



# **PROGRAM**

**AMERICAN CONCRETE INSTITUTE**



**San Francisco, Cal.**

**Sheraton Palace**

**March 30-April 5**





## **BOARD OF DIRECTION**

### **President**

ROBERT E. PHILLEO

### **Vice-Presidents**

CHESTER P. SIESS

JOSEPH H. WALKER

### **Directors**

WILLIAM M. AVERY

HALVARD W. BIRKELAND

BORIS BRESLER

JOHN L. GOETZ

ELMO C. HIGGINSON

JACK R. JANNEY

IB FALK JORGENSEN

JAMES G. MacGREGOR

IGNACIO MARTIN

CHARLES J. PANKOW

FRANCIS J. PRINCIPE

BERTOLD E. WEINBERG

### **Past Presidents**

S. D. BURKS

W. J. McCOY

EDWARD COHEN

### **Executive Director**

WILLIAM A. MAPLES\*

\*American Concrete Institute  
P.O. Box 19150  
Detroit, Michigan 48219

Printed in U.S.A.

## **TECHNICAL ACTIVITIES COMMITTEE**

(In charge of convention program and of technical publications)

JOHN F. McLAUGHLIN, Chairman

SAMUEL J. HENRY, Secretary\*

JOHN E. BREEN

T. Z. CHASTAIN

NOEL J. EVERARD

RUSSELL S. FLING

PAUL KLIEGER

HOWARD NEWLON, JR.

EDWARD O. PFRANG

THOMAS J. READING

PETER SMITH

## **EDUCATIONAL ACTIVITIES COMMITTEE**

(In charge of educational programs)

EMERY FARKAS, Chairman

GILBERT E. SEELEY, Secretary\*

WILLIAM A. CORDON

H. ALDRIDGE GILLESPIE

EMORY L. KEMP

CLYDE E. KESLER

BOYD C. RINGO

DENNIS T. SMITH

GEORGE B. SOUTHWORTH

## **GENERAL ACTIVITIES COMMITTEE**

(In charge of planning, coordination, communications, member services, and industry advancement programs)

S. D. BURKS, Chairman

ROBERT E. WILDE, Secretary\*

ARTHUR R. ANDERSON

CLYDE E. KESLER

MICHAEL A. LOMBARD

GEORGE H. PARIS

FRANCIS J. PRINCIPE

EMIL SCHMID

KENNETH D. SIMMONS

CHARLES W. WILSON

\*American Concrete Institute  
P. O. Box 19150  
Detroit, Michigan 48219

# PROGRAM

## 70th ANNUAL CONVENTION

March 31-April 5, 1974

San Francisco, California

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

### contents

feature	page
breakfast for new committee chairmen .....	6
breakfasts for program participants .....	6
schedule .....	3
special events .....	6
committee index .....	7
committee meetings .....	10
floor plan of meeting rooms .....	37
general session .....	21
symposium on reinforced concrete structures in seismic zones (first session) .....	22
symposium on concrete bridge decks (first session) .....	23
symposium on reinforced concrete structures in seismic zones (second session) .....	24
symposium on concrete bridge decks (concluding session) .....	25
symposium on reinforced concrete structures in seismic zones (concluding session) .....	26
symposium on concrete pavement design and construction .....	27
research on plain and reinforced concrete .....	29
symposium on deflections of concrete structures .....	28
symposium on industrialized concrete construction .....	31
awards luncheon .....	33
exhibits guide .....	32
ladies program in brief .....	34
future aci conventions .....	32
aci san francisco convention committee .....	35

## schedule

### HONOLULU, HAWAII

#### SUNDAY, MARCH 24

all day  
Arrival in Honolulu

#### MONDAY, MARCH 25

morning  
City Punchbowl Tour  
evening  
Aikane Sunset Sail (Sip-Sup & Sail)

#### TUESDAY, MARCH 26

all day  
unscheduled activities

#### WEDNESDAY, MARCH 27

all day  
unscheduled activities

#### THURSDAY, MARCH 28

9:00 a.m. - 11:30 a.m.  
Symposium on Concrete in Hawaii  
(ACI and Cement and Concrete Products Industry of Hawaii [CCPIH])  
12:45 p.m. - 5:00 p.m.  
Tour of Concrete in Hawaii

#### FRIDAY, MARCH 29

9:00 a.m. - 12:30 p.m.  
Symposium on Offshore Concrete Structures (ACI Committee 357 and CCPIH) (first session)  
1:30 p.m. - 5:30 p.m.  
Symposium on Offshore Concrete Structures (concluding session)

#### SATURDAY, MARCH 30

all day  
Depart for San Francisco

## SAN FRANCISCO, CALIFORNIA

#### SUNDAY, MARCH 31

10:00 a.m. - 8:00 p.m.  
Administrative and technical committee meetings

#### MONDAY, APRIL 1

8:00 a.m. - 10:00 p.m.  
Administrative, technical, and educational committee meetings  
2:00 p.m. - 6:00 p.m.  
Earthquake Laboratory Tour

#### TUESDAY, APRIL 2

8:00 a.m. - 8:30 p.m.  
Administrative, technical, and educational committee meetings  
10:30 a.m. - 5:30 p.m.

**WEDNESDAY, APRIL 3**

- 9:00 a.m. - 12:00 noon  
General Session Grand Ballroom
- 10:00 a.m. - 5:00 p.m.  
Exhibits Open Gold Ballroom
- 1:00 p.m. - 6:00 p.m.  
Administrative, technical, and educational committee meetings
- 2:00 p.m. - 5:00 p.m.  
Symposium on Reinforced Concrete Structures in Seismic Zones (American Concrete Institute/Structural Engineers Association of California) (first session) Rose Room
- 2:00 p.m. - 5:00 p.m.  
Symposium on Concrete Bridge Decks (Committees 345, 443, and 546) (first session) Concert Room  
Napa Valley—Wine Country Tour
- 12:30 p.m. - 5:00 p.m.  
Exhibits Open Gold Ballroom
- 6:30 p.m. - 8:00 p.m.  
Concrete Mixer Grand Ballroom

**THURSDAY, APRIL 4**

- 8:00 a.m. - 9:00 p.m.  
Administrative, technical, and educational committee meetings
- 9:00 a.m. - 12:00 noon  
Symposium on Reinforced Concrete Structures in Seismic Zones (second session) Rose Room
- 9:00 a.m. - 12:00 noon  
Symposium on Concrete Bridge Decks (concluding session) Concert Room
- 10:00 a.m. - 5:00 p.m.  
Exhibits Open Gold Ballroom
- 12:15 p.m.  
Awards Luncheon Ralston Room
- 2:30 p.m. - 5:30 p.m.  
Symposium on Reinforced Concrete Structures in Seismic Zones (concluding session) Rose Room
- 2:30 p.m. - 5:30 p.m.  
Symposium on Concrete Pavement Design and Construction (Committees 316 and 325) Concert Room
- 5:00 p.m.  
Exhibits close

**FRIDAY, APRIL 5**

- 8:00 a.m. - 1:00 p.m.  
Administrative and technical committee meetings
- 9:00 a.m. - 12:00 noon  
Research on Plain and Reinforced Concrete (Committee 115) Ralston Room
- 9:00 a.m. - 12:00 noon  
Symposium on Deflections of Concrete Structures (Committee 435) Rose Room
- 9:00 a.m. - 12:00 noon  
Symposium on Industrialized Concrete Construction (Committee 356) Concert Room
- 12:00 noon  
CONVENTION CLOSES

**TOUR:****FRIDAY, APRIL 5**

- 10:00 a.m. - 2:00 p.m.  
San Francisco Bay Cruise

**special events****HAWAII SEGMENT**

**City Punchbowl Tour** . . . Monday, March 25, morning. Meet buses in front of hotel.

**Aikane Sunset Sail** . . . Monday, March 25, evening. Sip, sup, and sail.

**SAN FRANCISCO SEGMENT**

**Concrete Canoe** . . . on display all week in the Gold Ballroom. Now is your chance to see one of the entries in the 1973 Concrete Canoe races.

**Publications Display** . . . in the Gold Ballroom all week. See the latest ACI publications now available. Orders are taken at the Registration Desk, also in the Gold Ballroom.

**Photo Display** . . . all week in the Gold Ballroom.

**Earthquake Laboratory Tour** . . . Monday, April 1, 2:00 - 6:00 p.m. A unique opportunity to see the research being undertaken on construction in seismic zones.

**Using the Strength Design Handbook** . . . Preview ACI's instructional cassette/workbook program on ACI's SP-17 (73). The program is meant for individual or group training in the use of the handbook as a time and money saving design aid. Monday, April 1, 2:00 - 3:30 p.m., and Thursday, April 4, 4:00 - 6:00 p.m., in Parlor C.

**Hospitality Suite** . . . for Exhibitors only. Monday, April 1, 6:00 - 7:30 p.m.

**Napa Valley—Wine Country Tour** . . . Tuesday, April 2, 10:30 a.m. - 5:30 p.m. A chance to join spouses to see the famous Napa Valley wineries. Tour includes the Robert Mondavi Winery in Oakville, the Beringer Brothers Winery in St. Helena, and time for shopping at Vintage 1870, an art center in Yountville. Lunch will be catered at the Mondavi Winery by Andre Mercier of the Mirabeau Restaurant in Oakland.

**Educational-Technical Exhibits** . . . Tuesday through Thursday in the Gold Ballroom. See the latest tools and services available to the concrete industry.

**PCA Alumni Association Meeting . . . Tuesday, April 2,**  
5:00 - 7:00 p.m. in Room D.

**The Delmar L. Bloem Distinguished Service Awards** will be given out at the General Session, Wednesday, April 3, in the Grand Ballroom. Come and see your fellow committee members receive the awards they have earned through years of volunteer committee work.

**"Concrete Mixer" social hour . . . Wednesday, April 3, 6:30 - 8:00 p.m.** in the Grand Ballroom.

**Awards Luncheon and New Officer Installation . . . Thursday, 12:15 p.m.,** in the Ralston Room. Good food and drink and multi-media presentations combined into a new format. Get your ticket early!

**San Francisco Bay Cruise . . . Friday, April 5, 10:00 a.m. - 2:00 p.m.** Cruise with your spouse in a chartered vessel and view Alcatraz Island, the Golden Gate Bridge, Angel Island, Treasure Island, and the San Francisco-Oakland Bay Bridge. There will be a Snack Bar on the boat and a chartered bus will take you from the Sheraton Palace to Fisherman's Wharf and return.

**Breakfasts (by invitation only):**

Tuesday, April 2, 7:00 a.m.

Breakfast for newly appointed chairmen of technical committees. French Parlor.

Wednesday, April 3, 7:00 a.m.

Breakfast for program participants in the General Session, Symposium on Concrete Bridge Decks (first session) and Symposium on Reinforced Concrete Structures in Seismic Zones (first session). French Parlor.

Thursday, April 4, 7:00 a.m.

Breakfast for program participants in the Symposium on Reinforced Concrete Structures in Seismic Zones (second and third sessions), Symposium on Concrete Bridge Decks (second session), and Symposium on Concrete Pavement Design and Construction. French Parlor.

Friday, April 5, 7:00 a.m.

Breakfast for program participants in the session on Research in Plain and Reinforced Concrete, Symposium on Deflections of Concrete Structures, and Symposium on Industrialized Concrete Construction. French Parlor.

**New Committee Meeting Format**

A new committee scheduling format is being introduced on a trial basis in San Francisco to try to minimize conflicts between committee meetings. Some other objectives are to reduce the number of late evening meetings, to give members and others a chance to visit more meetings of interest, and to reduce overcrowding of eating facilities during lunch.

The starting time of first sessions each day will be staggered and there will be a slight difference on termination time of committee meetings. The following table indicates how this will be handled with a few variations.

Committee Meetings				
Session 1	Session 2	Session 3	Session 4	Session 5
8:00-10:00	10:00-Noon (lunch)	1:00-3:00	3:00-5:00	5:00-7:00
8:30-10:30	10:30-12:30 (lunch)	1:30-3:30	3:30-5:30	5:30-7:30
9:00-11:00	11:00-1:00 (lunch)	2:00-4:00	4:00-6:00	6:00-8:00

  

Symposium Sessions	
First 3-hour session	Second 3-hour session
9:00-Noon	2:00-5:00

To determine the starting and termination times for committee meetings, please check the index for the committee number or title and the day it's to be held, then check that day from morning through afternoon on the committee schedule. The only committees that carry over from one day to the next are 313, 318, and 349.

This is an experiment and questionnaires will be distributed at committee meetings to secure the membership views of the new system.

**INDEX OF COMMITTEE MEETINGS**

number	committee short title	day
---	Board of Direction	Tuesday
---	New Board of Direction	Thursday
---	Technical Activities Committee	Monday
---	Educational Activities Committee	Monday
---	General Activities Committee	Monday
---	Board Committee on International Activities	Monday
---	Standards Board	Wednesday
---	Planning Committee	Sunday
---	Specifications Review Committee	Wednesday
---	TAC Task Group on Transportation	Thursday
---	TAC Task Group on Progressive Collapse	Friday
---	Institute and Industry Advancement Committee	Sunday
---	Convention Committee	Wednesday
---	Chapter Activities Committee	Monday

# INDEX OF COMMITTEE MEETINGS

number	committee short title	day
103	Monographs	Thursday
114	Research and Development	Monday
116	Nomenclature	Tuesday
117	Tolerances	Monday
118	Use of Computers	Tuesday
120	History of Concrete	Wednesday
201	Durability of Concrete	Tuesday
207	Mass Concrete	Tuesday
209	Creep and Shrinkage in Concrete	Thursday
209-11	Creep and Shrinkage in Concrete	Thursday
211	Proportioning Concrete Mixes	Monday
211-7	Mix Proportioning of Mass Concrete	Sunday
212	Admixtures	Monday
213	Lightweight Aggregates and Lightweight Aggregate Concrete	Monday
214	Evaluation of Tests on Strength of Concrete	Tuesday
215	Fatigue of Concrete	Tuesday
216	Fire Resistance and Fire Protection of Structures	Wednesday
222	Corrosion of Metals in Concrete	Tuesday
223	Expansive Cement Concretes	Tuesday
224	Cracking	Tuesday
301	Specifications for Structural Concrete	Tuesday
302	Concrete Floor Finishes	Thursday
303	Architectural Concrete	Monday
304	Measuring, Mixing, Transporting, and Placing Concrete	Monday
305	Hot Weather Concreting	Monday
306	Cold Weather Concreting	Monday
307	Reinforced Concrete Chimneys	Tuesday
308	Curing Concrete	Thursday
309	Consolidation of Concrete	Tuesday
311	Inspection of Concrete	Thursday
313	Concrete Bins and Silos	Monday and Tuesday
315	Detailing Reinforced Concrete Structures	Monday
316	Construction of Concrete Pavements and Bases	Tuesday
318	Standard Building Code	Wednesday and Thursday
318-A	General	Monday
318-B	Concrete Quality Mixing and Placement	Sunday
318-C	Formwork, Embedded Pipes, and Construction Joints	Monday
318-D	Details and Development of Reinforcement	Tuesday
318-F	Serviceability	Monday
318-G	Flexure and Axial Loads	Tuesday
318-H	Shear and Torsion	Monday
318-I	Slab Systems	Monday
318-K	Precast and Composite Concrete	Monday
318-L	Prestressed Concrete	Tuesday
318	Task Group on Code Simplification	Monday
318	Task Group on Progressive Collapse	Monday
325	Structural Design of Pavements for Highways and Airports	Tuesday
332	Residential Concrete Work	Friday
333	Composite Construction	Friday
334	Concrete Shell Design and Construction	Monday
336	Combined Footings and Pier Foundations	Wednesday

# INDEX OF COMMITTEE MEETINGS

number	committee short title	day
340	Ultimate Strength Design Handbook	Tuesday
344	Circular Prestressed Concrete Structures	Thursday
345	Concrete Bridge Decks	Thursday
347	Formwork for Concrete	Tuesday
348	Structural Safety	Tuesday
349	Concrete Nuclear Structures	Wednesday and Thursday
350	Sanitary Engineering Structures	Tuesday
351	Foundations for Equipment and Machinery	Monday
351Sub	Foundations for Equipment and Machinery	Monday
352	Joints and Connections in Monolithic Concrete Structures	Tuesday
355	Anchorage to Concrete	Monday
356	Industrialized Concrete Construction	Thursday
359	Concrete Components for Nuclear Reactors	Friday
359	Joint ACI-ASME Working Groups	Thursday
408	Bond Stress	Tuesday
423	Prestressed Concrete	Tuesday
426	Shear and Diagonal Tension	Monday
428	Limit Design	Tuesday
435	Deflection of Concrete Building Structures	Wednesday
437	Strength Evaluation of Existing Concrete Structures	Tuesday
438	Torsion	Tuesday
439	High-Strength Reinforcement in Concrete	Tuesday
441	Reinforced Concrete Columns	Monday
442	Response of Buildings to Lateral Forces	Monday
443	Concrete Bridge Design	Monday
444	Models of Concrete Structures	Tuesday
503	Adhesives for Concrete	Tuesday
504	Joint Sealants	Thursday
506	Shotcreting	Wednesday
512	Precast Structural Concrete	Friday
515	Coatings for Concrete	Monday
516	High Pressure Steam Curing	Monday
517	Accelerated Curing of Concrete at Atmospheric Pressure	Tuesday
523	Insulating and Cellular Concrete	Tuesday
524	Portland Cement Plastering	Tuesday
531	Concrete Masonry Structures	Tuesday
532	Lightweight Concrete Masonry	Thursday
533	Precast Panels	Thursday
543	Concrete Piles	Monday
544	Fiber-Reinforced Concrete	Tuesday
546	Repair of Concrete	Wednesday
547	Refractory Concrete	Tuesday
548	Polymers in Concrete	Wednesday
E-601	Seminars and Workshops	Monday
E-701	Enchiridia—Materials	Tuesday
E-702	Enchiridia—Structural Design	Wednesday
E-703	Enchiridia—Construction	Wednesday
E-704	Enchiridia—Building Code	Tuesday
E-801	Student Concrete Projects	Monday
	ANSI Committee A10, Subcommittee 17	
	Concrete Construction Safety	Monday
	ASCE Tall Building Reinforced Concrete Subcommittee	Monday

## COMMITTEE MEETINGS

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

### COMMITTEE Meeting Room

#### SUNDAY, MARCH 31

##### 10:00 a.m. - 12:00 noon

--- Planning Committee Royal Suite

##### 1:00 p.m. - 3:00 p.m.

--- Planning Committee Royal Suite

##### 3:00 p.m. - 5:00 p.m.

211 Subcommittee 7, Mix Proportioning of Mass Concrete Forty-Niner

##### 3:30 p.m. - 5:30 p.m.

318 Subcommittee B, Concrete Quality Mixing and Placement Parlor D

##### 6:00 p.m. - 8:00 p.m.

--- Institute and Industry Advancement Committee Royal Suite

#### MONDAY, APRIL 1

##### 8:00 a.m. - 10:00 a.m.

313 Concrete Bins and Silos California  
315 Detailing Reinforced Concrete Structures Royal Suite  
318 Task Group on Progressive Collapse Parlor E  
516 High Pressure Steam Curing Forty-Niner

##### 8:30 a.m. - 10:30 a.m.

--- Educational Activities Committee English Room  
--- General Activities Committee Comstock  
303 Architectural Concrete Sierra  
515 Coatings for Concrete Parlor D

##### 9:00 a.m. - 11:00 a.m.

211 Proportioning Concrete Mixes Bonanza  
212 Admixtures Golden Gate  
318 Subcommittee F, Serviceability Parlor C  
318 Subcommittee K, Precast and Composite Concrete Parlor G  
351Sub Foundations for Equipment and Machinery Room D  
543 Concrete Piles Room C  
E-801 Student Concrete Projects Room B

##### 10:00 a.m. - 12:00 noon

313 Concrete Bins and Silos California  
516 High Pressure Steam Curing Forty-Niner

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

--- Educational Activities Committee English Room  
--- General Activities Committee Comstock  
303 Architectural Concrete Sierra  
515 Coatings for Concrete Parlor D

##### 11:00 a.m. - 1:00 p.m.

212 Admixtures Golden Gate  
318 Subcommittee F, Serviceability Parlor C  
426 Shear and Diagonal Tension Room A

##### 12:00 noon - 4:00 p.m.

334 Concrete Shell Design and Construction Room D

##### 1:00 p.m. - 3:00 p.m.

305 Hot Weather Concreting Forty-Niner  
306 Cold Weather Concreting Royal Suite  
313 Concrete Bins and Silos California  
351 Foundations for Equipment and Machinery Parlor E

##### 1:30 p.m. - 3:30 p.m.

--- Educational Activities Committee English Room  
--- General Activities Committee Comstock  
303 Architectural Concrete Sierra  
515 Coatings for Concrete Parlor D

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

--- Technical Activities Committee French Parlor  
117 Tolerances Room C  
213 Lightweight Aggregates and Lightweight Aggregate Concrete Bonanza  
304 Measuring, Mixing, Transporting, and Placing Concrete Room A  
318 Subcommittee I, Slab Systems Room B  
318 Task Group on Code Simplification Parlor G  
443 Concrete Bridge Design Golden Gate

##### 2:00 p.m. - 3:30 p.m.

--- Strength Design Handbook Cassette Program Preview Parlor C

##### 3:00 p.m. - 5:00 p.m.

313 Concrete Bins and Silos California  
351 Foundations for Equipment and Machinery Parlor E

### 3:30 p.m. - 5:30 p.m.

---	<b>Educational Activities Committee</b>	English Room
303	Architectural Concrete	Sierra
515	Coatings for Concrete	Parlor D

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

---	<b>Technical Activities Committee</b>	French Parlor
213	Lightweight Aggregates and Lightweight Aggregate Concrete	Bonanza
441	Reinforced Concrete Columns	Comstock
443	Concrete Bridge Design	Golden Gate
---	<b>ANSI Committee A10, Subcommittee 17,</b>	
---	Concrete Construction Safety	Parlor C

### 4:30 p.m. - 6:30 p.m.

---	<b>Chapter Activities Committee</b>	Room D
318	<b>Subcommittee A, General</b>	Parlor G

### 5:00 p.m. - 7:00 p.m.

114	Research and Development	California
355	Anchorage to Concrete	Royal Suite
E-601	Seminars and Workshops	Forty-Niner

### 5:30 p.m. - 7:30 p.m.

---	<b>Educational Activities Committee</b>	English Room
303	Architectural Concrete	Sierra
318	<b>Subcommittee C, Formwork, Embedded Pipes, and Construction Joints</b>	Parlor D

### 6:00 p.m. - 8:00 p.m.

---	<b>Board Committee on International Activities</b>	Room B
---	<b>Technical Activities Committee</b>	French Parlor
318	<b>Subcommittee H, Shear and Torsion</b>	Room C
441	Reinforced Concrete Columns	Comstock
442	Response of Buildings to Lateral Forces	Bonanza
443	Concrete Bridge Design	Golden Gate
---	<b>ANSI Committee A10, Subcommittee 17,</b>	
---	Concrete Construction Safety	Parlor C
---	<b>ASCE Tall Building Reinforced Concrete Subcommittee</b>	Room A

### 6:30 p.m. - 8:30 p.m.

---	<b>Chapter Activities Committee</b>	Room D
318	<b>Subcommittee A, General</b>	Parlor G

### 8:00 p.m. - 10:00 p.m.

---	<b>ASCE Tall Building Reinforced Concrete Subcommittee</b>	Room A
-----	--	--------

## TUESDAY, APRIL 2

### 8:00 a.m. - 10:00 a.m.

313	Concrete Bins and Silos	California
428	Limit Design	Royal Suite
438	Torsion	Forty-Niner
547	Refractory Concrete	Parlor E

### 8:30 a.m. - 10:30 a.m.

223	Expansive Cement Concretes	Comstock
316	Construction of Concrete Pavements and Bases	Parlor D
318	<b>Subcommittee L, Prestressed Concrete (with Committee 423)</b>	Sierra
423	Prestressed Concrete (with Subcommittee L of Committee 318)	Sierra
531	Concrete Masonry Structures	English Room

### 9:00 a.m. - 11:00 a.m.

118	Use of Computers	Room C
201	Durability of Concrete	French Parlor
309	Consolidation of Concrete	Room A
318	<b>Subcommittee D, Details and Development of Reinforcement</b>	Room B
347	Formwork for Concrete	Parlor G
408	Bond Stress	Bonanza

### 9:30 a.m. - 12:00 noon

---	<b>Board of Direction</b>	Golden Gate
-----	---------------------------	-------------

### 10:00 a.m. - 12:00 noon

313	Concrete Bins and Silos	California
438	Torsion	Forty-Niner
547	Refractory Concrete	Parlor E
E-704	Enchiridia—Building Code	Room 264

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

222	Corrosion of Metals in Concrete	Royal Suite
223	Expansive Cement Concretes	Comstock
423	Prestressed Concrete	Sierra
531	Concrete Masonry Structures	English Room

### 11:00 a.m. - 1:00 p.m.

118	Use of Computers	Room C
201	Durability of Concrete	French Parlor
309	Consolidation of Concrete	Room A
318	<b>Subcommittee D, Details and Development of Reinforcement</b>	Room B
325	Structural Design of Pavements for Highways and Airports	Parlor D
347	Formwork for Concrete	Parlor G
408	Bond Stress	Bonanza



## 1:00 p.m. - 3:00 p.m.

313	Concrete Bins and Silos	California
437	Strength Evaluation of Existing Concrete Structures	Forty-Niner Parlor E
547	Refractory Concrete	Royal Suite
E-701	Enchiridia—Materials	Royal Suite

## 1:30 p.m. - 3:30 p.m.

223	Expansive Cement Concretes	Comstock
423	Prestressed Concrete	Sierra
531	Concrete Masonry Structures	English Room

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

118	Use of Computers	Room C
207	Mass Concrete	Parlor G
214	Evaluation of Tests on Strength of Concrete	French Parlor
307	Reinforced Concrete Chimneys	Room A
325	Structural Design of Pavements for Highways and Airports	Parlor D
340	Ultimate Strength Design Handbook	Room B
408	Bond Stress	Bonanza
523	Insulating and Cellular Concretes	Parlor C

## 2:00 p.m. - 6:00 p.m.

---	Board of Direction	Golden Gate
-----	--------------------	-------------

## 3:00 p.m. - 5:00 p.m.

313	Concrete Bins and Silos	California
318	Subcommittee G, Flexure and Axial Loads	Parlor E

## 3:30 p.m. - 5:30 p.m.

116	Nomenclature	Royal Suite
423	Prestressed Concrete	Sierra
517	Accelerated Curing of Concrete at Atmospheric Pressure	Comstock
531	Concrete Masonry Structures	English Room

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

118	Use of Computers	Room C
224	Cracking	Bonanza
307	Reinforced Concrete Chimneys	Room A
340	Ultimate Strength Design Handbook	Room B
523	Insulating and Cellular Concretes	Parlor C

## 4:30 p.m. - 6:30 p.m.

348	Structural Safety	Parlor D
350	Sanitary Engineering Structures	Parlor G
352	Joints and Connections in Monolithic Concrete Structures	French Parlor

## 5:00 p.m. - 7:00 p.m.

215	Fatigue of Concrete	Forty-Niner
444	Models of Concrete Structures	California

## 5:30 p.m. - 7:30 p.m.

116	Nomenclature	Royal Suite
301	Specifications for Structural Concrete	Sierra
439	High-Strength Reinforcement in Concrete	Parlor E
503	Adhesives for Concrete	English Room
517	Accelerated Curing of Concrete at Atmospheric Pressure	Comstock

## 6:00 p.m. - 8:00 p.m.

224	Cracking	Bonanza
307	Reinforced Concrete Chimneys	Room A
340	Ultimate Strength Design Handbook	Room B
544	Fiber-Reinforced Concrete	Room C

## 6:30 p.m. - 8:30 p.m.

348	Structural Safety	Parlor D
350	Sanitary Engineering Structures	Parlor G
352	Joints and Connections in Monolithic Concrete Structures	French Parlor
524	Portland Cement Plastering	Parlor C

## WEDNESDAY, APRIL 3

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

GENERAL SESSION—See Page Grand Ballroom

## 1:00 p.m. - 3:00 p.m.

---	Convention Committee	Room A
216	Fire Resistance and Fire Protection of Structures	Parlor E
336	Combined Footings and Pier Foundations	Forty-Niner
359	Sub-Group on Materials, Construction, and Examination	Room B
546	Repair of Concrete	Royal Suite
548	Polymers in Concrete	California

## 1:30 p.m. - 3:30 p.m.

---	Specifications Review Committee	Parlor D
318	Standard Building Code	Comstock
506	Shotcreting	Sierra
E-703	Enchiridia—Construction	English Room

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

---	Standards Board	Parlor G
120	History of Concrete	French Parlor
349	Concrete Nuclear Structures	Golden Gate
435	Deflection of Concrete Building Structures	Bonanza
E-702	Enchiridia—Structural Design	Parlor C

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

**SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES** (Cospponsored by Structural Engineers Association of California and American Concrete Institute) (first session) See Page Rose Room

**SYMPOSIUM ON CONCRETE BRIDGE DECKS** (Sponsored by ACI Committees 345, 443, and 546) (first session) See Page Concert Room

## 3:00 p.m. - 5:00 p.m.

- **Convention Committee** Room A
- 216 Fire Resistance and Fire Protection of Structures Parlor E
- 359 **Sub-Group** on Materials, Construction, and Examination Room B
- 546 Repair of Concrete Royal Suite

## 3:30 p.m. - 5:30 p.m.

- **Specifications Review Committee** Parlor D
- 318 Standard Building Code Comstock
- 506 Shotcreting Sierra
- E-703 Enchiridia—Construction English Room

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

- 120 History of Concrete French Parlor
- 349 Concrete Nuclear Structures Golden Gate
- 435 Deflection of Concrete Building Structures Bonanza

## THURSDAY, APRIL 4

### 8:00 a.m. - 10:00 a.m.

- 532 Lightweight Concrete Masonry California

### 8:30 a.m. - 10:30 a.m.

- 311 Inspection of Concrete Sierra
- 318 Standard Building Code Comstock
- 356 Industrialized Concrete Construction English Room

### 9:00 a.m. - 11:00 a.m.

- 103 Monographs French Room
- 344 Circular Prestressed Concrete Structures Royal Suite
- 349 Concrete Nuclear Structures Golden Gate
- 359 Joint ACI-ASME Working Group Forty-Niner
- 359 Joint ACI-ASME Working Group Parlor E
- 359 Joint ACI-ASME Working Group Parlor D
- 359 Joint ACI-ASME Working Group Parlor G
- 359 Joint ACI-ASME Working Group Room A
- 359 Joint ACI-ASME Working Group Room B
- 359 Joint ACI-ASME Working Group Room C
- 504 Joint Sealants Bonanza

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

**SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES** (second session) See Page Rose Room

**SYMPOSIUM ON CONCRETE BRIDGE DECKS** (concluding session) See Page Concert Room

## 10:00 a.m. - 12:00 noon

--- **TAC Task Group** on Transportation California

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

- 311 Inspection of Concrete Sierra
- 318 Standard Building Code Comstock
- 356 Industrialized Concrete Construction English Room

## 11:00 a.m. - 1:00 p.m.

- 359 Joint ACI-ASME Working Group—See listing under 9:00 - 11:00 a.m. time.

## 1:30 p.m. - 3:30 p.m.

- 318 Standard Building Code Comstock

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

- 359 Joint ACI-ASME Working Group—See listing under 9:00 - 11:00 a.m. time.

## 2:30 p.m. - 5:00 p.m.

- **New Board of Direction** Sierra

## 2:30 p.m. - 5:30 p.m.

**SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES** (concluding session) See Page Rose Room

**SYMPOSIUM ON CONCRETE PAVEMENT DESIGN AND CONSTRUCTION** (Sponsored by ACI Committees 316 and 325) See Page Concert Room

## 3:00 p.m. - 5:00 p.m.

- 209 Creep and Shrinkage in Concrete California

## 3:30 p.m. - 5:30 p.m.

- 318 Standard Building Code Comstock
- 356 Industrialized Concrete Construction English Room

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

- **Strength Design Handbook Cassette Program Preview** Parlor C  
302 Concrete Floor Finishes Bonanza  
345 Concrete Bridge Decks Golden Gate  
359 Joint ACI-ASME Working Group—See listing under 9:00 - 11:00 a.m. time.  
533 Precast Panels French Parlor

## 5:00 p.m. - 7:00 p.m.

- 209 **Subcommittee II, Creep and Shrinkage in Concrete** California

## 5:30 p.m. - 7:30 p.m.

- 318 **Standard Building Code** Comstock

## 6:00 p.m. - 8:00 p.m.

- 302 Concrete Floor Finishes Bonanza  
359 Joint ACI-ASME Working Group—See listing under 9:00 - 11:00 a.m. time.  
533 Precast Panels French Parlor

## 7:00 p.m. - 9:00 p.m.

- 308 **Curing Concrete** Golden Gate

## FRIDAY, APRIL 5

### 8:30 a.m. - 10:30 a.m.

- 332 Residential Concrete Work Parlor D  
359 Concrete Components for Nuclear Reactors Comstock

### 9:00 a.m. - 11:00 a.m.

- **TAC Task Group on Progressive Collapse** Golden Gate  
333 Composite Construction Parlor G  
512 Precast Structural Concrete Parlor C

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

**RESEARCH IN PLAIN AND REINFORCED CONCRETE** (Sponsored by ACI Committee 115) See Page Ralston Room

**SYMPOSIUM ON DEFLECTIONS OF CONCRETE STRUCTURES** (Sponsored by ACI Committee 435) See Page Rose Room

**SYMPOSIUM ON INDUSTRIALIZED CONCRETE CONSTRUCTION** (Sponsored by ACI Committee 356) See Page Concert Room

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

- 359 Concrete Components for Nuclear Reactors Comstock

### 11:00 a.m. - 1:00 p.m.

- **TAC Task Group on Progressive Collapse** Golden Gate

thursday, march 28

9:00 a.m. - 11:30 a.m.

## CONCRETE IN HAWAII

*Likelike Room  
Princess Kaiulani Hotel*

### sponsored by aci and the cement and concrete products industry of hawaii

#### *first session*

**Session Chairman:** George S. Ishida, executive director, Cement and Concrete Products Industry of Hawaii, Honolulu, Hawaii

#### **Introduction to the Symposium**

Robert L. Muller, president, Cement and Concrete Products Industry of Hawaii, Honolulu, Hawaii  
and

Robert E. Philleo, president, American Concrete Institute, and chief, Concrete Branch, Office, Chief of Engineers, Washington, D. C.

#### *Concrete Usage for Construction in Hawaii* **An Engineer's Point of View**

Don S. Shimazu, president, Shimazu, Shimabukuro and Fukuda, Inc., Honolulu, Hawaii

#### **An Architect's Point of View**

Charles R. Sutton, president, Charles R. Sutton and Associates, Inc., Honolulu, Hawaii

#### *Statistical Evaluation of Concrete Performance* **Theory of Probability and Its Application to Evaluating Concrete Performance**

Harold S. Hamada, associate professor of civil engineering, University of Hawaii, Honolulu, Hawaii

#### **Engineering Profession's Acceptance and Concrete Industry's Application and Use of the Theory**

Watson S. Clifford, manager, Product Engineering Department, HC&D, Ltd., Honolulu, Hawaii

#### **Introduction to Concrete in Hawaii Tour**

thursday, march 28

12:45 p.m. - 5:00 p.m.

## CONCRETE IN HAWAII

### sponsored by aci and the cement and concrete products industry of hawaii

#### *second session*

#### **Tour of Concrete in Hawaii**

Will include visits to the new Municipal Building, the precast site of concrete "dolos" used for protection of the offshore reef runway, the new sewage treatment plant with its 12,000-ft. ocean outfall, and other concrete projects.

friday, march 29  
9:00 a.m. - 12:30 p.m.

## OFFSHORE CONCRETE STRUCTURES

*Likelike Room  
Princess Kaiulani Hotel*

sponsored by aci committee 357 and the  
cement and concrete products industry of  
hawaii

*first session*

**Session Chairman:** Eivind Hognestad, chairman, ACI Committee 357, and director, Engineering Development Department, Portland Cement Association, Skokie, Illinois

### Introduction to the Symposium

Robert L. Muller, president, Cement and Concrete Products Industry of Hawaii, Honolulu, Hawaii

and

Robert E. Philleo, president, American Concrete Institute, and chief, Concrete Branch, Office, Chief of Engineers, Washington, D. C.

### Concrete Structures: Key to Development of the Oceans

Ben C. Gerwick, Jr., professor of civil engineering, University of California at Berkeley, Berkeley, California

### Submerged Concrete Structures on the Ocean Floor

Harvey H. Haynes, research structural engineer, U. S. Naval Civil Engineering Laboratories, Port Hueneme, California.

### A Feasibility Study of Prestressed Concrete Tanker Ships

Johannes Moe, president, Technical University of Norway, Trondheim, Norway

### Design and Construction of Oceangoing Pretensioned Concrete Barges

Alfred A. Yee, president, Kalfred B. T. Lum and Vicente S. Golveo, associates, Alfred A. Yee & Associates, Honolulu, Hawaii

1:30 p.m. - 5:30 p.m.

*second session*

**Session Chairman:** Robert L. Muller, president, Cement and Concrete Products Industry of Hawaii, Honolulu, Hawaii

### DnV Certification Scheme for Offshore Concrete Structures

E. M. Q. Røren, general manager, DnV Division for Marine Technology, Det Norske Veritas, Oslo, Norway

### Seismic Resistance of Offshore Concrete Structures

Masatane Kokubu, professor, Department of Civil Engineering, and Choshiro Tamura, associate professor, Department of Applied Physics and Applied Mechanics, University of Tokyo, Tokyo, Japan

### Floating Exposition Sites

John P. Craven, dean of marine programs, University of Hawaii, and marine affairs coordinator, State of Hawaii, Honolulu, Hawaii

### Gravity Concrete Structures in Petroleum Fields

Eivind Hognestad, director, Engineering Development Department, Portland Cement Association, Skokie, Illinois

### Epilogue

### Discussion

wednesday, april 3  
9:00 a.m. - 12:00 noon

## GENERAL SESSION

*Grand Ballroom*

**Session Chairman:** Everette W. Osgood, chairman, 1974 Annual ACI Convention, and director of technical services, Granite Rock Company, Watsonville, California

### Presidential Address—" . . . which the days never knew."

Robert E. Philleo, President, ACI, and chief, Concrete Branch, Office, Chief of Engineers, Washington, D. C.

### Presentation of Delmar L. Bloem Distinguished Service Awards

#### Awardees

CALVIN C. OLESON

"For his long service as Chairman of Committee 308 during which time the committee produced, 'Recommended Practice for Curing Concrete (ACI 308-71),' the Institute's first standard for curing."

W. GORDON PLEWES

"For consistently distinguished activity in ACI committee work, particularly as a member of Committee 318 and the Technical Activities Committee and as Chairman of Committee 437."

### PROGRAM SESSION:

#### Concrete Lining of the California Aqueduct

Robert F. Adams, staff concrete engineer, California Department of Water Resources, Sacramento, California

#### Post-Tensioned Box Girder Bridges in California

W. J. Jurkovich, supervising bridge engineer, California Department of Transportation, Sacramento, California

#### Historic Concrete Structures in the Bay Area

Herbert A. Brauner, Chapter Historian, Northern California Chapter, ACI, and chief engineer, Prestress Division, Santa Fe Engineering and Construction Company, Petaluma, California

### BUSINESS SESSION:

#### Presentation of Proposed Revisions to "Building Code Requirements for Reinforced Concrete (ACI 318-71)" (second interim revision)

George F. Leyh, chairman, ACI Committee 318, and associate technical director, Concrete Reinforcing Steel Institute, Chicago, Illinois; Keith O. O'Donnell, chairman, Subcommittee, A, General, and structural engineer, Office, Chief of Engineers, Washington, D. C.; and Eugene P. Holland, chairman, Subcommittee I, Slab Systems, and president, Wiesinger-Holland, Ltd., Chicago, Illinois

wednesday, april 3

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

## **SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES**

*Rose Room*

**cospponsored by structural engineers associ-  
ation of california and american concrete  
institute**

**aci committees involved are: 318, 348,  
352, 426, 441, 442, and 443**

*Session I: Reinforced Concrete Structural Systems  
for Seismic Zones*

**Session Chairman:** James O. Jirsa, chairman, Symposium Steering Committee, and associate professor, Department of Civil Engineering, University of Texas at Austin, Austin, Texas

### **Introduction to Symposium**

John F. McLaughlin, chairman, American Concrete Institute Technical Activities Committee, and head, School of Civil Engineering, Purdue University, West Lafayette, Indiana  
and

H. S. Kellam, president, Structural Engineers Association of Northern California, and partner, Graham & Kellam, Structural Engineers, San Francisco, California

### **Earthquakes—Problems and Possible Solutions**

Roland L. Sharpe, consulting engineer and executive director, Applied Technology Council, San Francisco, California

### **Seismic Design of Reinforced Concrete Buildings**

Robert Englekirk, vice-president, Ruthroff and Englekirk, Consulting and Structural Engineers, Los Angeles, California

### **The Structural Design and Construction of Structures for Earth- quakes in Puerto Rico**

Vincent J. De Simone, principal, De Simone and Chaplin, Consulting Engineers, New York, New York; and George Pavarini, owner, Pavarini Construction Company, New York, New York

### **Earthquake — Repair — Earthquake**

Raul Rios Jimenez, partner, Gallegos, Rios, Casabonne, Uccelli, Icochea, Consulting Engineers, Lima, Peru

### **Techniques for Retrofitting Existing Bridges to Reduce Suscepti- bility to Earthquake Damage**

R. R. Robinson, research engineer, George Ojdrovich, assistant research engineer, Engineering Mechanics Division, IIT Research Institute, Chicago, Illinois; and James D. Cooper, structural research engineer, Structures and Applied Mechanics, Federal Highway Administration, Washington, D. C.

wednesday, april 3

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

## **SYMPOSIUM ON CONCRETE BRIDGE DECKS**

*Concert Room*

**sponsored by aci committees 345, 443, 546**

### *Session I*

**Session Chairman:** Philip D. Cady, chairman, ACI Committee 345, and professor, Department of Civil Engineering, Pennsylvania State University, University Park, Pennsylvania

### **The Decade of the Deck**

Orrin Riley, associate, Howard, Needles, Tammen and Bergendoff, Fairfield, New Jersey

### **Preconstruction Planning, Inspection, and Post-Construction Care**

Charles Kline, regional construction engineer, Pennsylvania Department of Transportation, Harrisburg, Pennsylvania

### **Falsework and Formwork, Reinforcement, and Concrete Mate- rials and Properties**

Paul Klieger, director, Concrete Materials Research Department, Research and Development Laboratories, Portland Cement Association, Skokie, Illinois

### **Better Bridge Deck Concrete**

W. M. Stingley, assistant engineer of planning and development—research implementation, State Highway Commission of Kansas, Topeka, Kansas

### **Overlays and Two-Course Bridge Deck Construction**

Wallace T. McKeel, Jr., and S. S. Tyson, highway research engineers, Virginia Highway Research Council, Charlottesville, Virginia

### **Polymer-Impregnated Precast, Prestressed Concrete Bridge Decks**

William C. Cowan, structural research engineer, Polymer Concrete and Structural Section, U. S. Bureau of Reclamation, Denver, Colorado; and Allen G. Thurman, consulting structural engineer, Denver, Colorado

thursday, april 4

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

## **SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES**

*Rose Room*

### *Session II: Shear Problems in Seismic Zones*

**Session Chairman:** A. C. Scordelis, professor, Department of Civil Engineering, University of California at Berkeley, Berkeley, California

#### **Presentation of ASCE-SEAOC Report on Shear Walls**

Paul F. Fratessa, structural engineer, Ruthroff and Englekirk, Consulting Structural Engineers, Oakland, California

#### **The Ductility of Reinforced Concrete Shear Walls for Seismic Areas**

Thomas Paulay, senior lecturer in civil engineering, University of Canterbury, Christchurch, New Zealand

#### **Behavior of Low-Rise Shear Walls**

Felix Barda, lecturer, University of New South Wales, Kensington, New South Wales, Australia (formerly associate structural engineer, Structural Development Section, Portland Cement Association); W. G. Corley, manager, Structural Development Section, Portland Cement Association, Skokie, Illinois; and J. M. Hanson, director of structural engineering services, Wiss, Janney, Elstner and Associates, Northbrook, Illinois (formerly assistant manager, Structural Development Section, Portland Cement Association)

#### **Multistory Reinforced Concrete Structures Subjected to Simulated Seismic Base Motions**

S. Otani, research associate, Department of Civil Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois

#### **Shear Strength Decay in Reinforced Concrete Columns Subjected to Large Deflection Reversals**

James K. Wight, professor, Department of Civil Engineering, University of Michigan, Ann Arbor, Michigan; and Mete A. Sozen, professor of civil engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois

#### **Seismic Shear Transfer Across Cracks in Reinforced Concrete**

Peter Gergely, associate professor, Richard N. White, professor, and O. A. Fajardo, research assistant, Department of Structural Engineering, Cornell University, Ithaca, New York; and Jeffrey P. Laible, assistant professor, Worcester Polytechnic Institute, Worcester, Massachusetts

**AWARDS LUNCHEON TODAY . . .**

thursday, april 4

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

## **SYMPOSIUM ON CONCRETE BRIDGE DECKS**

*Concert Room*

**sponsored by aci committees 345, 443, 546**

### *Session II*

**Session Chairman:** Craig A. Ballinger, symposium cochairman, ACI Committee 443, and structural research engineer, U. S. Federal Highway Administration, Structures and Applied Mechanics Division, Washington, D. C.

#### **Test Results and Design Considerations for Fatigue of Concrete Bridge Decks**

Neil M. Hawkins, professor, Department of Civil Engineering, University of Washington, Seattle, Washington

#### **Precast, Prestressed Bridge Decks**

Charles F. Scholer, associate professor, Department of Civil Engineering, Purdue University, Lafayette, Indiana

#### **Bridge Decks—Successful European Installations**

Anton Tedesco, consulting engineer, Bronxville, New York

#### **Techniques for Evaluating Reinforced Concrete Bridge Decks**

James N. Hall, chief, and Jon R. Van Daveer, project manager, Research and Development Demonstration Project Division, Federal Highway Administration, Arlington, Virginia

#### **Considerations for Repairing Salt Damaged Bridge Decks**

Carl F. Stewart, chief, Applied Research Branch, Office of Structures, California Division of Highways, Sacramento, California

#### **Guide for Repair of Concrete Bridge Decks—Interim Report**

Howard L. Furr, chairman, ACI Committee 546, and professor and research engineer, Department of Civil Engineering, Texas A&M University, College Station, Texas

---

---

---

---

thursday, april 4

2:30 p.m. - 5:30 p.m.

## **SYMPOSIUM ON REINFORCED CONCRETE STRUCTURES IN SEISMIC ZONES**

*Rose Room*

### *Session III: Design Problems in Reinforced Concrete Frame Structures*

**Session Chairman:** Loring A. Wyllie, Jr., associate, H. J. Degenkolb and Associates, San Francisco, California

#### **Seismic Behavior of Framed Tubes**

James C. Anderson, engineering analyst, Sargent & Lundy, Engineers, Chicago, Illinois; and German Gurfinkel, associate professor of civil engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois

#### **Biaxial Inelastic Frame Seismic Behavior Using Yield Theories**

L. G. Selna, assistant professor, and Kenneth B. Morrill, student, Department of Civil Engineering, University of California at Los Angeles, Los Angeles, California

#### **Strength of Beam-Column Joints**

S. M. Uzumeri, associate professor of civil engineering, University of Toronto, Toronto, Ontario, Canada

#### **A Steel Fibrous, Ductile Concrete Joint for Seismic-Resistant Structures**

Charles H. Henager, senior engineer, Battelle-Northwest, Richland, Washington

#### **Moment-Resisting Reinforced Concrete Subassemblages Under Cyclic Loading**

E. P. Popov and V. V. Bertero, professors of civil engineering, University of California, Berkeley, California

#### **Bond Deterioration Under Simulated Seismic Loading**

Faisal M. Hassan, design engineer, Bechtel Power Corporation, Los Angeles, California; and Neil M. Hawkins, professor of civil engineering, University of Washington, Seattle, Washington

thursday, april 4

2:30 p.m. - 5:30 p.m.

## **SYMPOSIUM ON CONCRETE PAVEMENT DESIGN AND CONSTRUCTION**

*Concert Room*

### **sponsored by aci committees 325 and 316**

**Session Chairman:** W. M. Stingley, chairman, ACI Committee 316, and assistant engineer of planning and development-research implementation, State Highway Commission of Kansas, Topeka, Kansas

#### **Performance of Concrete Pavements Subjected to Wide-Body Jet Aircraft Loadings**

Ronald L. Hutchinson, pavement program manager, U. S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi

#### **First Progress Report on the Performance of Experimental Concrete Finishes**

William B. Ledbetter, professor of civil engineering, A. H. Meyer, assistant professor of civil engineering, Texas A & M University, College Station, Texas; and J. L. Davis, engineer, E. I. DuPont Company, Corpus Christi, Texas

#### **Greene County Fibrous Concrete Overlay Research Project**

M. J. Knutson, manager, Iowa Concrete Paving Association, Des Moines, Iowa

#### **Evaluation of Parameters Significantly Influencing the Performance of Continuously Reinforced Concrete Pavements**

Asif Faiz, graduate instructor, and Eldon J. Yoder, professor of highway engineering, Joint Highway Research Project, Purdue University, West Lafayette, Indiana

#### **Airfield Pavement Construction—Slip-Form Paving Method**

Frazier Parker, Jr., research civil engineer, Soils and Pavement Laboratory, U. S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi

#### **Concrete Road Design**

William C. Balfour, engineer, Genesee County Road Commission, Flint, Michigan

friday, april 5

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

## **SYMPOSIUM ON DEFLECTIONS OF CONCRETE STRUCTURES**

*Rose Room*

### **sponsored by aci committee 435**

**Session Chairman:** Gajanan M. Sabnis, chairman, ACI Committee 435, and engineering supervisor, Bechtel Power Corporation, Gaithersburg, Maryland

#### **Code Criteria for Deflection: Limitation in Reinforced Concrete Structures**

Bernard L. Meyers, engineering supervisor, and Gajanan M. Sabnis, engineering supervisor, Bechtel Power Corporation, Gaithersburg, Maryland

#### **Computation of Deflections for Beams and One-Way Slabs**

Charles G. Salmon, professor of civil engineering, University of Wisconsin, Madison, Wisconsin; A. F. Shaikh, assistant professor of structural engineering, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin; and M. Saeed Mirza, associate professor, Department of Civil Engineering and Applied Mechanics, McGill University, Montreal, Quebec, Canada

#### **Deflection of Two-Way Reinforced Concrete Floor Systems—State of the Art**

ACI Committee 435, Subcommittee 5. Presentation by Arthur H. Nilson, chairman, Subcommittee 5, and professor, Department of Structural Engineering, Cornell University, Ithaca, New York

#### **The Deformation of Noncomposite and Composite Prestressed Concrete Members**

Dan E. Branson, professor, Department of Civil Engineering, State University of Iowa, Iowa City, Iowa

#### **A Computer Analysis of Deflection of Statically Indeterminate Concrete Structures**

Robert G. Drysdale, associate professor, Department of Civil Engineering and Engineering Mechanics, McMaster University, Hamilton, Ontario, Canada; and M. Saeed Mirza, associate professor, Department of Civil Engineering and Applied Mechanics, McGill University, Montreal, Quebec, Canada

#### **Calculation of Instantaneous Deflections of Reinforced Concrete Beams**

P. D. Zuraski, doctoral candidate, University of Wisconsin, Madison, Wisconsin; A. F. Shaikh, assistant professor of structural engineering, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin; and Charles G. Salmon, professor of civil engineering, University of Wisconsin, Madison, Wisconsin

#### **Time Dependent Deflections of Reinforced and Prestressed Concrete Beams**

W. H. Dilger and Amin Ghali, professors, V. Jagannadha Rao, reader in civil engineering, and M. K. Tadros, graduate assistant, Civil Engineering Department, University of Calgary, Calgary, Alberta, Canada; and G. Abele, design engineer, Philip Holzmann AG, Frankfurt, Germany

#### **Deflection Characteristics of Reinforced and Prestressed Beams of High Early Strength Normal and Lightweight Concrete**

R. N. Swamy, senior lecturer, and Krishan Lal Anand, research engineer, Department of Civil and Structural Engineering, University of Sheffield, Sheffield, England; and Adnan B. Ibrahim, instructor, Department of Civil Engineering, University of Mosul, Mosul, Iraq

#### **A Comparison of Measured and Calculated Deflections of Flexural Members in Four Reinforced Concrete Buildings**

J. L. Heiman, civil engineer, Commonwealth Experimental Building Station, North Hyde, New South Wales, Australia

#### **Simplified Deflection Computations**

Russell S. Fling, president, R. S. Fling and Partners, Inc., Columbus, Ohio

#### **Deflections of Model Perforated Reinforced Concrete Slabs**

Frederic Roll, professor, Towne School of Civil and Mechanical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania; and Gajanan M. Sabnis, engineering supervisor, Bechtel Power Corporation, Gaithersburg, Maryland

friday, april 5

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

## **RESEARCH IN PROGRESS ON PLAIN AND REINFORCED CONCRETE**

(Brief and confidential unpublished reports)

*Ralston Room*

### **sponsored by aci committee 115**

**Session Chairman:** Herbert K. Cook, chairman, ACI Committee 115, and vice-president of engineering, Master Builders, Cleveland, Ohio

**Secretary:** George W. Washa, secretary, ACI Committee 115, and professor of engineering mechanics, University of Wisconsin, Madison, Wisconsin

#### **Behavior of Confined Lightweight Aggregate Concrete**

Boris Bresler and V. Bertero, professors, Department of Civil Engineering, University of California, Berkeley, California

#### **The Design of Web Reinforcement for Prestressed Concrete Elevated Guideway Girders**

Michael P. Collins, professor, and Basile G. Rabbat, student, Department of Civil Engineering, University of Toronto, Toronto, Ontario, Canada



### **Time-Dependent Behavior of the World's Tallest Reinforced Concrete Building**

Henry G. Russell, senior structural engineer, Engineering Development, Portland Cement Association, Skokie, Illinois

### **Structural Response Investigation of Reinforced Concrete Frame Structures Subjected to High Magnitude Lateral Forces.**

S. A. Freeman, associate, and R. E. Scholl, director of research, URS/John A. Blume and Associates, Engineers, San Francisco, California and Las Vegas, Nevada

### **On the Properties and Behavior of Polymer Impregnated Fibrous Lightweight Concrete Subjected to Thermal Shock**

M. Gunasekaran, senior engineer, Ceramics and Glasses, Westinghouse Research Laboratories, Pittsburgh, Pennsylvania

## **A. J. BOASE AWARD OF THE REINFORCED CONCRETE RESEARCH COUNCIL**

Ernst Gruenwald has been selected by the Reinforced Concrete Research Council to receive the 1974 Arthur J. Boase Award "... for his distinguished engineering career, for his significant contributions as a researcher and as a proponent of the application of high early strength cement, and for his outstanding contributions toward progress of construction technology."

### **Application of Acoustic Emission Techniques to Non-Destructive Evaluation of Concrete**

V. M. Malhotra, materials engineer, Construction Materials Section, Mineral Processing Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario, Canada

### **Inflation Formed Fibrous Concrete Dome Structures**

D. J. Naus, materials research engineer, and Ronald Merritt, civil engineer, Department of the Army, Construction Engineering Research Laboratory, Champaign, Illinois; and Gordon B. Batson, professor, Clarkson College of Technology, Potsdam, New York

### **Effects of Cyclic Loading and Eccentricity on Laterally Reinforced Concrete**

S. P. Shah and F. A. Webster, professors, Department of Materials Engineering, University of Illinois at Chicago Circle, Chicago, Illinois

### **Closed Loop Fiber Reinforcement for Concrete**

Michael A. Taylor, assistant professor of civil engineering, University of California at Davis, Davis, California

### **Dry Cast Concrete 12,000 PSI Concrete**

Mrs. W. Ernest Willis II, business development, Dry Cast Concrete, Inc., San Francisco, California

friday, april 5

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

## **SYMPOSIUM ON INDUSTRIALIZED CONCRETE CONSTRUCTION**

sponsored by aci committee 356

*Concert Room*

**Session Chairman:** N. F. Somes, secretary, ACI Committee 356, and chief, Structures Section, Building Research Division, National Bureau of Standards, Washington, D. C.

### **Industrialized Concrete Construction for the U. S. Department of Housing and Urban Development**

G. Robert Fuller, structural engineer, Federal Housing Administration, U. S. Department of Housing and Urban Development, Washington, D. C.

### **Abnormal Loading and Building Safety**

E. Burnett, associate professor, Department of Civil Engineering, University of Waterloo, Waterloo, Ontario, Canada; N. Somes, chief, and E. V. Leyendecker, structural research engineer, Structures Section, Building Research Division, National Bureau of Standards, Washington, D. C.

### **Catenary Action in Damaged Concrete Structures**

Paul Regan, reader in civil engineering, Polytechnic of Central London, London, England. Presentation by H.P.J. Taylor, research engineer, Research and Development Division, Cement and Concrete Association, Wexham Springs, Slough, Bucks, England.

### **Effects of Vertical Keyed Shear Joints on the Design of Reinforced Concrete Shear Walls**

S. Øivend Olesen, director, BKF Centralen (Danish Structural Research and Development Center), Lyngby, Denmark

### **Internal and Foundation Forces in Multistory Pierced Bearing Walls Under Vertical Load**

I. Varga, associate in charge, Weidinger Associates, Cambridge, Massachusetts; and R. Ratay, assistant professor, City College of New York, New York, New York

### **An Analysis of Precast Shear Wall Structures Subjected to Seismic Forces**

Sepp Firnkas, president, Sepp Firnkas Engineering, Inc., Boston, Massachusetts

## EXHIBITION

Gold Ballroom

### hours:

Tuesday	-----	12:30 p.m. to 5:00 p.m.
Wednesday	-----	10:00 a.m. to 5:00 p.m.
Thursday	-----	10:00 a.m. to 5:00 p.m.

### Exhibitors:

- Adhesive Engineering Company**—Structural concrete bonding process.
- Almar Specialty Machines Inc.**—See **Eirich Machines Inc.**
- Challenge-Cook Bros., Inc.**—Concrete pumps and quick-set shotcrete system.
- Crown Zellerbach Corporation**—Additive to cement which allows for less water usage.
- Eirich Machines, Inc.**—Eirich mixers.
- Erico Products, Inc.**—Mechanical splices for reinforcing bars.
- Fox Industries**—No-slip reinforcing steel coupling for large diameter bars.
- R. A. Hanson Company, Inc.**—Continuous concrete plant and canal paving machines.
- ITT Phillips Drill Company**—Concrete anchors, drills, and accessories.
- Master Builders**—Polymer-type admixture for improving all types of concrete.
- National Ash Association, Inc.**—Concrete and concrete products using ash as an admixture and aggregate.
- Plarad Power Tools, Division of J. R. & S. Company**—Torque multipliers (mechanical power equipment).
- Protex Industries Inc.**—Concrete admixtures, epoxy bonding agents, and other concrete specialty products.
- Reed Manufacturing Company Inc.**—Guncrete machine.
- Sika Chemical Corporation**—Concrete adhesives and coatings.
- Wang Laboratories, Inc.**—Advanced programmable desktop calculators and computer systems.

## FUTURE ACI CONVENTIONS

- 1974—October 26 - November 1**  
Sheraton-Biltmore Hotel  
Atlanta, Georgia
- 1975—April 6 - 11**  
Sheraton Boston Hotel  
Boston, Massachusetts
- 1975—November 1 - 7**  
The Bayshore Inn  
Vancouver, British Columbia, Canada
- 1976—March 28 - April 2**  
Benjamin Franklin Hotel  
Philadelphia, Pennsylvania

THURSDAY, APRIL 4, 12:15 p.m.

## awards luncheon

Ralston Room

Come meet the awardees and new ACI officers at noon. Have fun, enjoy a good lunch, and watch the multi-media awards presentation show.

### program

#### Honorary Memberships:

Graydon E. Burnett  
Samuel Hobbs  
Masatane Kokubu  
Telemaco vanLangendonck

#### Henry C. Turner Medal:

Ben C. Gerwick

#### Alfred E. Lindau Plaque:

Max Zar

#### Henry L. Kennedy Award:

Emil Schmid

#### Charles S. Whitney Medal:

Concrete Laboratory  
Waterways Experiment Station  
U. S. Army Corps of Engineers

#### Arthur R. Anderson Medal:

George J. Verbeck

#### Roger H. Corbetta Award:

Charles J. Pankow

#### Construction Practice Award:

Charles Novacek

#### Wason Medal for Most Meritorious Paper:

Y. C. Yang

#### Wason Medal for Materials Research:

Tony C. Y. Liu  
Arthur H. Nilson  
Floyd O. Slate

#### Raymond C. Reese Structural Research Award:

K. S. Rajagopalan  
Phil M. Ferguson

#### Recognition of Retiring Officers

#### Report of Tellers

#### Introduction of New Officers

#### New President's Address

#### Presentation of Memento to Retiring President

## **ladies program**

*Ladies' Hospitality Room: Regency Room*

### **MONDAY**

9:00 a.m. - 5:00 p.m.  
Registration

### **TUESDAY**

9:00 a.m. - 10:30 a.m.  
Registration

10:30 a.m. - 5:30 p.m.  
Napa Valley—Wine Country Tour  
Includes tour of Robert Mondavi Winery with catered lunch; tour of Beringer Bros. Winery; shopping at Vintage 1870, an art center in Yountville.  
Both men and women are invited to enjoy this tour.

### **WEDNESDAY**

9:00 a.m. - 10:00 a.m.  
Registration

10:00 a.m.  
First bus leaves for cable car bus tour to Ghiradelli Square and Fisherman's Wharf. Includes lunch and one Margarita at Senor Pico's in Ghiradelli Square.

4:00 p.m.  
Last bus leaves Fisherman's Wharf.

### **THURSDAY**

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

12:15 p.m.  
Awards Luncheon  
Both men and women are invited to this luncheon.

### **FRIDAY**

10:00 a.m. - 2:00 p.m.  
San Francisco Bay Cruise  
Cruise San Francisco Bay in chartered vessel and view Alcatraz Island, Golden Gate Bridge, Angel Island, Treasure Island, and San Francisco-Oakland Bay Bridge. Lunch included.  
Both men and women are invited to enjoy this cruise.

*Morning coffee and light refreshments will be provided in the Ladies Hospitality room starting Monday morning.*

## **SAN FRANCISCO CONVENTION COMMITTEE**

### **Executive Committee**

**General Chairman**  
**Everette Osgood**  
Granite Rock Company

**Co-Chairmen**  
**S. D. Burks**

W. R. Grace and Company  
**Milos Polivka**  
University of California at Berkeley

**Secretary-Treasurer**  
**Wilbur E. Moulton**  
Lone Star Industries

**Finance Committee Chairman**  
**Jack Cedarblade**

Aggregates and Concrete Association

**Tours/Transportation Committee Chairman**  
**Kelly Moffitt**

Basalt Rock Company, Inc.

**Social Events Committee Chairman**  
**Dave Frankel**

Granite Rock Company

**Publicity Committee Chairman**  
**Gray Minor**

Public Relations-Promotions-Advertising

**Membership Committee**  
**Chairman**

**Shelly Bailey**  
California Division of Highways

**Assistant Chairman**  
**Horace G. Hill**

Concrete Chemicals of California, Inc.

**Education Committee Chairman**  
**Milos Polivka**

University of California at Berkeley

**Housing Committee**  
**Chairman**

**Merlyn Isaak**  
Testing Engineers, Inc.

**Assistant Chairman**  
**Claude Trusty**

Calaveras Cement, Division of Flintkote Company

### **Ladies Activities Committee**

**Chairman**  
**Bob Nieman**

Hales Testing Laboratory

**Co-Chairwomen**  
**Mrs. S. D. Burks**  
**Mrs. Robert Nieman**

The officers, staff, and members of ACI would like to thank the Local Committee, the Hostesses, and the Chapter for their part in the 1974 Annual Convention.

**HOTEL  
SHERATON-PALACE  
CONVENTION FACILITIES**



