AMERICAN CONCRETE INSTITUTE

Fall Convention
September 21-26, 1980
Condado Beach—La Concha Hotels and Convention Center
San Juan, Puerto Rico
Notes

Special Events

Publications Display . . . in the Grand Hall Foyer all week. See the latest ACI publications now available. Orders are taken at the ACI Registration Desk which is also in the Grand Hall Foyer.

Coffee Bar . . . Monday, Tuesday, Thursday, and Friday, 8:00 a.m.-11:00 a.m., and Wednesday, 8:00 a.m.-9:00 a.m., in the Grand Hall Foyer.

Special Attraction . . . on Wednesday at the General Session: The premier showing of a color film on nondestructive testing. Produced by CANMET, Department of Energy, Mines and Resources, Canada, the 27-minute film's subject is the in-situ testing of concrete. The techniques discussed include the rebound and penetration methods and the pullout methods including the Danish Lock Test, and CANMET split-sleeve test. This is followed by a description of breakoff and maturity techniques. The history of ultrasonic pulse velocity method is traced with some outstanding shots of the pioneering work at Ontario Hydro, Canada. The film concludes with a sequence on Treat Island, Maine, U.S.A., showing the field use of pulse velocity method.

The film has been produced by Scott Films Limited, Ottawa, under the technical direction of V.M. Malhotra of CANMET.

Education at the Convention:

Committee Chairmen's Seminar (by invitation only) . . . Wednesday, 7:00 a.m.-8:30 a.m., in Ocean C. Sponsored by the Educational Activities Committee and the Technical Activities Committee, the purpose of this seminar is to teach the committee chairman how to handle controversy within his committee. A complimentary continental breakfast will be served at the beginning of this session.

Student Activities Seminar . . . Thursday, 7:30 p.m.-10:00 p.m. in Grand Ballroom. Arranged specifically for the engineering student, this seminar will cover student projects and competitions plus a briefing on ACI's technical activities.

"Concrete Mixer" . . . Wednesday, 6:30 p.m.-8:00 p.m., at the Dominican Convent Museum. This traditional event will be held in an old Dominican Convent which has been restored and turned into a museum with many interesting exhibits from the early Spanish Colonial days in Puerto Rico. Shuttle buses will start departing at 6:15 p.m. in front of the Convention Center. Please wear your badge and bring your ticket. At the end of the cocktail hour there will be a short floor show by the folkloric group Aryeto. The dances they perform will be done in costume complete with music native to Puerto Rico. The show is presented to us through the kind sponsorship of the Puerto Rican Cement Company, Inc., of San Juan.

Special Tours . . . have been planned for the women but are not exclusive to them. Check them out in the back of this booklet. There is something of interest there for everyone!
## PROGRAM
### Fall Convention
September 21-26, 1980
San Juan, Puerto Rico

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- Puerto Rico Chapter Officers: 15
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### SUSTAINING MEMBERS OF THE AMERICAN CONCRETE INSTITUTE

- Master Builders
- Division of Martin Marietta Corporation
  - Cleveland, Ohio
- Portland Cement Association
  - Skokie, Illinois
- Southwestern Portland Cement Company
  - Los Angeles, California
- Marquette Company
  - Nashville, Tennessee
- Martin Marietta Cement
  - Bethesda, Maryland
- W.R. Grace & Company
  - Construction Products Division
  - Cambridge, Massachusetts
Schedule

SUNDAY, SEPTEMBER 21
8:30 a.m.—6:00 p.m.
Administrative, technical, and educational committee meetings

MONDAY, SEPTEMBER 22
8:30 a.m.—10:00 p.m.
Administrative, technical, and educational committee meetings
2:00 p.m.—5:00 p.m.
Peculiarities of Concrete Construction in Puerto Rico (ACI Puerto Rico Chapter)

TUESDAY, SEPTEMBER 23
8:30 a.m.—10:00 p.m.
Administrative, technical, and educational committee meetings

WEDNESDAY, SEPTEMBER 24
9:00 a.m.—11:00 a.m.
General Session
11:00 a.m.—12:00 noon
Standards Presentation
2:00 p.m.—5:00 p.m.
Recent Research in Fatigue of Concrete Structures (1st of 2 sessions) (Committee 215)
2:00 p.m.—5:00 p.m.
Design of Slabs on Grade (Committee 360)
2:00 p.m.—5:00 p.m.
Symposium on Polymers in Concrete (1st of 2 sessions) (Committee 548)
2:00 p.m.—6:00 p.m.
Technical and administrative committee meetings
6:30 p.m.—8:00 p.m.
"Concrete Mixer" at the Dominican Convent Museum

THURSDAY, SEPTEMBER 25
8:30 a.m.—10:00 p.m.
Technical committee meetings
9:00 a.m.—12:00 noon
Recent Research in Fatigue of Concrete Structures (2nd of 2 sessions) (Committee 215)
9:00 a.m.—12:00 noon
Symposium on Polymers in Concrete (2nd of 2 sessions) (Committee 548)
9:00 a.m.—5:00 p.m.
International Symposium on Fire Safety of Concrete Structures (Committee 216)
2:00 p.m.—5:00 p.m.
Research in Progress (Committee 115)
2:00 p.m.—5:00 p.m.
Design of Tall Buildings to Resist Wind and Earthquake (Committee 442)

FRIDAY, SEPTEMBER 26
8:30 a.m.—12:30 p.m.
Technical committee meetings
9:00 a.m.—12:00 noon
Concrete in Marine Environments
9:00 a.m.—12:00 noon
Design Concepts for Splices and Development of Reinforcement (Committee 408)
9:00 a.m.—12:00 noon
Dynamic Modeling of Concrete Structures (Committee 444)

Registration

The ACI staff is eager to answer any questions you may have pertaining to the convention. The registration desk is open to serve you Sunday, September 21, 1:00 p.m.-5:00 p.m.; Monday, September 22, 7:30 a.m.-5:00 p.m.; Tuesday through Thursday, September 23-25, 8:00 a.m.-5:00 p.m.; Friday, September 26, 8:00 a.m.-10:30 a.m.

Fees:
Member ............................................. $70
NonMember ........................................ 85
One-day, Member ................................. 30
One-day, NonMember ............................ 35
Friday morning only ......................... 20
Students ........................................... Free

Registration fees cover attendance at all ACI technical and educational committee meetings, general session, symposia, and the Concrete Mixer.

Badges

Wear your badge on the right side at all times. (In shaking hands the eyes normally fall at shoulder level on the right side of the individual being greeted.)
Committee Meetings

To ease the problem of finding your committee rooms within the complex, please remember the following:

All numbered rooms (for example, B-1, M-5) plus the East and West Ballrooms are in the Convention Center. The B rooms are on the 3rd floor with the two ballrooms, and the M rooms are on the mezzanine.

All named rooms with the exception of the three Ocean rooms are in the Condado Beach Hotel.

Ocean A, B, and C are in the La Concha Hotel.

Be sure to check the bulletin board for last minute changes or added meetings.

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<td><strong>SEPTEMBER 21</strong></td>
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<td>- Technical Activities Committee Subgroup</td>
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<td>- Technical Activities Committee Subgroup</td>
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<td>- Technical Activities Committee Subgroup</td>
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<td>- Technical Activities Committee</td>
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<td>E-902 Certification Committee</td>
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| **MONDAY**                              |              |
| **SEPTEMBER 22**                        |              |
| 8:30 a.m.-10:30 a.m.                    |              |
| - Educational Activities Committee      | Room B-4     |
| - Technical Activities Committee        | Room B-1     |
| - Construction Review Committee         | Room M-5     |
| 211 Subc. 7, Proportioning Mass Concrete| Room B-3     |
| 301 Specifications for Structural Concrete | Ocean B     |
| 303 Architectural Concrete              | Salon Gobernador |
| 318 Standard Building Code              | Ocean C      |
| 343 Concrete Bridge Design              | Patio Del Mar |
| 349 Working Group on Embedments         | Room M-2     |
| 362 Parking Structures                  | West Ballroom |
| 435 Deflection of Concrete Building Structures | Patio Del Sol |
| 437 Strength Evaluation of Existing Concrete | Patio Del Fauno |
| 506 Shotcreting                          | East Ballroom |
| 530 Masonry Structures (See Committee 531) | Room M-3 |
| 531 Concrete Masonry Structures         | Room M-2     |
| E-601 Seminars and Workshops            | Room M-1     |
| E-901 Scholarship Committee             | Mirror Room  |
| 10:30 a.m.-12:30 p.m.                   |              |
| - Educational Activities Committee      | Room B-4     |
| - Technical Activities Committee        | Room B-1     |
| - International Activities Committee    | Room B-2     |
| (continued) 10:30 a.m.-12:30 p.m.       |              |
| - Construction Review Committee         | Room M-5     |
| 104 Notation                            | Mirror Room  |
| 201 Durability of Concrete              | Patio Del Fauno |
| 207 Mass Concrete                       | Patio Del Sol |
| 301 Specifications for Structural Concrete | Ocean B     |
| 303 Architectural Concrete              | Salon Gobernador |
| 318 Standard Building Code              | Ocean C      |
| 343 Concrete Bridge Design              | Patio Del Mar |
| 349 Working Group on Embedments         | Room M-2     |
| 362 Parking Structures                  | West Ballroom |
| 363 High Strength Concrete              | Room B-3     |
| 506 Shotcreting                          | East Ballroom |
| 516 High Pressure Steam Curing           | Ocean A      |
| 530 Masonry Structures (See Committee 531) | Room M-3 |
| 531 Concrete Masonry Structures         | Room M-2     |
| 544 Fiber Reinforced Concrete           | Grand Ballroom |
| E-601 Seminars and Workshops            | Room M-1     |
| 2:00 p.m.-4:00 p.m.                     |              |
| - Educational Activities Committee      | Room B-4     |
| - Board Committee on Publications       | Room M-5     |
| 214 Evaluation of Results of Tests Used to Determine Strength of Concrete | Room B-3 |
| 223 Expansive Cement Concretes          | Room B-2     |
| 308 Curing Concrete                     | Room M-1     |
| 315 Details of Concrete Reinforcement   | Salon Gobernador |
| 318 Standard Building Code              | Ocean C      |
| 343 Concrete Bridge Design              | Patio Del Mar |
| 349 Working Group on Embedments         | Room M-2     |
| 349 Working Group on Impact/Impulse     | Ocean B      |
| 362 Parking Structures                  | West Ballroom |
| 439 Steel Reinforcement                 | Patio Del Mar |
| 506 Shotcreting                          | Patio Del Fauno |
| 530 Masonry Structures (See Committee 531) | Room M-3 |
| 531 Concrete Masonry Structures         | Room M-2     |
| 544 Fiber Reinforced Concrete           | Grand Ballroom |
| E-703 Concrete Construction Practices   | Room B-1     |
| 2:00 p.m.-5:00 p.m.                     |              |
| - Educational Activities Committee      | Room B-4     |
| - Construction Liaison Committee        | Room B-5     |
| 214 Evaluation of Results of Tests Used to Determine the Strength of Concrete | Room B-3 |
| 223 Expansive Cement Concretes          | Room B-2     |
| 315 Details of Concrete Reinforcement   | Salon Gobernador |
| 318 Standard Building Code              | Ocean C      |

PECULIARITIES OF CONCRETE CONSTRUCTION IN PUERTO RICO

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SEE FLOOR PLANS ON PAGES 22-26
MONDAY (continued)

349 Working Group on Materials  Ocean A
349 Working Group on Embedments  Room M-2
349 Working Group on Impact/Impulse  Ocean B
362 Parking Structures  West Ballroom
439 Steel Reinforcement  Patio Del Mar
506 Shotcreteing  Patio Del Fauno
530 Masonry Structures (See Committee 531)  Room M-3
531 Concrete Masonry Structures  Room M-3
544 Fiber Reinforced Concrete  Grand Ballroom
E-702 Designing Concrete Structures  Room M-1

7:30 p.m.-9:30 p.m.
— Board Committee on Metrication  Room B-4
302 Construction of Concrete Floors  Room M-2
E-801 Student Concrete Projects  Room M-2

TUESDAY

SEPTEMBER 23

8:30 a.m.-10:30 a.m.
— Planning Committee  Room B-1
211 Proportioning Concrete Mixes  Grand Ballroom
304 Measuring, Mixing, Transporting and Placing Concrete  Room B-2
311 Inspection of Concrete  West Ballroom
318 Subcommittee 2, Concrete Quality and Construction  Room B-3
318 Subcommittee 5, Serviceability  Patio Del Sol
318 Subcommittee 6, Flexure and Axial Loads  Patio Del Fauno
318 Subcommittee 8, Two-Way Slabs  Patio Del Mar
344 Circular Prestressed Concrete Structures  Room M-1
345 Concrete Bridge Construction and Maintenance  Room M-2
349 General  Room M-4
349 Working Group on Design  Room M-5
349 Working Group on Materials  Ocean A
349 Working Group on Impact/Impulse  Ocean B
355 Anchorage to Concrete  Room B-4
423 Prestressed Concrete  Salon Gobernador
503 Adhesives for Concrete  East Ballroom
530 Masonry Structures (See Committee 531)  Room M-3
531 Concrete Masonry Structures  Room M-3
E-701 Materials for Concrete Construction  Ocean C

10:30 a.m.-12:30 p.m.
— Planning Committee  Room B-1
221 Aggregates  Room B-4
311 Inspection of Concrete  West Ballroom
318 Subcommittee 2, Concrete Quality and Construction Requirements  Room B-3
318 Subcommittee 5, Serviceability  Patio Del Sol
318 Subcommittee 6, Flexure and Axial Loads  Patio Del Fauno
318 Subcommittee 8, Two-Way Slabs  Patio Del Mar
344 Circular Prestressed Concrete Structures  Room M-1
349 General  Room M-4
349 Working Group on Design  Room M-5
349 Working Group on Materials  Ocean A
349 Working Group on Impact/Impulse  Ocean B
423 Prestressed Concrete  Salon Gobernador
441 Reinforced Concrete Columns  East Ballroom
503 Adhesives for Concrete  East Ballroom
517 Accelerated Curing of Concrete at Atmospheric Pressure  Grand Ballroom
530 Masonry Structures (See Committee 531)  Room M-3
531 Concrete Masonry Structures  Room M-3
547 Refractory Concrete  Ocean C

2:00 p.m.-4:00 p.m.
— Board of Direction  Patio Del Sol
117 Tolerances  West Ballroom
121 Quality Assurance Systems  Room B-1
212 Admixtures  Room M-5
224 Cracking  Patio Del Mar
309 Consolidation of Concrete  Room M-4
318 Subcommittee 3, Details, Developments, and Splices  Mirror Room
318 Subcommittee 9, Prestressed, Precast and Composite Concrete  Patio Del Fauno
318 Subcommittee 10, Seismic Provisions  Salon Gobernador
344 Circular Prestressed Concrete Structures  Room M-1
347 Formwork for Concrete  Room M-2
348 Subcommittee E, Safety Evaluation of Existing Structures  Room B-3
349 Concrete Nuclear Structures  Room B-2
360 Design of Slabs on Grade  East Ballroom
517 Accelerated Curing of Concrete at Atmospheric Pressure  Grand Ballroom
530 Masonry Structures (See Committee 531)  Room M-3
531 Concrete Masonry Structures  Room M-3
548 Polymers in Concrete  Ocean C

LOCATION OF MEETING ROOMS
To ease the problem of finding your committee rooms within the complex, please remember the following:

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SEE FLOOR PLANS ON PAGES 22-26
GENERAL SESSION

STANDARDS PRESENTATION
- Convention Committee
- Membership Recruitment Committee
- Specifications Review Committee
- Research and Development
- Use of Computers
- Cold Weather Concreting
- Standard Building Code
- Structural Safety
- Concrete Guideways
- Response of Buildings to Lateral Forces
- Shear and Torsion

RECENT RESEARCH IN FATIGUE OF CONCRETE STRUCTURES (first session)
- Membership Recruitment Committee
- Nomenclature
- Fire Resistance and Fire Protection of Structures
- Corrosion of Metals in Concrete
- Cold Weather Concreting
- Standard Building Code
- Cast-In-Place Pipe
- Structural Safety
- Concrete Guideways
- Response of Buildings to Lateral Forces
- Shear and Torsion
- Insulating and Cellular Concretes

SYMPOSIUM ON POLYMERS IN CONCRETE
- Membership Recruitment Committee
- Nomenclature
- Fire Resistance and Fire Protection of Structures
- Corrosion of Metals in Concrete
- Cold Weather Concreting
- Standard Building Code
- Cast-In-Place Pipe
- Structural Safety
- Concrete Guideways
- Response of Buildings to Lateral Forces
- Shear and Torsion
- Insulating and Cellular Concretes

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SEE FLOOR PLANS ON PAGES 22-26
THURSDAY (continued)

9:00 a.m.-12:00 noon

RECENT RESEARCH IN FATIGUE OF CONCRETE STRUCTURES (second session)  East Ballroom
INTERNATIONAL SYMPOSIUM ON FIRE SAFETY OF CONCRETE STRUCTURES (first session)  Grand Ballroom
SYMPOSIUM ON POLYMERS IN CONCRETE (second session)  West Ballroom
Board of Direction  Patio Del Sol

10:30 a.m.-12:30 p.m.

210 Erosion of Concrete in Hydraulic Structures  Room M-1
225 Hydraulic Cements  Room M-2
340 Strength Design Handbook  Room B-4
352 Joints and Connections in Monolithic Concrete Structures  Room B-1
428 Inelastic Behavior of Reinforced Concrete Structures  Room B-2
515 Coatings for Concrete  Room M-4

2:00 p.m.-4:00 p.m.

336 Combined Footings and Pier Foundations  Room B-2
408 Bond and Development of Reinforcement  Room B-1
515 Coatings for Concrete  Room M-4
546 Repair of Concrete  Room M-1

2:00 p.m.-5:00 p.m.

RESEARCH ON PLAIN AND REINFORCED CONCRETE  East Ballroom
INTERNATIONAL SYMPOSIUM ON FIRE SAFETY OF CONCRETE STRUCTURES (second session)  Grand Ballroom
DESIGN OF TALL BUILDINGS TO RESIST WIND AND EARTHQUAKE  West Ballroom

4:00 p.m.-6:00 p.m.

408 Bond and Development of Reinforcement  Room B-1
532 Concrete Masonry  Room B-4

7:30 p.m.-10:00 p.m.

FORUM: HOW SAFE ARE THE SEISMIC PROVISIONS FOR CONCRETE STRUCTURES IN BUILDING CODES  East Ballroom
STUDENT ACTIVITIES PROGRAM  Grand Ballroom

FRIDAY

SEPTEMBER 26

9:00 a.m.-12:00 noon

CONCRETE IN MARINE ENVIRONMENTS  Grand Ballroom
DESIGN CONCEPTS FOR SPLICES AND DEVELOPMENT OF REINFORCEMENT  East Ballroom
DYNAMIC MODELING OF CONCRETE STRUCTURES  West Ballroom

Puerto Rico Convention Committee
Carlos A. Lazaro, General Chairman
Teresa Lazaro
Jorge Hidalgo
Ilia Hidalgo
Emiliano H. Ruiz
Margarita Ruiz

ACI Puerto Rico Chapter Officers

President
Jorge Hidalgo
Vice-President
Juan H. Gracia
Secretary-Treasurer
Jose R. Alejandro
Past President and Director
Emiliano H. Ruiz
Directors
Carlos A. Lazaro
Ignacio Martin
Melville E. Prior
PECULIARITIES OF CONCRETE CONSTRUCTION IN PUERTO RICO
sponsored by the Puerto Rico Chapter, ACI

Session Chairman: Emiliano H. Ruiz, Office of Emiliano H. Ruiz, civil engineers and structural consultants, Hato Rey, Puerto Rico

Peculiarities of Hot Weather Concreting in Puerto Rico
Eduardo A. Oliver, vice-president in charge of sales and operations, Ready-Mix Concrete, Inc., Carolina, Puerto Rico

Peculiarities of the Structural Behavior of Mass-Produced, Cast-in-Place Dwellings in Puerto Rico
Ignacio Martin, partner, Capacete, Martin and Associates, San Juan, Puerto Rico

Peculiarities of the Construction of Mass-Produced, Cast-in-Place Dwellings in Puerto Rico
Rafael Torrens and Agustin Mujica, Levitt Homes of Puerto Rico, Inc., Catano, Puerto Rico

The Fuentes Precast Concrete Pile
Gabriel Fuentes, chairman, Fuentes Concrete Pile Company, Bayamon, Puerto Rico

Concrete in Architecture—Our Experience in Puerto Rico
Thomas Marvel, Torres, Beauchamp and Marvel, Hato Rey, Puerto Rico

WEDNESDAY, SEPTEMBER 24
7:00 a.m. - 8:30 a.m.

CHAIRMEN TRAINING SESSION
(by Invitation Only)
sponsored by the Educational Activities Committee and the Technical Activities Committee

Topic: How to Deal With Conflict in your Committee Meetings
Many times, a conflict will stifle a committee's effectiveness and bog down productivity. The objective of this session is to demonstrate various methods of handling strong differences of opinion by drawing out the dispute and resolving conflict to a fruitful conclusion.

Moderator: Harold (Bud) Gilley, director of education, American Concrete Institute, Detroit, Michigan

PROGRAM
Complimentary Continental Breakfast

Opening Comments
Edwin G. Hedstrom, chairman, Educational Activities Committee, and manager of special products, Ideal Basic Industries, Denver, Colorado

Value of Conflict

Focusing In on and Drawing Out Conflict in ACI Committees
John F. McLaughlin, Past President, ACI, and assistant dean of engineering, Purdue University, West Lafayette, Indiana

Formal Resolution of Conflict
Robert E. Philipe, Past President, ACI; Chairman, Information Services Committee; and chief, Structures Branch Office, Chief of Engineers, Washington, D.C.

Open Discussion
Closing Comments and Adjournment
Samuel J. Henry, director of engineering, American Concrete Institute, Detroit, Michigan
STANDARDS PRESENTATION

Moderator: Charles J. Pankow, President, ACI, and president, treasurer, and CEO, Charles Pankow, Inc., Altadena, California

Presentation of Proposed ACI Standard: "Tolerances for Concrete Construction and Materials"
A. Ernest Fisher III, chairman, ACI Committee 117, and market analyst, Bethlehem Steel Corporation, Bethlehem, Pennsylvania

Presentation of Proposed Revision of ACI 211.2-69: "Standard Practice for Selecting Proportions for Structural Lightweight Concrete"
William W. Hotaling, Jr., member, ACI Committee 211, and director of engineering services, National Sand and Gravel Association, Silver Spring, Maryland

Presentation of Proposed Revision of ACI 346-70: "Specifications for Cast-in-Place Nonreinforced Concrete Pipe"
Donald L. Weesner, chairman, ACI Committee 346, and assistant general manager, Salt River Project, Phoenix, Arizona
GENERAL SESSION

Session Chairman: Jorge Hidalgo, President, Puerto Rico Chapter, ACI, and partner, Gonzalez-Hidalgo, San Juan, Puerto Rico

Welcome
Jorge Hidalgo, session chairman

Raymond E. Davis Lecture: Making the Most of Models
Roy E. Rowe, director-general, Cement and Concrete Association, Wexham Springs, Slough, England

Keynote Address: The Status of Cement and Concrete Research and Development in the United States
Della Roy, professor of materials science, Materials Research Laboratory, Pennsylvania State University, University Park, Pennsylvania; and Jan Skalny, associate director, Martin Marietta Laboratories, Baltimore, Maryland

Film: Nondestructive Testing of Concrete
Produced by CANMET, Department of Energy, Mines and Resources, Ottawa, Ontario, Canada

ACI Business*

*The presentation and discussion of Standards will be held in a separate room at the conclusion of the Business Session. Please refer to Wednesday, 11:00 a.m.
Floor Plans

LA CONCHA HOTEL
PAGE 26

CONVENTION CENTER
3RD FLOOR
PAGE 24

CONVENTION CENTER MEZZANINE
PAGE 25

CONDADO BEACH HOTEL
PAGE 23

Condado Beach Hotel

EAST TERRACE
TO CONVENTION CENTER

SALON DEL PALO
PATIO DEL SOL
PATIO DEL MAR
PATIO DEL PALO

ELEVATOR

WOMEN
MEN

LOBBY
UPPER
WEST TERRACE

SALON GOBIERNADOR
WEST CORRIDOR

GRAND BALLROOM
See Schedule
WEDNESDAY, SEPTEMBER 24
2:00 p.m.-5:00 p.m.

Grand Ballroom

DESIGN OF SLABS ON GRADE

sponsored by ACI Committee 360

Session Chairman:  A.F. Shaikh, chairman, ACI Committee 360, and professor, Department of Civil Engineering, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Introduction
A.F. Shaikh, session chairman

State of the Art
Boyd C. Ringo, professor of civil engineering, University of Cincinnati, Cincinnati, Ohio

Design Considerations—Unreinforced and Reinforced Slabs
Robert D. Johnson, senior structural engineer, Eastman Kodak Company, Penfield, New York

Design of Post-Tensioned Slabs on Ground
Cliff Freyermuth, executive director, Post-Tensioning Institute, Phoenix, Arizona

Use of Shrinkage Compensating Elements
Mark W. Hoffman, chief structural engineer, Dalton, Dalton, Little & Newport, Cleveland, Ohio, and Robert J. Gulyas, Maximent Division, Set Products, Inc., Macedonia, Ohio

Perspective of Revised ACI Committee 302 Report
William S. Phelan, vice-president, marketing, The Euclid Chemical Company, Woodbridge, New Jersey

Panel Discussion
Robert F. Ytterberg, panel moderator, and president, Kalman Floor Company, White Plains, New York
WEST BALLROOM

SYMPOSIUM ON POLYMERS IN CONCRETE
sponsored by ACI Committee 548

Session Chairman: L.E. Kukacka, leader, Geothermal Materials Group, Department of Energy and Environment, Brookhaven National Laboratory, Upton, New York

Session I
Introduction
L.E. Kukacka, symposium chairman

Overview: Current Research on Polymer-Concrete Materials and Future Needs
John A. Manson, professor, Materials Research Center, Lehigh University, Bethlehem, Pennsylvania

The Use of Concrete Polymer Materials in the Transportation Industry
Jack J. Fontana, associate chemist, Process Sciences Division, Department of Energy and Environment, Brookhaven National Laboratory, Upton, New York; and John Bartholomew, Office of Development, Federal Highway Administration, Washington, D.C.

Applications of Concrete Polymer Materials in Hydrotechnical Construction
John M. Scanlon, acting chief, Concrete Technology Division, Structures Laboratory, U.S. Army Waterways Experiment Station, Vicksburg, Mississippi

Polymer Concretes and the Electrical Power Industry
E. Robert Perry, director, Transmission Department, Electric Power Research Institute, Palo Alto, California

A New, Novel Well-Cementing Polymer-Concrete Composite
Arkady Zeldin, N. Carciello, and Jack J. Fontana, Process Sciences Division, Department of Energy and Environment, Brookhaven National Laboratory, Upton, New York

Research in Progress: Rapid All-Weather Pavement Repair with Polymer Concrete
Michael T. McNerney, research engineer, United States Air Force Engineering and Services Center, Tyndall Air Force Base, Florida

EAST BALLROOM

THURSDAY, SEPTEMBER 25
9:00 a.m.-12:00 noon

RECENT RESEARCH IN FATIGUE OF CONCRETE STRUCTURES
sponsored by ACI Committee 215

Session Chairman: Basile G. Rabbat, senior structural engineer, Structural Development Department, Portland Cement Association, Skokie, Illinois

Session II
Deflection and Cracking of Reinforced Concrete Under Repeated Loading and Fatigue
J.M. Lovegrove, lecturer, and A.S. Salah El Din, research fellow, Department of Civil Engineering, The University of Southampton, Southampton, United Kingdom

Fatigue in Partially Prestressed Concrete Beams
A.E. Naaman, associate professor, Department of Materials Engineering, University of Illinois at Chicago Circle, Chicago, Illinois

Fatigue Tests of Spliced Reinforcement in Concrete Beams
E.W. Bennett, reader in civil engineering, University of Leeds, Leeds, England

Fatigue of Plain Concrete Subjected Between Tension and Compression-Changing Stresses
Ralejs Tepfers, associate professor of building materials and building technology, Chalmers University of Technology, Goteborg, Sweden

Fatigue of Plain Concrete Subjected to Biaxial-Cyclical Loading
Leonard A. Traina, professor, Department of Civil Engineering, New Mexico State University, Las Cruces, New Mexico; and A.A. Jeragh, head, Government of Kuwait Research Institute, Al-Faiha, Kuwait

Dynamic Response of Reinforced Concrete Flexural Members
Alfred G. Bishara, professor of civil engineering, Ohio State University, Columbus, Ohio
SYMPOSIUM ON POLYMERS IN CONCRETE
sponsored by ACI Committee 548

Session Chairman: George C. Hoff, chief, Materials and Concrete Analysis Group, Structures Laboratory, U.S. Army Waterways Experiment Station, Vicksburg, Mississippi

Session II

Introduction
L.E. Kukacka, leader, Geothermal Materials Group, Department of Energy and Environment, Brookhaven National Laboratory, Upton, New York

The Use of Polymers to Repair Concrete in Marine and Hydraulic Environments

A Performance History of Latex Modified Concrete Overlays
L.A. Kuhlmn, research specialist, Dow Chemical Company, Larkin Laboratory, Midland, Michigan

Polymers for Electrical Applications
Rosalba Torres Becerra, investigator, Instituto de Investigaciones Electricas, Cuernavaca, Morelos, Mexico

Epoxy Modified Portland Cement Concrete
Samuel H. Christie III, product planning manager; Ronald R. McClain, senior development chemist; and James H. Melloan, senior market development specialist, Celanese Plastics and Specialties Company, Louisville, Kentucky

An Evaluation of the Bond Durability of Overlays of Low Slump and Latex Modified Concrete to Polymer Impregnated Concrete
Richard E. Wieries, instructor; and P.D. Cady, professor, Department of Civil Engineering; P.R. Blankenhorn, associate professor of wood technology; and L.R. Stover, research assistant, School of Forest Resources, Pennsylvania State University, University Park, Pennsylvania

Evaluation of Performance of Mold-Release Agents for Polyester Resin Concrete (or Polymer Concrete)
Yoshihiko Ohama and Katsunori Demura, Nihon University, Fukushima-Ken, Japan

INTERNATIONAL SYMPOSIUM ON FIRE SAFETY OF CONCRETE STRUCTURES
sponsored by ACI Committee 216

Session Chairman: Melvin S. Abrams, chairman, ACI Committee 216, and manager, Fire Research Section, Portland Cement Association, Skokie, Illinois

Session I

Introduction
Melvin S. Abrams, session chairman

Experiences From Evaluating Fire-Damaged Structures

An Underground Shopping Center Fire and After-Fire Repair Project
Ersin Arioglu, Koksal Anadol and Ali Candogan, Yapi Candogan Camlica, Istanbul, Turkey

Can Extremely Green Concrete Withstand Fire with Minor Damage?
Gerhard T. Suter, professor, Department of Engineering, Carleton University, Ottawa, Ontario, Canada

Thermoluminescence: A Comparison With the Residual Strength of Various Concretes
L.M. Smith, research assistant; and F. Placido, lecturer, Paisley College of Technology, Paisley, Scotland

Mechanical and Physical Properties of Concrete to Temperatures 620°C
C.B. Oland, Oak Ridge National Laboratory, Oak Ridge, Tennessee; Dan Jay Naus, Knoxville, Tennessee; G.C. Robinson; Harold Cruz Hirth, Berkeley, California; David Pirtz, professor, and Milosl Poliwka, University of California, Berkeley, California

The Spalling of Normalweight and Lightweight Concrete Exposed to Fire
W.J. Copier, head, Structural Building Division, Amsterdam Municipal Works, Amsterdam, The Netherlands
INTERNATIONAL SYMPOSIUM ON FIRE SAFETY OF CONCRETE STRUCTURES
sponsored by ACI Committee 216

Session Chairman: Boris Bresler, senior consultant, Wiss, Janney, Elstner & Associates, Inc., Emeryville, California

Session II
Introduction
Boris Bresler, session chairman

Fire Severity: Basis of Fire Safety Design
Tibor Z. Harmathy, head, Fire Section, National Research Council, Ottawa, Ontario, Canada

Structural Fire Protection Levels for Industrial Buildings
Ulrich Schneider, Technical University of Braunschweig, Institut fur Baustoffe, Massivbau und Brandschutz, Braunschweig, West Germany; Heinrich Bub, president; and Marita Kersken-Bradley, engineer, Institut fur Bautechnik, West Berlin, Germany

Materials-Dominated Aspects of Design for Structural Fire Resistance of Concrete Structures
John W. Dougill, professor of engineering science, University of London, King's College, London, England

Fire Response of Prestressed Concrete Members
Boris Bresler and R. Iding, Wiss, Janney, Elstner & Associates, Inc., Emeryville, California

Simulation of Realistic Thermal Restraint During Fire Tests of Floor and Roof Assemblies
T.D. Lin, senior research engineer, and Melvin S. Abrams, director, Fire Research Department, Portland Cement Association, Skokie, Illinois

The Fire Engineering Design of the New Reichsbrücke in Vienna
Ataman Haksever, scientific collaborator; and Karl Kordina, professor, Institut fur Baustoffe Massivbau und Brandschutz, Braunschweig, West Germany

Technical Activities Committee

EDWARD O. PF R A N G, Chairman
SAMUEL J. HENRY, Secretary*
W. GENE CORLEY
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HOWARD NEWLON, JR.
THOMAS J. PASKO, JR.
RAYMOND J. SCHUTZ
DANIEL J. SLADEK

*American Concrete Institute
P.O. Box 19150
Detroit, Michigan 48219
THURSDAY, SEPTEMBER 25
2:00 p.m.-5:00 p.m.

East Ballroom

RESEARCH ON PLAIN AND REINFORCED CONCRETE
sponsored by ACI Committee 115

(Brief and confidential reports)

Session Chairman: James T. Dikeou, chairman, ACI Committee 115, and president, Dikeou Associates, Englewood, Colorado

Secretary: Charles F. Scholer, secretary, ACI Committee 115, and professor, Department of Civil Engineering, Purdue University, West Lafayette, Indiana

The Absorption of Aggregate and Its Effect on the Strength of Concrete
Kenneth R. Lauer, professor of civil engineering, University of Notre Dame, Notre Dame, Indiana; and Joseph O. Cool, engineer, Bendix Corporation, South Bend, Indiana

Tests of Ductile Behavior of Lightweight Concrete Columns for Seismic Design
Basile G. Rabat, senior structural engineer; and Norman W. Hanson, principal structural engineer, Construction Technology Laboratories, Portland Cement Association, Skokie, Illinois

Prevention of Progressive Collapse of Cast-in-Place Slabs by Means of Tensile Membrane Action
William D. Cook, research assistant; Denis Mitchell, associate professor; and Suresh Shrivastava, assistant professor, McGill University, Montreal, Quebec, Canada

Testing Reinforced Concrete in Pure Shear
Frank Vecchio, graduate student; and Michael P. Collins, professor, Department of Civil Engineering, University of Toronto, Toronto, Ontario, Canada

The Inelastic Behavior of Reinforced Concrete Members Reinforced with Steel Fibers
Robert John Craig, assistant professor; and Jack Decker, Lawrence Dombrowski, and Bob Laurenelle, students, Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, New Jersey

A Reexamination of Postcracking Models Used in Nonlinear Finite Element Analysis of Reinforced Concrete
Rafael Jimenez-Perez, assistant professor, Department of Civil Engineering, University of Puerto Rico, Mayaguez, Puerto Rico

Mortar Under Cyclic Compressive Loading
David Darwin, associate professor; and Ataullah Maher, graduate student, Department of Civil Engineering, University of Kansas, Lawrence, Kansas

Lightweight Fiberglass Concrete
Shyam N. Shukla, research engineer, Lawrence Livermore Laboratory, Livermore, California; and J.M. Leaver, owner-general contractor, San Ramon, California

Comparison of Fully Bedded and Face-Shell Bedded Concrete Block
Marvin E. Criswell, associate professor; and Charles J. Nacos, student, Civil Engineering Department, Colorado State University, Fort Collins, Colorado

A P.D.Q. Method of Determination of Water-Cement Ratio of Concrete
Tarun R. Naik, associate professor; and Bruce W. Ramme, graduate student, Civil Engineering Department, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Special Recognition for ACI Fellows & Members
A gold lapel pin especially created to recognize ACI Fellows. The pins are approximately of ½-in. size and feature the ACI emblem as well as Fellow indication. Price is $7.95 each.
A lapel pin in blue enamel is also available for members at $7.95 each.
Buy your lapel pin at the registration desk.
THURSDAY, SEPTEMBER 25
2:00 p.m.-5:00 p.m.  
West Ballroom

DESIGN OF TALL BUILDINGS TO RESIST WIND AND EARTHQUAKE
sponsored by ACI Committee 442

Session Chairman: S.M. Uzumeri, chairman, ACI Committee 442, and professor, Department of Civil Engineering, University of Toronto, Toronto, Ontario, Canada

Preliminary Dimensioning of Tall Concrete Structures
Mario Paparoni M., professor, Faculty of Engineering, Central University of Venezuela, Caracas, Venezuela

Analysis of Intersecting Shear Walls
Bernardo Deschapeltes, partner, Hernandez & Hernandez Consulting Engineers, San Juan, Puerto Rico

Designing Tall Buildings for Wind Risk
Alan G. Davenport, professor and director, Boundary Layer Wind Tower Laboratory, University of Western Ontario, London, Ontario, Canada

From Experiment to Practice in Earthquake Resistant Design
Mete A. Sozen, professor of civil engineering, University of Illinois, Urbana, Illinois

Seismic Resistance of Frame-Wall Reinforced Concrete Buildings
Vitelmo V. Bertero, professor of civil engineering, and E. Aktan, research engineer, University of California, Berkeley, California
STUDENT ACTIVITIES PROGRAM
sponsored by ACI Committee E-801

This program has three main goals:
1. Create student interest and familiarity with ACI;
2. Stimulate some interest in working on concrete projects as students at both the undergraduate and graduate levels;
3. Show students some of the existing careers in concrete construction and design.

The program is geared for the following: (1) Students—undergraduate and graduate; (2) young members of ACI; and (3) those interested in Committee E-801 activities.

Session Chairman: Robert John Craig, chairman, ACI Committee E-801, and assistant professor, Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, New Jersey

PROGRAM

Discussion of the Technical Activities of ACI
Joseph A. Dobrowolski, member of TAC and EAC, consulting engineer, lecturer at California State at Long Beach, Altadena, California. He will explain what the TAC does, and will give a brief presentation on some technical concrete projects.

Codes and Specifications for Design and Construction
Gerald B. Neville, Secretary, ACI Committee 318 and manager, Structural Codes, Portland Cement Association, Skokie, Illinois. He will briefly describe the function of the ACI Committee 318 and go through the procedure of how the codes and specifications are set up.

Careers in Concrete Construction and Design
William E. Brewer, member of E-801, associate professor at Bowling Green State University, construction technology, and principal in consulting firm of Brewer and Associates, Bowling Green, Ohio. He will talk on design, construction, product development and research, testing, plant production and supervision, etc.

Concrete Canoe Racing Program
Michael McGillichy, project manager, City of Akron; and Thomas Nixdorf, student, University of Akron, Akron, Ohio, both members of Committee E-801. They will explain how to construct and race canoes. Slides and film will be shown. A short discussion and feedback will get the students' views of this activity.

Concrete Projects in Civil Engineering Education
Robert John Craig, chairman of ACI Committee E-801, and assistant professor, Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, New Jersey. He will present a couple of concrete projects on which students have worked as undergraduates, both technical and non-technical in nature. Also, a discussion and feedback on how the ACI Committee E-801 can develop interest in student projects will be included.

Social Hour
Walter M. Ruiz, professor and consulting engineer, University of Puerto Rico, Mayaguez, Puerto Rico, will set up a social event at the Convention so that ACI can discuss things on an individual basis with the students.

ACI 1981 Conventions

Annual Convention
February 8-13
with World of Concrete
Hyatt Regency of Dallas
Dallas, Texas

Fall Convention
September 20-25
Quebec Hilton Hotel
Quebec, Quebec, Canada
FRIDAY, SEPTEMBER 26
9:00 a.m. - 12:00 noon

Grand Ballroom

DESIGN, CONSTRUCTION, AND REPAIR OF MARINE CONSTRUCTION

Session Chairman: Raymond J. Schulz, director, Product Development, Protex Industries, Denver, Colorado

Concrete and Seawater
Bryant Mather, chief, Structural Laboratories, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi

Design of Permanent Seawater Structures to Prevent Deterioration
Morris Schupack, president, Schupack, Suarez Engineers Inc., South Norwalk, Connecticut

Repair of Seawater Structures—An Overview
I. Leon Glassgold, president, Masonry Resurfacing and Construction Company, Inc., Baltimore, Maryland

Repair of Seawater Structures—A Case History
Joseph Henaghan, president, Gunite Masonry Company, North Bellmore, New York

The Repair of Concrete Piles by Use of Fiber Reinforced Jackets
Carl W. Scheffel, vice president and chief engineer, Fox Industries, Inc., Baltimore, Maryland

FRIDAY, SEPTEMBER 26
9:00 a.m. - 12:00 noon

East Ballroom

DESIGN CONCEPTS FOR SPLICES AND DEVELOPMENT OF REINFORCEMENT
sponsored by ACI Committee 408

Session Chairman: Peter Gergely, professor, School of Civil and Environmental Engineering, Cornell University, Ithaca, New York

James O. Jirsa, professor, Civil Engineering Structures Research Laboratory, University of Texas, Austin, Texas; and Leroy A. Lutz, vice president, Computerized Structural Design Inc., Milwaukee, Wisconsin

Development and Splice Provisions in the German Code and in the CED Model Code
R. Eligehausen, research engineer, University of Stuttgart, Stuttgart, Germany

The Design of Anchorages and Splices
Rallej Tepfers, associate professor, Chalmers University of Technology, Goteborg, Sweden

The Top Bar Effect On Development of Bars and Splices
Denis Mitchell, associate professor; and M. Saeed Mirza, professor, Department of Civil Engineering, McGill University, Montreal, Quebec, Canada; and James O. Jirsa, professor, Civil Engineering Structures Research Laboratory, University of Texas, Austin, Texas

The Design of Tension Splines for High-Level Repeated Loading
Fernando E. Fagundo, Jr., assistant professor, Department of Civil Engineering, University of Florida, Gainesville, Florida; Peter Gergely, professor, and Richard N. White, professor and director, School of Civil and Environmental Engineering, Cornell University, Ithaca, New York.
DYNAMIC MODELING OF CONCRETE STRUCTURES
sponsored by ACI Committee 444

Session Chairman: Harry G. Harris, associate professor, Department of Civil Engineering, Drexel University, Philadelphia, Pennsylvania

Co-chairman: Robert John Craig, assistant professor, Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, New Jersey

Use of Dynamic Models in Concrete Research—An Historical Perspective
M.S. Mirza, professor, Department of Civil Engineering, McGill University, Montreal, Quebec, Canada; and H.G. Harris, associate professor, Department of Civil Engineering, Drexel University, Philadelphia, Pennsylvania

Techniques for In-Plane Vibration and Shear Testing of Model Floor Slabs
Ti Huang and Le-Wu Lu, professors of civil engineering, Fritz Engineering Laboratory, Lehigh University, Bethlehem, Pennsylvania; and H. Faruk Karadogen, assistant professor of civil engineering, Istanbul Technical University, Istanbul, Turkey

Impact Loading of a Reinforced Concrete Beam to Column Joint
A.J. Watson, lecturer, Civil and Structural Engineering Department, University of Sheffield, Sheffield, England; and J.E. Inkester, design engineer, United Kingdom Atomic Energy, Risley Nuclear Power Development Establishment, Warrington, Cheshire, England

Behavior of Small-Scale Reinforced Concrete Model Structures
Daniel P. Abrams, assistant professor, Department of Civil Engineering, University of Colorado at Boulder, Boulder, Colorado

Impact of a Steel Rod on a Reinforced Concrete Slab
Larsgunnar Nilsson, associate professor, Division of Structural Engineering, University of Lulea, Lulea, Sweden; and Sven Sahlin, professor, Royal Institute of Technology, Stockholm, Sweden

Testing of Model Precast Shear Walls on a Shake Table
H.G. Harris and J.J. Wang, Department of Civil Engineering, Drexel University, Philadelphia, Pennsylvania

Historical Facts

1493 Puerto Rico discovered by Columbus.
1508 Colonized by Spain under Ponce de Leon.
1595 Sir Francis Drake attacks island.
1625 Dutch burn San Juan.
1873 Slavery abolished.
1898 Spanish-American war. Puerto Rico becomes part of U.S.A.
1917 Puerto Ricans granted U.S. citizenship.
1934 Prohibition repealed.
1950 U.S. Congress votes Puerto Rico's right to decide their own Constitution.
1951 Puerto Ricans approve new Constitution guaranteeing secret ballot, freedom of press, worship and right to assemble, right to education and equal justice to all citizens.
1952 The Commonwealth of Puerto Rico officially established—a free state associated with the U.S.A. through a bilateral contract ratified by the people of Puerto Rico and the Congress of the United States.
1964 U.S. Congress establishes commission to study among other things the possibility of an island-wide referendum to let the people of Puerto Rico directly express their preference for either Commonwealth, Statehood, or Independence.
Useful Spanish Phrases

Buenos días
bweh-nohs dee-ahs
Good morning

Buenas noches
bweh-nohs noh-chehs
Good evening

¿Cómo está usted?
koh-moh ehs-tah oos-teeth
How are you?

Mucho gusto en conocerle
moo-choh goos-toh ehng koh-noh-sehr-leh
Very glad to meet you

Adiós
ahth-yohs
Goodbye—or hello
(When saying hello in passing, the Spanish say “adiós”—“Goodbye”)

Hasta luego
ahs-tah loo-eh-goh
Until then

Numbers and Money

uno, dos, tres, cuatro, cinco
oo-nah, dohs, trehs, kwah-troh, seeng-koh
one, two, three, four, five

seis, siete, ocho, nueve, diez
says, sueh-teh, oh-choh, nweh-beh, dyehs
six, seven, eight, nine, ten

Pesos, centavos
peh-sohs, seh-nah-tah-vohs
Dollars, cents

Muy barato
moo-ee bah-rah-toh
Very cheap

¿Qué buena!
keh buh-nah
That’s great!

Qué suerte!
keh soo-ehr-teh
What luck!

Querido!
kah-ree-doh!
Darling!

Bonito!
boh-nee-toh!
Beautiful!

¿Cómo se llama?
kah-moh seh yah-mah
What is your name?

¿Cómo está usted?
koh-moh ehs-tah oos-teeth
How are you?

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¿Cómo se llama?
kah-moh seh yah-mah
What is your name?
Women's Program

SUNDAY, SEPTEMBER 21
1:00 p.m. — 5:00 p.m.
Registration

MONDAY, SEPTEMBER 22
8:30 a.m.
Coffee and rolls
Registration

Afternoon
Slide presentation and talk on Puerto Rico. Conference on native crafts and artisans.

TUESDAY, SEPTEMBER 23
Morning
City tour: Includes the University of Puerto Rico Main Campus, the Experimental Botanical Gardens, the El Morro Fortress, and ends in Old San Juan. You may remain to shop within the Old San Juan area or return to the hotel. Tour lasts 3½ hours.

WEDNESDAY, SEPTEMBER 24
All day (6 hours)
Tour to El Yunque Rain Forest and the Hyatt Rio Mar Beach Complex, including a visit to a local artisan who specializes in clay pottery. The Rio Mar Beach Club offers excellent varied recreational facilities as well as luncheon.

Evening
Concrete Mixer: This traditional event will be basically an exciting Puerto Rican rum party. It will be held at the Dominican Convent in Old San Juan. The Convent dates from Spanish colonial days and houses a museum and continuous cultural exhibitions which will be open to us. At the end of the cocktail hour there will be a short floor show by the folkloric group Aryeto.

THURSDAY, SEPTEMBER 25
8:30 a.m.
Champagne Breakfast Program: A brief welcome from ACI President Charles J. Pankow and Executive Director George F. Leyh. Then Hotel sous chef and Gold Medal winner Hans Bange will tell you some of his experiences as chef in Europe and America. To finish off the program, we have William Kilpatrick, professional tour guide and lecturer, who will talk on Puerto Rico, its flora and fauna, the life of the Puerto Rican people, and why homes are built like they are on the island.

Afternoon
Visit to the Bacardi Rum Distillery and see how it’s made.

FRIDAY, SEPTEMBER 26
8:30 a.m.
Coffee and rolls. This is your last chance to get the names and addresses of your new friends so you can send them Season’s Greetings and make plans to see them again in Dallas at the ACI convention, February 8-13, 1981.