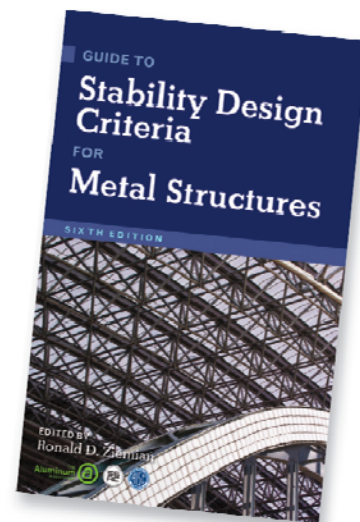
riety and disproportionate collapse resistance, and inelastic seismic performance and design recommendations for various moment-resistant and braced steel frames

Complete with over 350 illustrations, plus references and technical memoranda, the *Guide to Stability Design Criteria for Metal Structures, Sixth Edition* offers detailed guidance and background on design specifications, codes, and standards worldwide.

The best way to purchase the Guide is via the SSRC website at <http://stabilitycouncil.org>.

Inside this issue:

TASK GROUPS RE-ORGANIZE, SSRC ANNUAL MEETING	2
2011 BEEDLE AWARD WINNER, STABILITY DESIGN GUIDE,	3
SSRC ANNUAL CONFERENCE, CO-INTEGRATING EDUCATION	4
SSRC MEETINGS - PAST & PRESENT	5



TASK GROUPS ARE BEING CONSOLIDATED FROM TWELVE TO FIVE (MEMBERS, SYSTEMS, BRIDGES, THIN-WALLED, & EXTREME LOADS)

Task Groups Reorganized

The SSRC Executive Committee decided in their June 2010 meeting to formally consolidate the twelve currently active Task Groups into five new Task Groups:

- **TG02 Members:** Stability of steel members;
Merging of **TG1** - centrally loaded columns, **TG6** - test methods, **TG15** - beams, & **TG26** - stability of angle members.
- **TG03 Systems:** Stability of steel systems, primarily frames;
Merging of **TG4** - frames & **TG30** - bracing.
- **TG04 Bridges:** Stability of metal bridges and bridge components;
Merging of **TG14** - horizontally curved bridges, **TG27** - plate and box girders, & **TG30** - bracing.
- **TG05 Thin-walled:** Stability of thin-walled metal structures as well as aluminum and stainless structures;
Formerly **TG13**.
- **TG06 Extreme loads:** Stability under extreme loads-seismic, fire and blast;

Merging of **TG20** - Compression members & fire, & **TG24** - Stability under seismic loading

TG11 which is 'International Cooperation of Stability Studies' should be included in the mission of all the new task groups.

Final Task Group names, Chairs and Co-chairs of these new Task groups are being confirmed and new mission statements are being developed. The new task groups will meet for the first time on Tuesday May 10, 2011 at the Annual Stability Conference in Pittsburgh.

SSRC Annual Meeting and Task Group Sessions (May 10, 2011)

The SSRC Annual Meeting and Task Group Sessions will be held 10 May 2011 in Pittsburgh. The meeting and sessions are conducted in advance of the SSRC Annual Stability Conference which is conducted in conjunction with the AISC 2011 NASCC: The Steel Conference. The annual meeting and task group sessions provide an important opportunity for structural stability researchers to share their latest findings and to collaborate on transferring stability research to practice. The 10 May 2011 meeting is conducted from 2pm to 8pm and consists of formal presentations, task group meetings, the annual business report and concludes with the

SSRC social hour.

The 2011 SSRC Annual Meeting and Task Group Sessions meetings are of particular importance because they are the inaugural meetings for the recently reorganized SSRC task groups. The five SSRC task groups covering the stability of steel structures from members to systems as well as bridges, extreme loads, and thin-walled structures each will meet and determine new agendas and work products. New chairs and vice (or co) chairs have been selected for each task group and a variety of new efforts are already underway from short courses, to focused international exchanges on stability, to an

effort to solve some of the longstanding and vexing problems in stability – including, of course, angles.

All SSRC members and those interested in participating in the activities of SSRC are encouraged to attend. The meetings represent the world's only annual sharing of research and collaboration focused specifically on the stability of metal structures. We all look forward to seeing you there.

ANNUAL MEETING FROM 2PM TO 8PM, INCLUDES PRESENTATION, GROUP MEETINGS, AND SSRC SOCIAL HOUR

2011 Beedle Award Winner: Professor Nick Trahair



220 papers in these fields. His book *Flexural-Torsional Buckling of Structures* provides a major resource for researchers and designers, while his book *The Behaviour and Design of Steel Structures* (in 6 editions) provided advice on the steel design codes of Australia, USA, UK, and Europe.

The 2011 Beedle Award winner is Professor Nick Trahair. Nick Trahair is an Emeritus Professor of Civil Engineering at the University of Sydney. He has also held appointments at Washington University, the University of Sheffield, and the University of Alberta.

His research and teaching fields are in structural stability, especially the lateral buckling of steel beams, and the design of steel structures. He has published more than

He was a member and co-chairman for 35 years of the committee which developed the Australian steel design codes. The 1990 code AS4100 was groundbreaking, with many innovations which have subsequently been adopted by other countries. He is the principal developer of the computer program LIMSTEEL used by most Australian steel designers. He gave many presentations around Australia and developed many short courses to

assist practicing engineers in the use of AS4100.

He was the recipient of 6 medals, prizes, or awards of the Institution of Engineers, Australia, and of the Shortridge Hardesty Award of the American Society of Civil Engineers.

He has served on the editorial boards of a number of international journals, and has assisted many of them by reviewing papers submitted for publication. He has also represented Australia on a number of committees of the Structural Stability Research Council.

Professor Trahair will give his Beedle Award Presentation: "Wagner's Beam Cycle" in the SSRC Track of the Conference, Session S9 on Friday at 10:00 am.

SEE PROFESSOR
TRAHAIR'S BEEDLE
AWARD
PRESENTATION,
"WAGNER'S
BEAM CYCLE,"
ON FRIDAY, MAY
13, AT 10:00AM
(SESSION S9)

SSRC Annual Stability Conference - 11-13 May 2011



Student participation at recent SSRC meetings has increased

The SSRC Annual Stability Conference will be held 11-13 May 2011 in Pittsburgh. The SSRC Annual Stability Conference, including the presentation of the Beedle Award winner, is conducted in conjunction with the AISC 2011 NASCC: The Steel Conference. The three day conference provides the world's only annual conference focused on stability topics related to steel structures. With 11 technical sessions, and 27 separate papers, the conference provides a wealth of current information on the stability of steel structures.

Wednesday's (11 May) sessions focus largely on bracing and stability issues with two sessions: **S1** W 3:00-4:00pm Stability during Construction, and **S2** W 4:15-5:45pm Bridge Stability and Bracing.

Thursday's (12 May) sessions begin with cold-formed steel stability: **S3** Th 8:00-9:30am Thin-walled Steel Behavior and Design; proceed to important advances in stability analysis: **S4** Th 10-11:30am Stability Analysis; and then cover extreme loads and system stability: **S5** Th 1:15-2:15pm Stability under Fire Demands; **S6** Th 3:00-4:00pm Stability under Seismic Demands; and, **S7** Th 4:15-5:15pm Frame Stability.

Friday's (13 May) sessions again begin with cold-formed steel stability: **S8** F 8:00-9:30am Thin-walled Steel Member Stability; and then are followed by Profes-

or Trahair's presentation "Wagner's Beam Cycle" in the **S9** session F10:00-11:30am Beedle Presentation Session. The afternoon sessions close the conference with papers on a variety of member stability issues: **S10** F2:15-3:15pm Girder and Truss Stability; and, **S11** F3:30-5pm Member Stability.

In addition to the stability presentations listed above there are two stability sessions as part of the NASCC design track. They are **N19** W 4:15-5:45pm & F 8:00-9:30am Design for Stability and **N38** Th 8:00-9:30am & F 3:30-5:00pm Designing for Frame Stability: Non-Seismic and Seismic Loading.

SSRC Continuing Education

The continuing education program at SSRC has been a successful program for interacting with the practicing structural engineering community as well as providing the Council (i.e. SSRC) with a source of additional funding. The continuing education program began with the Bracing for Stability short course developed by Joseph Yura and Todd Helwig. The bracing short course was first presented at the North American Steel Construction Conference (NASCC) in San Antonio in 1995. More than 250 engineers attended the first presentation and the course has since been presented to more than 5000 engineers throughout North America. The course has often been jointly sponsored with SSRC and the American Institute of Steel Construction (AISC).

After the success of the bracing course, a second course entitled *Basic Design for Stability – Columns and Frames* was developed in 2003 by Theodore Galambos, Perry Green, Joe Yura, and Todd Helwig. The course was presented at the 2003 NASCC

conference and then presented at approximate 20 additional cities with co-sponsorship by AISC and the National Council of Structural Engineering Associations. SSRC will be unveiling a new short course entitled Cold-Formed Steel Design for Secondary Building Framing Members at the 2011 NASCC in Pittsburgh. The course is being developed and presented by Roger Laboube and Mike Seek and will undoubtedly be a successful attraction for designers that attend the conference.

In recent years, the continuing education program at SSRC has mainly focused on offering courses at NASCC; however there are often opportunities for presenting the courses at other venues throughout the year. Although the Council

now has three courses that can be offered, we are always interested in increasing the number of offerings that can be presented. If you have an idea for a stability-related topic that could be developed into either a half-day or full-day course please email your ideas to Todd Helwig (thelwig@mail.utexas.edu). While SSRC does offer compensation for the development of short courses, presenting the courses offers the added bonus of exposure to a wealth of practical problems that arise from questions raised by designers that attend the program. These problems often lead to additional material for the courses as well as ideas for practical research topics in the area of structural stability. We look forward to hearing your ideas!

CONTACT TODD HELWIG IF YOU HAVE ANY STABILITY-RELATED TOPICS THAT CAN BE DEVELOPED INTO HALF-DAY OR FULL-DAY COURSES

SSRC Meetings - Past & Present

Some of our newer members might be interested in how the SSRC meetings have changed over the years. Also some of the older members who have not attended a meeting for a while may be surprised with the new format. This article will outline the differences and state the conclusions regarding the successful transition.

Before 2001 the SSRC had its own independent meetings in various cities. The meeting locations and times were selected by the Executive Committee. Decisions had to be made a year or two in advance and consideration had to be given to avoid conflicts with other national conferences that would be of interest to the membership, such as the AISC Conference and the ASCE Structures Congress. The meetings lasted two days and the annual business meeting of the SSRC was included. There were sessions with selected papers that were submitted after a call for papers and there was a half day theme session, which had some invited speakers. Hard copy Proceedings were usually available at the meeting. There was often some type of social event. A major task of the Executive Committee was to determine a registration fee that would not discourage attendance but would still cover much of

the cost of the meeting. There was also an effort to obtain some corporate sponsorship. The annual meetings always lost money. There was a considerable amount of effort required of the Executive Committee, the Director, Administrative Secretary and Technical Secretary.

The meeting costs, the headquarters staff expenses and a downturn in income due to a business recession put considerable strain on the SSRC budget. In 1999 the headquarters were moved from Lehigh University and the staff was reduced. However, the financial situation remained precarious until, after some negotiations, AISC made the generous offer to include the SSRC Annual Technical Session as part of the North American Steel Construction Conference. This eliminated much of the detailed logistics planning and the SSRC was responsible only for planning the technical sessions. Of course, a new format for the SSRC meetings evolved.

The SSRC has its own track in the NASCC for 2½ days with eleven sessions that include about 27 papers. There is an additional day outside the NASCC timeframe when the SSRC has its Task Group meetings, annual business meeting and more sessions with research papers. Two

awards have also made a difference in the SSRC meetings. The Beedle Award is given to a long time SSRC member who has made significant contribution in the field of stability. The recipient is recognized in a NASCC general session and presents a paper in one of the SSRC sessions. The Vinnakota Award is for the best student paper written and presented at the conference, and based on personal research. This has generated considerable interest and has brought a large number of new researchers to the SSRC meetings. Stability related short courses have been developed by SSRC that are often given in conjunction with the NASCC, and at other times given independently in other parts of the country.

The new format is working very well. SSRC has been maintained as a vibrant independent organization. SSRC still maintains a forum where the structural stability aspects of metal and composite metal-concrete structures and their components can be presented for evaluation. This research information on structural stability is published and disseminated. New members are attracted to the SSRC. Finally, the financial difficulties of the SSRC have been eliminated.

THE SSRC HAS ITS OWN TRACK IN THE NASCC FOR 2.5 DAYS WITH ELEVEN SESSIONS THAT INCLUDE ABOUT 27 PAPERS