

STRUCTURAL STABILITY RESEARCH COUNCIL

(Formerly Column Research Council—Established in 1944)

Proceedings
1977

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STRUCTURAL STABILITY RESEARCH COUNCIL

(Formerly Column Research Council—Established in 1944)

Proceedings 1977

The Council has its Headquarters at:
Fritz Engineering Laboratory #13
Lehigh University
Bethlehem, Pennsylvania 18015

Supported by a grant from the National Science Foundation (ENV 76-20825)

STRUCTURAL STABILITY
RESEARCH COUNCIL

Proceedings

1977

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FOREWORD

Among the Council's activities during the past year, the most important one was the

International Colloquium on Stability of Structures Under Static and Dynamic Loads

held in Washington, D. C., May 17 to 19, 1977, under sponsorship of the National Science Foundation.

About 115 people attended the Colloquium, and of the 50 papers, 25 came from outside the United States, representing 13 different countries. The Colloquium was one in a series of four, jointly organized by SSRC, the European Convention of Constructional Steelworks (ECCS), the International Association for Bridge and Structural Engineering (IABSE) and the Column Research Committee of Japan. The three other colloquia were held in Tokyo, Japan, Sept. 1976; Liege, Belgium, April 1977; and Budapest, Hungary, Oct. 1977. Each of the four has published, or is in the process of publishing, its own volume of proceedings, containing the papers and discussions. A joint Summary Report is in preparation which will review, coordinate and juxtapose presentations made on related topics at the four conferences.

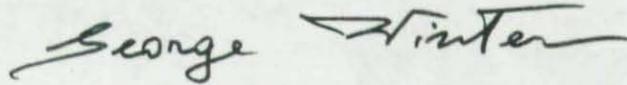
Keynote speakers at the six sessions in Washington were: Structural Dynamics: Ben Kato, Japan; Frames: W. J. LeMessurier, USA; Tubes and Shells: K. P. Buchert, USA; Plates and Girders: P. J. Dowling, England; Beams: Charles Massonnet, Belgium; and Columns and Beam-Columns, T. V. Galambos, USA. The chairmen of the six sessions were: George Winter, Gerard F. Fox, John W. Clark, Jackson L. Durkee, T. V. Galambos and Lynn S. Beedle. Interested readers will find an excellent, brief technical summarization, written by vice-chairman, J. W. Clark, in the News section of ASCE's Civil Engineering, Sept. 1977, pp. 16 & 20.

The organization of this colloquium and the processing of the papers, both for presentation and for subsequent publication, was a major task done under our director, L. S. Beedle, by our small Lehigh staff, Francois Cheong-Siat-Moy and Lesleigh G. Federinic, to whom our sincere thanks are hereby expressed.

In last year's Foreword, I emphasized that the publication of the Third Edition of the Guide had been the major event of that year. By October 1977 approximately 2000 copies of that edition have been sold, a very satisfactory performance for such a specialized monograph.

Another encouraging event is the improvement of the Council's finances, which had shown a somewhat disquieting trend for the last several years. This improvement was caused by several factors. For one, the National Science Foundation's substantial support of the International Colloquium converted what may have been a deficit into a surplus operation. For another, royalties from the Third Edition of the Guide have become an income item, usually most significant for the first year after publication. And last, but not least, Jerry Fox, as chairman of the Finance Committee, continues very successfully in mobilizing additional participating firms and organizations, whose contributions, as always, are essential for our operations.

On a more personal side, we all hope that our vice chairman, John Clark, will recover satisfactorily from a heart attack earlier this year. And we wish to express again our thanks to Headquarters, our director, L. S. Beedle, our former secretary, Dr. F. Cheong-Siat-Moy, and last but not least the always reliable and efficient Lesleigh Federinic, without whose joint dedication this Council would not have functioned.

A handwritten signature in cursive script that reads "George Winter". The signature is written in dark ink and is positioned above the typed name and title.

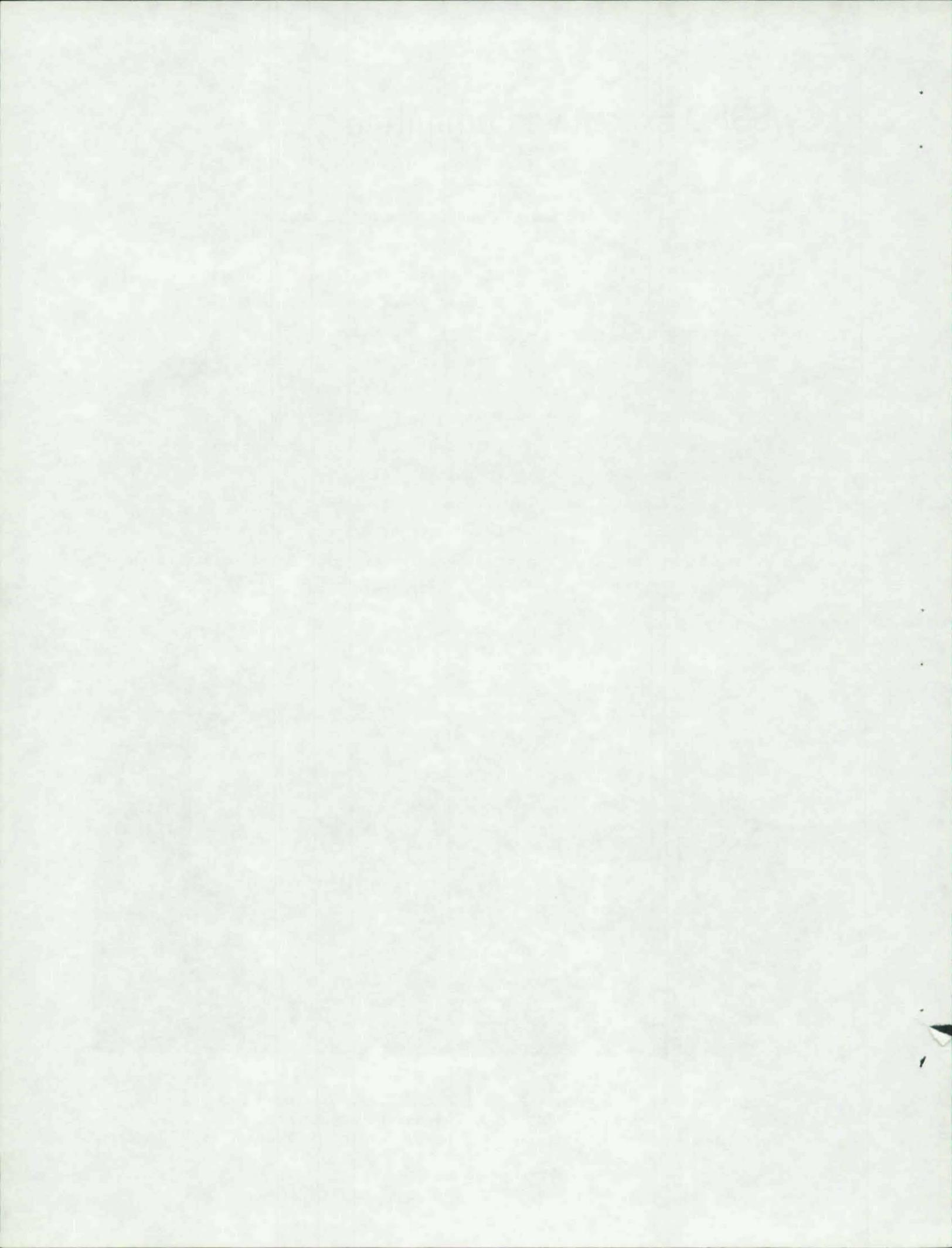
George Winter
Chairman, Structural Stability
Research Council
Ithaca, New York
October 1977

SSRC Executive Committee

G. Winter, Chairman	- Cornell University
J. W. Clark, Vice Chairman	- Aluminum Company of America
L. S. Beedle, Director	- Lehigh University
W. J. Austin	- Rice University
K. P. Buchert	- Bechtel Power Corporation
J. L. Durkee	- Modjeski and Masters
S. J. Errera	- Bethlehem Steel Corporation
G. F. Fox	- Howard, Needles, Tammen & Bergendoff
T. V. Galambos	- Washington University, St. Louis
R. R. Graham	- United States Steel Corporation
T. R. Higgins	- Consultant, AISC
J. S. B. Iffland	- Iffland Kavanagh Waterbury
B. G. Johnston	- University of Arizona
W. A. Milek, Jr.	- American Institute of Steel Construction
J. Springfield	- C. D. Carruthers & Wallace, Ltd.



Back row - K. P. Buchert, J. L. Durkee, W. J. Austin, J.S.B. Iffland,
J. Springfield, S. J. Errera, T. Kanchanalai
Front row - S. H. Iyengar (TG-20), L. S. Beedle, G. Winter, T. V. Galambos,
R. R. Graham



International Colloquium

In 1977, in lieu of the Annual Technical Session, an International Colloquium on Stability of Structures Under Static and Dynamic Loads was held in Washington, D. C., May 17-19, 1977, under the sponsorship of the National Science Foundation.

Summaries of papers presented at the Colloquium will not appear in these Proceedings. Papers presented were published in December 1977 in a separate volume of proceedings, "Stability of Structures Under Static and Dynamic Loads Proceedings of May 1977 Colloquium", by the American Society of Civil Engineers.

The Colloquium program follows.

INTERNATIONAL COLLOQUIUM ON
STABILITY OF STRUCTURES UNDER STATIC AND DYNAMIC LOADS

P R O G R A M

Tuesday, May 17, 1977

9:00 - 9:30 am

- . Opening Address by Prof. George Winter, Chairman of SSRC
- . Remarks by Dr. M. P. Gaus, National Science Foundation
- . Remarks by Prof. T. V. Galambos, Chairman of Organizing Committee

9:30 am - 12 Noon - STRUCTURAL DYNAMICS

Session Chairman: G. Winter, Chairman of SSRC

B. KATO, Japan

Seismic Design in Japan

A. N. KOUNADIS and S. BELBAS, Greece

Dynamic Stability of Columns With Attached Masses Subjected to Periodic Loading

S. M. Holzer, U. S. A.

Static and Dynamic Stability of Reticulated Shells

M. WAKABAYASHI, Japan

Seismic Design of Mixed Steel Concrete Structures in Japan

D. KRAJGINOVIC, U. S. A.

Creep Buckling of a Tied Arch

H. F. KARADOGAN, Turkey

Effects of P- Δ Moments and Rotatory Inertias on the Behavior of Building Structures

T. V. GALAMBOS, U. S. A.

Dynamic Tests on Building Structures (Special Film Presentation)

1:30 pm - 5:00 pm - FRAMES

Session Chairman: J. Springfield, Chairman, Task Group 3

W. J. LEMESSURIER, U. S. A.

A Practical Method of Second Order Analysis

D. BEAULIEU and P. F. ADAMS, Canada

A Statistical Approach to the Problem of Stability Related to Structural Out-Of-Plumbs

H. B. HARRISON, Australia

Large Deformation Analysis of Elastic Columns and Frames

C. K. WANG and C. H. TAY, U. S. A.

Computer Bifurcation Analysis of Rigid Frames with Yielded Columns

G. J. SIMITSES, U.S.A., A. N. KOUNADIS, Greece, and J. GIRI, U.S.A.

Nonlinear Buckling Analysis of Imperfection Sensitive Simple Frames

F. Y. CHENG, U. S. A.

Comparative Studies of Buckling Capacity of Three Dimensional Building Systems

F. M. MAZZOLANI, A. DI CARLO and M. PIGNATARO, Italy

Post-Buckling Behaviour of Multistory Steel Frames

G. KUHN and H. R. LUNDGREN, U. S. A.

An Appraisal of the Effective Length Alignment Charts

M. MARINCEK, Yugoslavia

Comparison of Present Design Rules

E. YARIMER, England

Coupled Modes of Buckling in Frames: Pitfalls for the Analyst

G. W. SCHULZ, Austria

The ECCS Design Concept and Its Application in National Codes

F. CHEONG-SIAT-MOY, U. S. A.

Frame Design Without Using Effective Column Length

Wednesday, May 18, 1977

9:00 am - 12 Noon - TUBES AND SHELLS

Session Chairman: J. W. Clark, Vice Chairman of SSRC

K. P. BUCHERT, U. S. A.

Buckling of Spherical Shells Under External Pressure - Comparison of ECCS Manual and SSRC Guide

J. E. GOLDBERG, U. S. A.

Stability of Ring-Stiffened Cylindrical Shells with Deformable Stiffeners

A. CHAJES, U. S. A.

Buckling of Cylindrical Shells Subject to Hydrostatic Pressure

M. BOOTON and R. C. TENNYSON, Canada

Design Criteria for Elastic Buckling of Circular Cylinders Under Combined Loading

P. C. BIRKEMOE, Canada

Column Behavior of Heat-Treated Cold-Formed Hollow Structural Shapes

A. OSTAPENKO, U. S. A.

Local Buckling of Welded Tubular Columns

B. KATO, Japan
Local Buckling of Steel Circular Tubes in Plastic Region

S. U. PILLAI, Iraq
Design of Rectangular Hollow Structural Section Beam-Columns

1:30 pm - 5:00 pm - PLATES AND GIRDERS

Session Chairman: J. L. Durkee, Past Vice Chairman of SSRC

P. J. DOWLING, England
Recent Developments on the Inelastic Analysis and Design of Plate and Box Girders

M. ELGAALY, U. S. A.
Correlation Between the Buckling of Uniformly Stiffened and Isotropic Plates

C. LIBOVE, U. S. A.
Buckling of Corrugated Plates in Shear

B. T. YEN and Y. S. CHEN, U. S. A.
Ultimate Strength of Composite Box Girders in Flexure

J. B. DWIGHT, England and K. E. MOXHAM, Australia
Compressive Strength of Welded Plates

C. MARSH, Canada
Thermal Buckling in Sandwich Panel Skins

Y. FUJITA, K. YOSHIDA and M. TAKAZAWA, Japan
On the Strength of Stiffened Plate Structures

Thursday, May 19, 1977

9:00 am - 12 Noon - BEAMS

Session Chairman: T. V. Galambos, Chairman, Task Group 13

C. MASSONNET, Belgium
Design Practices in Europe

J. LINDNER, Germany
Developments on Lateral Torsional Buckling

Y. FUKUMOTO and M. KUBO, Japan
An Experimental Review of Lateral Buckling of Beams and Girders

D. P. duPLESSIS, South Africa
Lateral-Torsional Buckling of End-Notched Steel Beams

R. A. LABOUBE and W. W. YU, U. S. A.
Effective Web Depth of Cold-Formed Steel Beams

S. T. WANG and R. S. WRIGHT, U. S. A.
Torsional-Flexural Buckling of Locally Buckled Beams and Columns

G. C. LEE, U. S. A.
Stability of Tapered Members

S. KURANISHI, Japan
Load Carrying Capacity of Fixed Arches

M. HORNE and L. J. MORRIS, England
The Design Against Lateral Instability of Haunched Members Restrained at Intervals along the Tension Flange

1:30 pm - 5:00 pm - COLUMNS AND BEAM-COLUMNS

Session Chairman: L. S. Beedle, Director of SSRC

T. V. GALAMBOS, U. S. A.
Effects of Imperfections on Column Stability

W. F. CHEN, U. S. A.
Theory of Beam-Columns - The State-of-the-Art Review

A. R. GENT, England
Plastic Column Behaviour and Design at High Axial Loads

U. VOGEL, Germany
New German Rules and Research on Beam-Columns and Frames

D. H. HALL, U. S. A.
A Method for Parametric Studies of Column Strength

L. FINZI and C. URBANO, Italy
Minimizing the Number of Buckling Curves in the Codes

P. G. SANDFORD, Canada
CISC-CSICC Column Selection Program 3

R. W. FURLONG, U. S. A.
Composite Columns - A Bridge Between AISC and ACI Regulations

M. TOMII, K. YOSHIMURA and Y. MORISHITA, Japan
Experimental Studies on Concrete Filled Steel Tubular Stub Columns Under Concentric Loading

M. WAKABAYASHI, Japan
A New Design Method of Long Composite Beam-Columns

V. KALYANARAMAN, T. PEKOZ and G. WINTER, U. S. A.
Overall Column Stability After Local Buckling

J. W. CLARK, U. S. A.
Eccentrically Loaded, End-Restrained Aluminum Columns

1977 ANNUAL BUSINESS MEETING

The Structural Stability Research Council holds an annual meeting for the purpose of reporting activities, election of members and officers, and presentation of the budget for the following year. The 1977 Annual Meeting was held on May 19, 1977, in conjunction with the International Colloquium on the Stability of Structures at the Capital Hilton Hotel, Washington, D. C.

The minutes of the 1977 Annual Meeting follow:

CALL TO ORDER

The meeting was called to order at 11:20 a.m. by the Chairman of the Council, Prof. George Winter. Fifty-one persons were present.

The Chairman introduced himself and welcomed the members and friends. He introduced the Vice Chairman, Dr. J. W. Clark, the Director, Dr. L. S. Beedle, and the Secretary, Dr. F. Cheong-Siat-Moy.

INTERNATIONAL COLLOQUIUM ON STABILITY OF STRUCTURES

The Council's Chairman pointed out that the Colloquium was progressing very well with good attendance. He thanked the representative of the National Science Foundation, Dr. M. P. Gaus and the Foundation itself for providing financial support for the conference. He also thanked the Organizing Committee consisting of Prof. T. V. Galambos, Dr. R. Bjorhovde and Dr. F. Cheong-Siat-Moy, as well as Dr. L. S. Beedle and Mrs. L. G. Federinic, for making all the arrangements available at the Colloquium.

EXECUTIVE COMMITTEE

Election of Officers: The Nominating Committee, chaired by L. W. Lu, nominated the present Chairman and Vice Chairman, G. Winter and J. W. Clark, each for a one-year extension of their present terms.

Election of Executive Committee Members: The Nominating Committee re-nominated incumbents K. P. Buchert, S. J. Errera and J. Springfield, for three-year terms on the Executive Committee.

The motion that the five nominees be elected was carried unanimously.

MEMBERS-AT-LARGE

The following persons were nominated for election:

- S. T. Wang, University of Kentucky
- C. J. Miller, Case Western Reserve University
- F. Cheong-Siat-Moy, Lehigh University

The motion that all nominees be elected as Members-at-Large was carried unanimously.

FINANCIAL REPORT

A summary of the financial status of the Council was presented by the Director, including the proposed budget for the fiscal year 1977-1978. He noted that 1500 copies of the 3rd Edition of the Guide have been sold.

Budget 1977-1978

Expected balance, Oct. 1, 1977	\$ 6,400.00
Income	23,200.00
Expenditures	25,000.00
Expected balance, Sep. 20, 1978	4,600.00

The budget was approved unanimously.

NEXT ANNUAL MEETING & TECHNICAL SESSION

The Chairman announced that the next Annual Meeting & Technical Session will be held in Boston, Massachusetts about May 15-17, 1978. The title of the Panel Discussion will be "Mixed Steel-Concrete Structures".

ADJOURNMENT

The meeting was adjourned at 11:40 a.m.

List of Publications

The following papers and reports have been received at Headquarters and have been placed in the SSRC Library.

Akiyama, H. and Kato, B.

ADVANCED DESIGN FORMULA FOR LATERAL BUCKLING OF H-SECTION BEAMS
SUBJECT TO PRACTICAL RESTRAINTS, presented at Second International
Colloquium on Stability of Structures, Tokyo, Sep. 9, 1976

Baltus, R. and Massonnet, Ch.

USE OF COMPUTER PROGRAMS BOSOR 4 & 5 IN THE STABILITY ANALYSIS OF
TWO CIVIL ENGINEERING STEEL SHELL STRUCTURES, reprinted from
Stability of Steel Structures, Preliminary Report, Second
International Colloquium, Liege, 13-15 April 1977, pp. 609-618

Column Research Committee of Japan

PRELIMINARY REPORT, SECOND INTERNATIONAL COLLOQUIUM ON STABILITY,
Tokyo, Sep. 9, 1976

ECCS/IABSE

STABILITY OF STEEL STRUCTURES, PRELIMINARY REPORT, Second International
Colloquium, Liege, 13-15 Apr. 1977

Ellis, J. S.

DRB 1678-08 PRESTRESSED LATTICED BEAM-COLUMNS, A PRELIMINARY EXPERI-
MENTAL INVESTIGATION, Royal Military College of Canada, Civil Engin-
eering Research Report CE 76-5, July 1976

Frey, F.

NON LINEAR ANALYSIS OF METAL STRUCTURES, reprinted from Stability of
Steel Structures, Preliminary Report, Second International Colloquium,
Liege, 13-15 April 1977, pp. 635-640

Fukumoto, Y., Aoki, T. and Kajita, N.

EVALUATION OF COLUMN CURVES BASED ON PROBABILISTIC CONCEPT, presented
at Second International Colloquium on Stability of Structures,
Tokyo, Sep. 9, 1976

Kato, B. and Akiyama, H.

A PROPOSAL FOR DESIGN FORMULAE OF BEAM-COLUMNS, presented at Second
International Colloquium on Stability of Structures, Tokyo,
Sep. 9, 1976

Kobayashi, S.

SOME COMMENTS ON BUCKLING OF SHELLS, presented at Second International
Colloquium on Stability of Structures, Tokyo, Sep. 9, 1976

LeMessurier, W. J.

A PRACTICAL METHOD OF SECOND ORDER ANALYSIS, PART 2 - RIGID FRAMES,
reprinted from AISC Engineering Journal, Second Quarter/1977

Mazzolani, F. M. and Frey, F.

BUCKLING BEHAVIOUR OF ALUMINUM-ALLOY EXTRUDED MEMBERS, reprinted from
Stability of Steel Structures, Preliminary Report, Second International
Colloquium, Liege, 13-15 April 1977, pp. 85-94

Nishino, F. and Hasegawa, A.

REVIEW OF STRENGTH OF TRANSVERSELY STIFFENED PLATE GIRDERS, presented
at Second International Colloquium on Stability of Structures,
Tokyo, Sep. 9, 1976

Wakabayashi, M.

A PROPOSAL FOR DESIGN FORMULAS OF COMPOSITE COLUMNS AND BEAM-COLUMNS,
presented at Second International Colloquium on Stability of
Structures, Tokyo, Sep. 9, 1976

SSRC Chronology

- 15 Nov 76 - Executive Committee Meeting, Pittsburgh, Pa.
- 17 Feb 77 - Chairman's Meeting, New York City
- 13-15 Apr 77 - Second International Colloquium on Stability of Steel Structures, Liege, Belgium
- 16 May 77 - Executive Committee Meeting, Washington, D. C.
- 17-19 May 77 - International Colloquium on Stability of Structures Under Static and Dynamic Loads, Washington, D. C.
- 19 May 77 - Annual Business Meeting
- 30 Sep 77 - New SSRC Secretary - T. Kanchanalai vice F. Cheong-Siat-Moy

Finance

	Fiscal Year 10/76 - 9/77		Fiscal Year 10/77 - 9/78
	Budget (approved 3/3/76)	Cash Statement 10/1/76-9/30/77	Budget (approved 5/16/77)
<u>BALANCE</u> at Beginning of Period	\$ 4,300.00	\$ 5,247.30 (a)	\$ 6,400.00
<u>INCOME</u>			
<u>Contributions</u>			
Sponsoring Organizations			
AISC	4,000.00	4,000.00	4,000.00
AISI	5,000.00	5,000.00	5,000.00
CISC	1,000.00	2,000.00	1,000.00
NSF	7,000.00 (b)	17,000.00 (b)	7,000.00 (c)
Participating Organizations	---	1,350.00 (d)	100.00
Participating Firms	1,500.00	1,500.00 (e)	2,000.00 (f)
Total Contributions	\$19,300.00	\$30,850.00	\$20,000.00
<u>Registration Fees</u>	3,000.00	5,015.30	2,000.00
<u>MAL Subscription Fees</u>	---	17.00	---
<u>Guide Royalties</u>	---	4,283.48 (h)	1,000.00 (g)
<u>Sale of Publications</u>	---	30.00	---
<u>Interest</u>	200.00	179.72	200.00
TOTAL INCOME	\$22,500.00	\$40,375.50	\$23,200.00
<u>EXPENDITURES</u>			
<u>Technical Services (Hqtrs)</u>			
Director	1,000.00	999.99	1,000.00
SSRC Secretary	4,500.00	3,946.06	7,000.00
Secretarial Services	3,000.00	4,164.79	3,500.00
Supply, Phone, Mailing	750.00	1,398.80	750.00
Travel	750.00	1,203.39	750.00
Total Technical Services	\$10,000.00	\$11,713.03	\$13,000.00
<u>Research</u>	1,000.00	---	---
<u>Guide</u>			
Contract on Revision	525.00	525.00 (i)	---
Travel and Expenses	300.00	558.58 (j)	---
Total Guide	\$ 825.00	\$ 1,083.58	---
<u>Annual Meeting (Wash Colloq) and SSRC Annual Proceedings</u>			
Annual Proceedings	---	1,265.00	1,300.00
Expenses and Services	8,000.00	7,129.37	7,700.00
Travel & Conf. Hotel Bill	2,000.00	4,477.82	2,000.00
Total AM & Proceedings	\$10,000.00	\$12,872.19	\$11,000.00
<u>United Engineering Trustees</u>	100.00	100.00	100.00
<u>Travel</u>	500.00	175.50	500.00
<u>Contingencies</u>	400.00	200.00 (l)	400.00
TOTAL EXPENDITURES	\$22,825.00	\$26,144.30	\$25,000.00
<u>BALANCE</u> at End of Period	\$ 3,975.00	\$19,478.50 (m)	\$ 4,600.00

EXPLANATORY NOTES

- (a) Depositories (as of 10/1/76)
- | | |
|-----------------------------------|-------------------|
| General Account (UETI) | \$11,888.85 |
| Technical Services (Lehigh Univ.) | <u>(6,641.55)</u> |
| | \$ 5,247.30 |
- (b) Original intended application was to be for \$7,000 for the International Colloquium. The amount was later revised to \$17,000.
- (c) An application for an NSF grant will be made for supporting the 1978 Technical Session.
- (d) Aluminum Association(\$500), American Assoc. of State Highway & Trans. Officials(\$100), American Society of Mechanical Engineers(\$100), General Services Administration(\$100), International Conference of Building Officials(\$50), Institution of Engineers, Australia(\$100), Structural Engineers Assoc. of So. California(\$100), Society for Experimental Stress Analysis(\$100), Steel Joist Institute(\$200).
- (e) \$100 each - C. D. Carruthers & Wallace; Hardesty & Hanover; Hazelet & Erdal; Howard Needles Tammen & Bergendoff; Modjeski and Masters; Parsons Brinckerhoff Quade Douglas; Richardson, Gordon and Associates; Sargent & Lundy; Skidmore, Owings & Merrill; Skilling, Helle, Christiansen, Robertson; Steinman, Boynton, Gronquist & London; Sverdrup & Parcel and Assoc., Inc.; Tippetts-Abbett-McCarthy-Stratton; URS/Madigan-Praeger, Inc.; Weiskopf & Pickworth.
- (f) It is expected that the number of Participating Firms will increase to 20.
- (g) The 1978 Member-at-Large canvass will produce approximately \$2000 in income.
- (h) \$188.13 - royalties for 2nd Edition of Guide (Period 1/1/76-6/30/77) and \$4,095.35 - royalties for 3rd Edition of Guide (Period 7/1/76-6/30/77).
- (i) \$525.00 represents Johnston's stipend for Oct, Nov and Dec. December's payment was final payment of stipend.
- (j) Represents \$201.50 for guide promotion talks at conferences in Philadelphia and California and \$357.08 to attend Nov 76 EC meeting.
- (k) NSF funds for 3rd Edition of Guide are all expended.
- (l) Purchase of ECCS Manuals on consignment.
- (m) Depositories (as of 9/30/77)
- | | |
|-----------------------------------|-----------------|
| General Account (UETI) | \$18,919.30 |
| Technical Services (Lehigh Univ.) | (4,994.58) |
| NSF Colloq. Grant | <u>5,553.78</u> |
| | \$19,478.50 |

Register

OFFICERS

Chairman	G. Winter
Vice Chairman	J. W. Clark
Secretary	F. Cheong-Siat-Moy†

EXECUTIVE COMMITTEE

G. Winter (78)
 J. W. Clark (78)
 L. S. Beedle (Director)
 W. J. Austin (79)
 K. P. Buchert (80)
 J. L. Durkee *
 S. J. Errera (80)
 G. F. Fox (78)
 T. V. Galambos **
 R. R. Graham (78)
 T. R. Higgins (Technical Consultant)
 J. S. B. Iffland (79)
 B. G. Johnston (78)
 W. A. Milek, Jr. (79)
 J. Springfield (80)

* Past Vice Chairman

** Past Chairman

STANDING & AD HOC COMMITTEES

A. Committee on Guide to Stability Design Criteria for Metal Structures

B. G. Johnston, Editor 3rd Edition
 T. V. Galambos, Editor 4th Edition

B. Committee on Finance

G. F. Fox, Chairman
 G. Winter
 K. P. Buchert
 F. Cheong-Siat-Moy†

D. Ad-Hoc Committee on Column Problems

T. V. Galambos, Chairman
 R. Bjorhovde
 W. F. Chen
 E. H. Gaylord
 J.S.B. Iffland
 J. Springfield
 J. A. Yura

C. Ad Hoc Committee on Research Priorities

J. S. B. Iffland, Chairman
 R. Bjorhovde
 S. J. Errera
 T. V. Galambos
 R. M. Meith

† Present Secretary: T. Kanchanalai

TASK GROUPS

Task Group 1 - Centrally Loaded Columns

R. Bjorhovde, Chairman	M. P. Gaus	A. F. Kirstein
L. S. Beedle	J. A. Gilligan	W. A. Milek, Jr.
W. F. Chen	R. R. Graham*	E. G. Paulet
J. W. Clark	D. H. Hall	T. Pekoz
J. L. Durkee	A. L. Johnson	L. Tall

Scope: To define the strength of centrally-loaded columns, taking due account of the influence of the column geometry, the column cross-sectional geometric properties, the mechanical properties of the column material, and the variables associated with manufacture of column components and with column fabrication.

Task Group 3 - Columns With Biaxial Bending

J. Springfield, Chairman*	L. W. Lu	S. U. Pillai
M. J. Abrahams	P. W. Marshall	Z. Razzaq
W. F. Chen	D. A. Nethercot	B. C. Ringo
		S. Vinnakota

Scope: To investigate the behavior of columns subjected to biaxial bending, and to develop rational stability criteria based on the ultimate strength of such members.

Task Group 4 - Frame Stability and Effective Column Length

J. S. B. Iffland, Chairman*	J. H. Daniels	L. W. Lu
P. F. Adams	W. E. Edwards	W. A. Milek, Jr.
C. Birnstiel	T. R. Higgins	C. K. Wang
F. Y. Cheng	I. M. Hooper	J. A. Yura

Scope: To develop procedures for investigating the stability of structural frameworks. The evaluation of when the effective-column-length concept should be used, and when not, is an important consideration.

Task Group 6 - Test Methods for Compression Members

T. Pekoz, Chairman	J. W. Clark	B. G. Johnston
L. S. Beedle	S. J. Errera*	B. M. McNamee
R. Bjorhovde	T. R. Higgins	D. R. Sherman
		L. Tall

Scope: To prepare technical memoranda on test apparatus and on techniques for testing structural members subject to buckling, and to develop procedures for interpreting the associated test data.

* Executive Committee Contact Member

Task Group 7 - Tapered Members (Joint Task Group with Welding Research Council)

A. Amirikian, Chairman	T. R. Higgins*	L. W. Lu
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C. R. Femley, Jr.	K. H. Koopman	F. J. Palmer
D. S. Ellifritt	G. C. Lee	M. Yachnis

Scope: To develop practical procedures for determining the strength of tapered structural members and of frames made therefrom.

Task Group 8 - Dynamic Stability of Compression Members

D. Krajcinovic, Chairman	S. M. Holzer	G. J. Simitzes
J. Amazigo	B. G. Johnston*	J. C. Simonis
S. S. Chen	I. K. McIvor	

Scope: To define the strength of columns and other compression members subjected to time-dependent loading.

Task Group 11 - International Cooperation on Stability Studies

D. Sfantesco, Chairman	T. V. Galambos	P. Marek
W. A. Milek, Jr., V. Chairman*	M. P. Gaus	N. C. Lind
G. A. Alpsten	J. S. Iffland	E. O. Pfrang
L. S. Beedle	B. Kato	G. W. Schulz
A. Carpena	M. G. Lay	J. Strating
M. Crainicescu		I. M. Viest

Scope: To coordinate American, Japanese and European research groups, and to organize international colloquia, in the field of stability problems. In particular, to provide liaison between SSRC Task Groups, the Japanese Column Research Committee, and Committee 8 of the European Convention of Constructional Steelwork; and to suggest joint research projects.

Task Group 12 - Mechanical Properties of Steel in Inelastic Range

R. Testa, Chairman	A. L. Johnson	E. P. Popov
G. A. Alpsten	B. G. Johnston	M. Shinozuka
G. F. Fox*	L. W. Lu	W. J. Wilkes

Scope: To obtain and interpret data on the mechanical properties of steel in the inelastic range that are of particular importance to stability problems, including the determination of the average value and variation of the following: yield stress level, yield strength, tangent modulus, secant modulus, strain-hardening modulus, and magnitude of strain at incipient strain hardening.

* Executive Committee Contact Member

Task Group 13 - Thin-Walled Metal Construction

W. W. Yu, Chairman	A. L. Johnson	
J. W. Clark	C. Marsh	W. P. Vann
S. J. Errera	A. Ostapenko	G. Winter*
J. A. Gilligan (Resigned on 5/15/78)	T. Pekoz	

J. M. Murray (Appointed 5/15/78)

Scope: To investigate the behavior of thin-walled members made of carbon steels, alloy steels, stainless steels, or aluminum alloys; and to develop stability criteria for such members, taking due account of the effects of manufacturing the fabrication processes.

Task Group 14 - Horizontally Curved Girders

A. P. Cole, Chairman	C. G. Culver	W. A. Milek, Jr.
R. Behling	J. L. Durkee*	M. Ojalvo
H. R. Brannon	E. R. Latham	S. Shore
	P. Marek	W. M. Thatcher

Scope: To investigate the behavior of horizontally curved girders, taking due account of the effects of rolling and fabrication practices; and to develop criteria for adequate bracing for such girders.

Task Group 15 - Laterally Unsupported Beams

T. V. Galambos, Chairman*	A. J. Hartmann	M. Ojalvo
Y. Fukumoto	D. A. Nethercot	N. S. Trahair
		J. A. Yura

Scope: To study the behavior of and develop stability criteria for laterally unsupported beams, including those in framed structures; and to determine bracing requirements for such beams.

Task Group 16 - Plate Girders

F. D. Sears, Chairman	R. S. Fountain	C. Massonnet
K. Basler	K. L. Heilman	A. Ostapenko
P. B. Cooper	B. G. Johnston	B. T. Yen
J. L. Durkee*	H. S. Lew	R. C. Young

Scope: To develop practical procedures for determining the ultimate strength of stiffened plate girders, and to extend these procedures to include plate girders with multiple longitudinal stiffeners.

* Executive Committee Contact Member

Task Group 17 - Stability of Shell-Like Structures

A. Chajes, Chairman	M. Crainicescu	C. D. Miller
J. H. Adams	A. L. Johnson	E. P. Popov
L. O. Bass	A. Kalnins	D. R. Sherman
J. Bruegging	D. Krajcinovic	J. C. Simonis
K. P. Buchert*	C. Libove	D. T. Wright
J. W. Clark		

Scope: To investigate the stability of shell-like structures (those structures where the load-carrying elements also serve the functional requirements of enclosing space).

Task Group 18 - Unstiffened Tubular Members

D. R. Sherman, Chairman	A. Chajes	J. N. MacAdams
B. O. Almroth	J. W. Cox	P. W. Marshall
M. D. Bernstein	R. R. Graham*	R. M. Meith
P. C. Birkemoe	T. G. Johns	C. D. Miller

Scope: To develop stability criteria for manufactured and fabricated unstiffened cylindrical tubular members, and to study the behavior of unstiffened non-cylindrical tubular members.

Task Group 20 - Composite Members

S. H. Iyengar, Chairman	R. W. Furlong	D. Sfintesco
L. S. Beedle*	B. Kato	M. Wakabayashi
P. Dowling	J. W. Roderick	

Scope: To develop stability criteria for various types of composite columns.

Task Group 21 - Box Girders

R. C. Young, Chairman	G. F. Fox*
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Scope: To review, organize and interpret available information on the behavior of box girders, cooperating with other groups working on this subject; and to develop stability criteria as needed.

* Executive Committee Contact Member

Task Group 22 - Stiffened Tubular Members

C. D. Miller, Chairman	J. W. Cox	R. K. Kinra
M. D. Bernstein	R. C. DeHart	R. M. Meith
K. P. Buchert *	N. W. Edwards	R. L. Rolf
	R. F. Jones	R. C. Tennyson

Scope: Will consider cylinders with longitudinal or circumferential stiffening alone or in combination. Stability criteria will be developed for axial load, external or internal pressure, beam type bending and torsion. Consideration will be given to local buckling and general instability type failures. Available test data will be compared with suggested stability criteria. Recommendations will be made where insufficient data is available. The first task will be to develop criteria for axial load. External pressure criteria presented in Chapter 10 of the SSRC Guide will be reviewed.

TASK REPORTERSTask Reporter 11 - Stability of Aluminum Structural Members

J. W. Clark, Aluminum Company of America

Task Reporter 13 - Local Inelastic Buckling

L. W. Lu, Lehigh University

Task Reporter 14 - Fire Effects on Structural Stability

L. S. Seigel, U. S. Steel Corporation

Task Reporter 15 - Curved Compression Members

W. J. Austin, Rice University

Task Reporter 16 - Stiffened Plate Structures

R. G. Kline, David J. Seymour, Ltd.

Task Reporter 17 - Laterally Unsupported Restrained Beam-Columns

L. W. Lu, Lehigh University

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By-Laws*

PURPOSES OF THE COUNCIL

The general purposes of the Structural Stability Research Council shall be:

1. To maintain a forum where problems relating to the design and behavior of columns and other compression elements in metal structures can be presented for evaluation and pertinent structural research problems proposed for investigation.
2. To digest critically the world's literature on structural behavior of compression elements and to study the properties of metals available for their construction, and make the results widely available to the engineering profession.
3. To organize, administer, and guide cooperative research projects in the field of compression elements, and to enlist financial support for such projects.
4. To promote publication and dissemination of original research information in the field of compression elements.
5. To study the application of the results of research to the design of compression elements; to develop comprehensive and consistent strength and performance criteria, and to encourage their consideration by specification-writing bodies.

*Revised: August 21, 1947; October 1, 1948; November 1, 1949; August 15, 1951; May 20, 1955; October 1, 1960; May 7, 1962; May 21, 1965; May 31, 1968; March 27, 1974, May 7, 1975 and November 15, 1976

M E M B E R S H I P O F T H E C O U N C I L

The membership of the Council shall consist of Members-at-Large, Corresponding Members, Representatives of Sponsoring Organizations, and Representatives of Participating Organizations.

An individual who has expressed interest in the work of the Council, and who has done or is doing work germane to its interest, may be elected Member-at-Large by the Council, following nomination by the Executive Committee.

Corresponding Members are appointed by the Executive Committee to maintain contact with organizations in other countries that are active in areas of interest to the Council.

A Representative is appointed by the Sponsoring Organization or by the Participating Organization subject to the approval of the Executive Committee, and continues to serve until replaced by the organization which he represents. A Sponsoring Organization may appoint up to five representatives, and a Participating Organization may appoint up to three representatives. Organizations concerned with investigation and design of metal compression members and structures may be invited by the Council to become Sponsoring Organizations or Participating Organizations.

Council Members of appropriate age and service may be elected Life Members by the Council, following nomination by the Executive Committee.

Every three years the Secretary of the Council shall contact each Member-at-Large and each Corresponding Member to determine whether he wishes to continue his membership.

Every three years the Secretary of the Council shall canvass the Sponsoring Organizations and the Participating Organizations to determine their Representatives for the next three-year period.

S U B S C R I P T I O N F E E S

The subscription fee for each Member-at-Large shall be \$25.00 for a three-year period, and shall be billed concurrently with the regular triennial membership review. Interim subscriptions shall be \$17.00 for a two-year period and \$8.50 for a one-year period.

Subscription fees for Corresponding Members and Representatives shall be on a voluntary basis.

There shall be no subscription fees for Life Members.

The subscription fee for each Sponsoring Organization shall be a minimum of \$1000 per year.

The subscription fee for each Participating Organization shall be a minimum of \$100 per year, except that any such organization whose By-Laws specifically prohibit payment of such a fee shall be exempted.

M E E T I N G S O F T H E C O U N C I L

The Council shall hold at least one regular annual meeting each fiscal year, and such additional meetings as may be deemed necessary by the Executive Committee. A quorum shall consist of at least twenty members.

F I S C A L Y E A R

The fiscal year shall begin on October 1.

D U T I E S O F T H E C O U N C I L

1. To establish policies and rules.
2. To solicit funds for the work of the Council, and to maintain a general supervision of said funds, including the appropriation of grants for specific purposes.
3. To maintain and operate a central office for the administration of the work of the Council, and for the maintenance of its records.
4. To prepare an annual budget.
5. To issue annual reports.
6. To organize and oversee the committees and task groups established to carry out the projects authorized by the Council.

O F F I C E R S O F T H E C O U N C I L

1. The elected officers of the Council shall be a Chairman and a Vice Chairman. The Chairman shall exercise general supervision over the business affairs of the Council, subjected to the direction of the Council, shall perform all duties incident to this office, and shall be Chairman of the Executive Committee. It shall be the duty of the Chairman to preside at meetings of the Council and of the Executive Committee. The Vice Chairman shall perform all the duties of the Chairman in his absence.
2. The terms of office of the Chairman and Vice Chairman shall begin on October 1st and shall continue for 3 years. They shall be eligible for immediate re-election for only one term of one year. In the event of a vacancy in the office of Chairman or Vice Chairman, a successor shall be appointed by the Executive Committee to serve for the remainder of the unexpired term.
3. There shall be a Director engaged by the Executive Committee subject to the approval of the Council, who shall be the chief executive paid officer of the Council. Additional paid officers may be appointed by the Council as may be necessary. If there is no paid Secretary, the Chairman may appoint a Secretary, who need not be a member of the Council.

4. The Director of the Council shall conduct the regular business of the Council subject to the general supervision of the Council and of the Chairman. The Director shall be expected to attend all meetings of the Council, Executive Committee, and main committees. The Director shall be ex-officio a member of the Council and the Executive Committee. The Director shall conduct the official correspondence of the Council, shall handle the financial affairs of the Council in accordance with an approved budget, and shall keep full records thereof. He shall carefully scrutinize all expenditures and exert every effort to secure economy in the business administration of the Council, and shall personally certify to the accuracy of all bills or vouchers on which money is to be paid. He shall engage such employees as may be authorized, shall be responsible for their work, and shall determine their salaries within budget limitations, subject to the approval of the Executive Committee. The salary of the Director and other paid officers shall be fixed by the Executive Committee. The Director shall draw up and execute all contracts authorized by the Council and its Executive Committee.

ELECTION OF OFFICERS

1. Each year, the Executive Committee shall appoint 3 members of the Council to serve as the Nominating Committee. One of the three shall be named Chairman by the Chairman of the Council. Members of the Executive Committee or of the previous year's Nominating Committee shall not be eligible to serve on the Nominating Committee.

2. The Nominating Committee shall name a slate for Chairman and Vice Chairman of the Council, and members of the Executive Committee. The Committee shall submit its nomination for Chairman and Vice Chairman to the Executive Committee prior to the Annual Meeting. Nominations for members of the Executive Committee will be submitted to the membership at the regular Annual Meeting.

3. The election of Chairman and Vice Chairman of the Council shall be by letter ballot. The ballots shall be canvassed at the regular Annual Meeting of the Council. Should no candidate for an office receive a majority of the ballots cast for such office, the annual meeting shall elect the officer by ballot from the two candidates receiving the largest number of votes in the letter ballot.

EXECUTIVE COMMITTEE

1. An Executive Committee of nine members shall be elected by the Council from its membership. The term of membership shall be for three years, and three of the members shall be elected each year at the time of the regular Annual Meeting of the Council. Nominations shall be made by the Nominating Committee as described in the section "Election of Officers". In addition, the Chairman, Vice Chairman, Director, and the most recent Past Chairman and Past Vice Chairman of the Council shall be ex-officio members of the Executive Committee. Members shall take office upon their election. They shall be eligible for immediate re-election.

Vacancies shall be filled by appointments by the Chairman from the membership of the Council, such appointees to serve for the remainder of the unexpired term.

2. The Executive Committee shall transact the business of the Council and shall have the following specific responsibilities and duties;

- (a) To direct financial and business management for the Council, including the preparation of a tentative annual budget.
- (b) To review and approve proposed research projects and contracts.
- (c) To appoint Nominating Committee.
- (d) To appoint chairmen of committees and task groups, and approve committee and task group members.
- (e) To review reports and manuscripts.
- (f) To advise Council on proposed research projects.
- (g) To prepare program for Council meeting.
- (h) To correlate and give general supervision to research projects.
- (i) To refer inquiries relating to design practice to the Committee on Recommended Practice for definition, evaluation, and suggestions for task group assignment.

3. From time to time, the Executive Committee may ask additional consultants particularly interested in definite projects to act with it in an advisory capacity.

4. The Chairman, with the approval of the Executive Committee, shall appoint a Finance Committee to solicit the support required to carry out its projects.

5. The meeting of the Executive Committee shall be at the call of the Chairman or at the request in writing of two members of the Executive Committee. A quorum shall consist of five members, two of whom may be the Chairman and Vice Chairman of the Council.

6. The Executive Committee shall transact the business of the Council subject to the following limitations:

The minutes of the Committee shall be transmitted promptly to all members of the Council. If no objection is made by any member of the Council within two weeks after the minutes have been mailed, then the acts of the Executive Committee shall be considered as approved by the Council. If disapproval of any Committee action is made by three or more Council members, then the question raised shall be submitted to the Council for vote at a meeting called for that purpose, or by letter ballot.

C O N T R A C T S

The Council may make contracts or agreements, within its budget. Contracts for research projects preferably should be for the fiscal year period. Contracts with the Director or other paid employees of the Council may, with the approval of the Executive Committee, be for periods exceeding one fiscal year. At the end of such one-year period, contracts may be renewed or extended by the Council for an additional period, preferably not exceeding the new fiscal year.

S T A N D I N G A N D S P E C I A L C O M M I T T E E S

1. The standing committees shall be a Committee on Finance and a Committee on the "Guide to Stability Design Criteria for Metal Structures". There shall be such special committees as may be approved by the Council.

2. Standing and special committees and their chairmen, shall be appointed by, and responsible to, the Executive Committee. They shall be named at a regular Annual Meeting of the Council, shall take office upon appointment, shall serve for three years, and shall be eligible for immediate reappointment. Vacancies shall be filled in the same manner as regular appointments except that such appointees will complete the term of office vacated.

3. The Committee on Finance shall solicit the support required to carry on the work of the Council. The Chairman and the Vice Chairman shall be appointed from among the membership of the Executive Committee.

4. The Committee on the "Guide to Stability Design Criteria for Metal Structures" shall direct the preparation and publication of the various editions of the "Guide".

R E S E A R C H C O M M I T T E E S A N D T A S K G R O U P S

1. The Executive Committee may authorize one or more research committees or task groups, each for a specific subject or field. Each committee or task group shall consist of a number of members as small as feasible for the work in hand. Members need not be members of the Council.

2. Research committee chairmen or task group chairmen shall be appointed by the Executive Committee, adequately in advance of the Annual Meeting of the Council.

3. All research committee or task group appointments shall expire at the time of the regular Annual Meeting of the Council. Prior to the Annual Meeting, each committee chairman or task group chairman for the ensuing year shall review the personnel of his committee or task group with the idea of providing the most effective organization, and shall make recommendations thereon to the Executive Committee. Committee or task group personnel shall be approved or modified by the Executive Committee, prior to the conclusion of the Annual Meeting of the Council.

4. The duties of a research committee or task group shall be:
 - (a) To review proposed research projects within its field, and to render opinions as to their suitability.
 - (b) To make recommendations as to needed research in its field.
 - (c) To give active guidance to research programs within its field, in which connection research committees or task groups are empowered to change details of programs within budget limitations.
 - (d) To make recommendations as to the time when a project within its field should be temporarily discontinued, or terminated.
 - (e) At the request of the Executive Committee to prepare summary reports covering results of research projects and/or existing knowledge on specific topics.
5. Each project handled by a research committee or task group shall be of definite scope and objective.
6. Each research committee or task group shall be responsible to the Executive Committee for organizing and carrying out its definite projects, which must be approved by the Executive Committee.
7. Each research committee or task group shall meet at least once in each fiscal year before the Annual Meeting of the Council, to review progress made, and to plan activities for the ensuing year.
8. Each research committee chairman or task group chairman shall make a report to the Executive Committee at the time of the Annual Meeting.

REVISION OF BY-LAWS

These By-Laws may be revised at any time upon a majority vote of the entire membership of the Council, by letter ballot or at a meeting of the Council.

Rules of Procedure*

I. OUTLINE OF ROUTE OF A RESEARCH PROJECT FOR CONSIDERATION BY THE STRUCTURAL STABILITY RESEARCH COUNCIL

Projects are to be considered under three classifications:

(1) Projects originating within the Structural Stability Research Council.

(2) Those originating outside the Structural Stability Research Council or resulting from work at some institution and pertaining to general program of study approved by the Structural Stability Research Council.

(3) Extensions of existing SSRC sponsored projects.

Projects under Class (1) are to be handled as follows:

1. Project proposed.
2. Referred to Executive Committee for study and report to Council with recommendation.
3. If considered favorably by Council, the Executive Committee will take necessary action to set up the project.
4. Project Committee, new or existing, sets up project ready for proposals and refers back to Executive Committee.
5. Executive Committee sends out project for proposals.
6. Project Committee selects and recommends successful proposal to Executive Committee for action.
7. If awarded, the Project Committee supervises the project.
8. Project Chairman is to obtain adequate interim reports on project from laboratory.
9. Project Chairman advises Executive Committee adequately in advance of Annual Meeting as to report material available for Council presentation.
10. Executive Committee formulates program for presentation of reports at Annual Meeting.
11. Project Committee submits reports on any completed phase of the work for the Executive Committee.
12. Executive Committee determines disposition of report subject to approval of the Council before publication.

* Revised: Sep 22, 1975, May 16, 1977

Projects under Class (2) would be handled essentially the same except that steps 4, 5 and 6 would be omitted at the discretion of the Executive Committee. The procedure for items 7 - 12 would then be unchanged from that used for Class (1) projects.

With regard to Class (3) projects, an extension of an existing project which requires no additional funds or changes in supervisory personnel shall be approved by a majority of the Executive Committee, but need not be reported to the Council for its consideration or action. If an extension requires additional funds, such extensions may be approved by the Executive Committee subject to approval by a letter ballot from the Council.

II. OUTLINE OF A PATH OF A PROJECT THROUGH THE COUNCIL (FOR RECOMMENDED PRACTICE)

1. Task Group submits its findings to the Executive Committee.
2. Executive Committee acts and forwards to Recommended Practice Committee.
3. Recommended Practice Committee acts and forwards recommendations to Executive Committee.
4. Council votes on the matter.
5. Executive Committee transmits recommendations and findings to specification-writing bodies, and/or Publications Committee arranges for publication.

III. DISTRIBUTION AND PUBLICATION OF REPORTS

For the guidance of project directors and task group chairmen, the following policy is recommended with regard to the distribution of technical progress reports and with respect to the publication of reports. The scope of this procedure is intended to cover those reports that result from projects supported financially by the Structural Stability Research Council.

Distribution of Technical Progress Reports

Any duplicated report prepared by an investigator carrying out a research program may be distributed to the appropriate task group and to members of the Executive Committee with the understanding that the investigator may make further limited distribution with a view of obtaining technical advice. General distribution will only be made after approval by the task group.

Publication of Reports

Published reports fall into two categories and are to be processed as indicated:

A. Reports Constituted as Recommendations of the Council

1. The report shall be submitted to the Executive Committee which after approval will circulate copies to members of the Structural Stability Research Council.

2. Subject to approval of the Structural Stability Research Council, the Publications Committee takes steps to publish Council recommendations.

B. Technical Reports Resulting from Research Programs

1. Universities or other organizations carrying out programs of research for the Structural Stability Research Council should make their own arrangements for publication of results.

2. Assuming that the investigator wishes to arrange for such publication, approval must be obtained from the appropriate task group.

3. Reprints are currently used as means of distributing reports of projects sponsored by or of interest to the Council. Investigator should order sufficient reprints for distribution by the Council. It is assumed that ear-marked project funds will be adequate for this purpose.

4. When appropriate, reprints should be distributed under a distinctive cover.

5. A statement of sponsorship should be included in all reports.

IV. SSRC LIFE MEMBERS

Reason for Life Member Category - To facilitate continued participation in and contributions to SSRC activities on the part of Council members who:

1. Have given exceptionally long service to SSRC, or
2. Have given long service to SSRC and are on a reduced schedule of regular professional activity.

Guidelines for Nomination to Life Member Category

1. Candidate has given approximately 25 years of active service to SSRC, or approximately 15 years of active service and is not engaged full-time in regular employment; and
2. Has made significant contributions to the work of SSRC; and
3. Expects to continue active participation in the work of SSRC.

Nominating Procedure

1. SSRC Chairman will appoint Life Member Nominating Committee in the fall of each year, this committee to consist of two members of the Executive Committee (one of whom will be designated chairman) and the SSRC Secretary.
2. This committee will submit recommendations for Life Member nominees to the Executive Committee at its spring meeting.
3. Approved candidates will become Executive Committee nominees.

Election Procedure

The names of the Executive Committee nominees will be presented to the Council at its Annual Meeting, for election to Life Membership.

V. WORKING RELATIONSHIP BETWEEN EXECUTIVE COMMITTEE & TASK GROUPS

1. Executive Committee defines scope of task group assignment, selects task group chairman, and appoints Executive Committee contact member. SSRC Chairman sends letter of appointment to task group chairman and furnishes him with Statement of Scope, name of contact member, and procedural guidelines as appropriate.
2. Task group chairman can recommend changes to scope if he so desires.
3. Executive Committee recommends possible task group members, but task group chairman assembles his own list of prospects and determines their willingness to serve, and furnishes names to contact member.
4. Executive Committee approves task group members and SSRC Chairman notifies them of their appointment.
5. Task group should meet at least once a year to remain in good standing. SSRC Chairman shall make this point clear to task group chairman when he is appointed.
6. Suitably in advance of Annual Technical Session, SSRC Secretary shall send instructions to each task group chairman regarding expected participation of his task group.
7. Suitably in advance of each Executive Committee meeting, SSRC Secretary shall send Executive Committee agenda (and relevant EC meeting minutes as necessary) to each task group chairman, requesting him to send one-page report to his contact member covering the following matters (and others as appropriate):
 - a. Task group progress.
 - b. Status of research projects being supervised or advised by task group.

- c. Task group meeting minutes.
- d. Comments on relevant matters on EC agenda.
- e. Membership status and recommended changes.
- f. (Prior to spring meeting of Executive Committee) Task group plans for SSRC Annual Technical Session.

8. It is contact member's responsibility to check regularly with task group chairman regarding task group progress, and particularly with respect to his duties and plans in connection with: (a) holding of task group meetings; (b) reports to Executive Committee; and (c) planning for and participation in Annual Technical Session.

9. In the event task group chairman will not be present at Executive Committee meeting or at Annual Technical Session, contact member will present task group report, or (if he is unable to attend) he shall arrange for an alternate to report, consulting in advance with SSRC Chairman or Secretary as appropriate.

10. In general, SSRC Chairman commissions and furnishes all necessary instructions to task group, and contact member renders follow-up services. Thus, task group chairman is ultimately responsible to Executive Committee, not to contact member.

VI. GUIDELINES FOR SSRC TASK GROUP CHAIRMEN

1. Scope of Task Group Activities

Review the scope as approved by the Executive Committee and recommend changes if needed.

2. Task Group Membership

a. At the time the task group is formed, recommend task group membership to the Executive Committee. Task group members will be approved by the Executive Committee and notified by the SSRC Chairman.

b. Review the task group membership at least once each year (before the annual meeting) and recommend new members or changes in the membership to the Executive Committee.

c. Endeavor to insure that members are active participants in the task group activities.

3. Conduct of Business

a. Direct the activities of the task group in the work required to carry out the assignment defined in the task group scope.

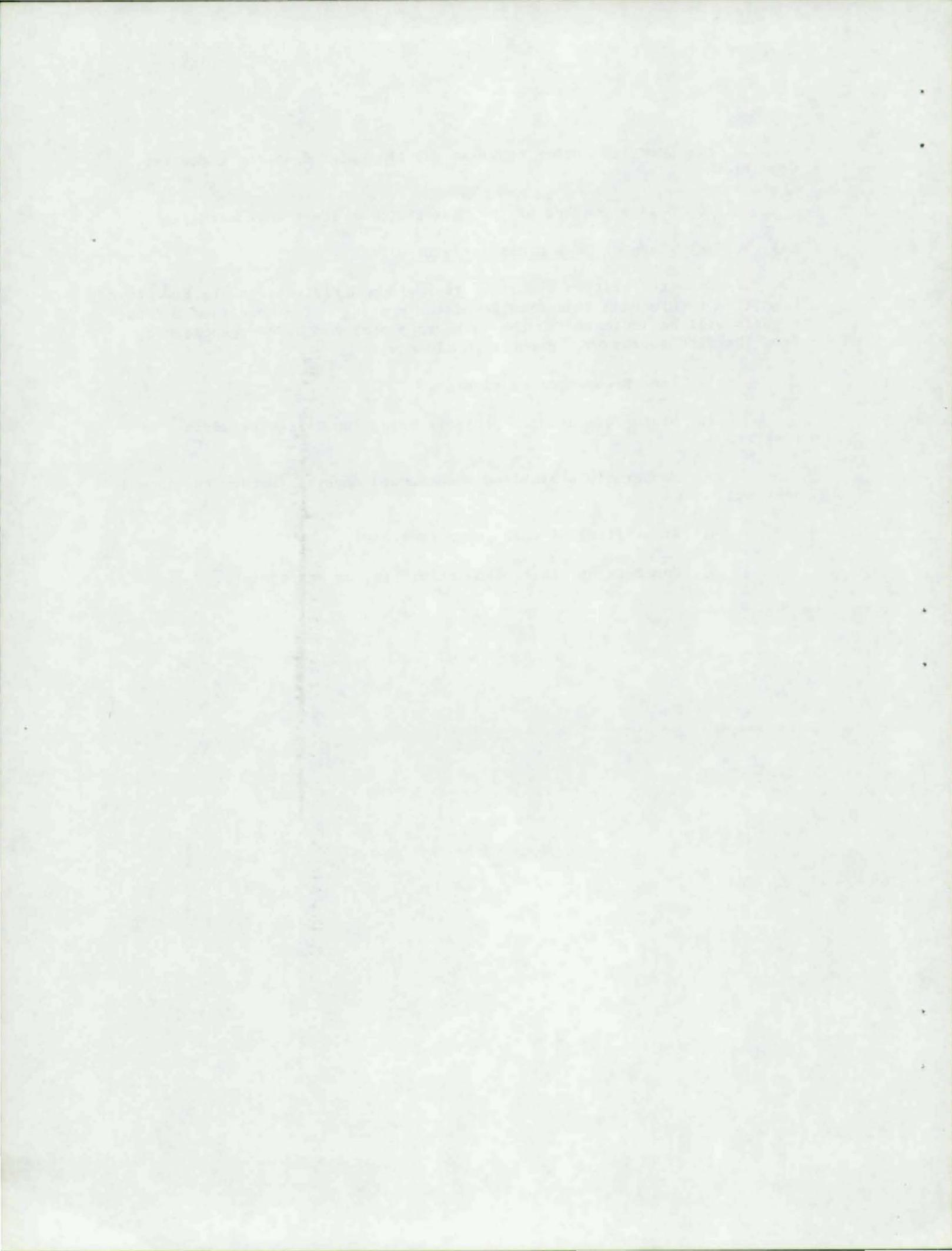
b. Carry out other tasks as may be assigned by the Executive Committee.

c. Hold a meeting of the task group at least once each year.

4. Reporting of Task Group Activities

Submit a written report of task group activities to the Executive Committee before each Executive Committee meeting. The deadlines for the reports will be indicated to the task group chairman by correspondence from the SSRC secretary. Reports should cover:

1. Task group meeting minutes.
2. Status of research projects being supervised or advised by task group.
3. Membership status and recommended changes (before the annual meeting).
4. Other items of task group progress.
5. Comments on other SSRC activities, as appropriate.



A D D E N D U M

SSRC 1977 Proceedings

The following additions, deletions and changes should be noted in the addresses starting on Page 28:

ADD:

AMAZIGO, Prof. J., Rensselaer Polytechnic Institute, Troy, NY 12181
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DELETE:

COLEMAN, J. S.
MARSCHALL, RADM A. R.

CHANGE:

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