

AUDIT REPORT

The following letter dated October 21, 1977 was directed to the Chapter President by Hank Huddleston, Chairman of the Audit Committee.

"John Carriger, Vic Bach and I met with Jim Holden at his office on 5 October 1977 and reviewed the bookkeeping practices and accounts for the year 1976 to 1977.

We did not audit every transaction for that time period. However, we believe that the books are in proper order and all funds are correctly accounted for.

We wish to recommend to the board of directors that some consideration be given to asking an ASHRAE member who is well qualified in bookkeeping practices to write an abbreviated "OPERATING MANUAL" to assist the income treasurer each year in understanding the system.

We also suggest that consideration be given to establishing a clearer separation in the books, between operating FUNDS and the various project funds.

We found no indication that any funds had been incorrectly allocated and this suggestion is made solely in the interest of protecting our non profit status with the State of California."

TEMPERATURE DATA BOOKS

Title 24 Energy Regulations (soon to be low) reference our Chapter's "Recommended Design Temperatures" Booklet published in 1965. An updated version may be available in 1978, but in the meantime, your Board decided to reprint the 1965 edition.

To obtain a copy, send a check for \$3.00 payable to "ASHRAE Golden Gate Chapter" to:

ASHRAE % Duplicating Assoc.
370 Brannan Street
San Francisco, CA 94107

FUNDAMENTALS HANDBOOK

Further printing delays have been experienced. Distribution is now expected to begin Dec. 5, 1977, in time to add to the holiday mail problem. Expect arrival of your copy possibly in January.

ATLANTA MEETING

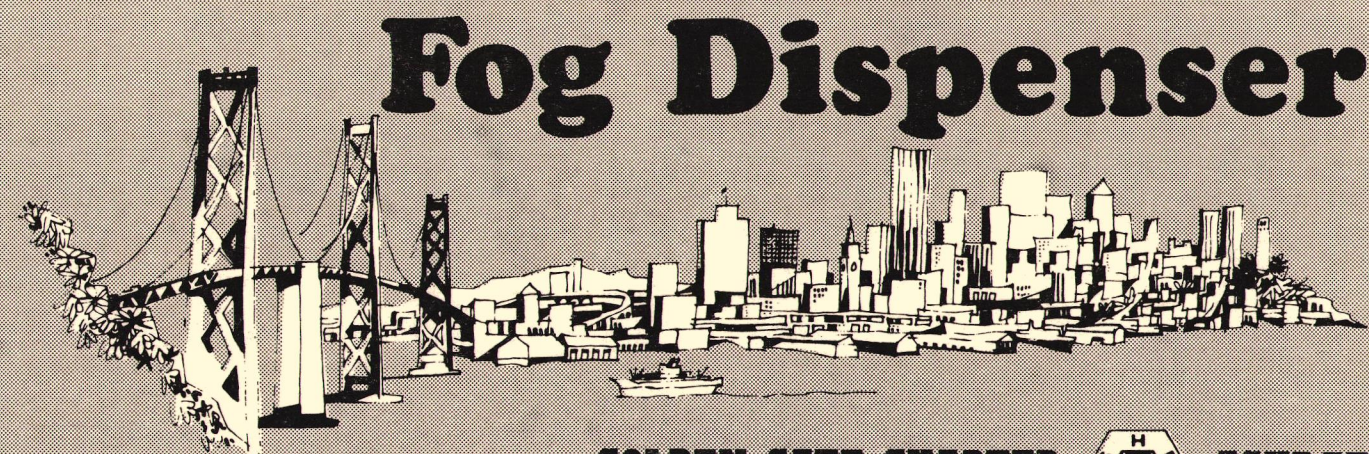
The 1978 ASHRAE Semi-Annual Meeting and Exposition is scheduled for Atlanta January 29 through February 2.

Use the form on page 60 of your October Journal to make hotel reservations NOW.

NEWS FROM HEADQUARTERS**CAN ASHRAE CHAPTERS ATTEMPT TO INFLUENCE LEGISLATION?**

A scientific and educational organization exempt from Federal income taxation may not devote a substantial part of its activities to carrying on propaganda or otherwise attempting to influence legislation, either directly or by urging such action on the part of its members. Attempts to influence legislation include contacting or urging the public to contact members or employees of responsible governmental bodies off the purpose of proposing, supporting or opposing legislation, as well as influencing general public opinion. What constitutes a substantial part of the activities of an organization is by no means clear. In some instances less than five percent of the time and effort of an organization has been considered insubstantial. Such a benchmark can in no event, however, be considered a safe haven

PLEASE PAY DUES NOW



GOLDEN GATE CHAPTER  **ASHRAE**

VOLUME XVII NO. 3

DECEMBER, 1977

MEETING NOTICE

The third meeting of the Golden Gate Chapter for the 1977-78 year will be held at the Engineer's Club on the 16th floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco on Thursday, December 1, 1977. The Social Hour will begin at 5:30 PM, with dinner at 6:30 PM.

PRE-MEETING WORKSHOP

Where: 6:00-6:30 PM Upstairs

Chairman: Tom Judson

Topic: Engineering cost-benefit analysis of boiler room related energy conservation projects.

Speaker: Mr. C.A. (Al) Hood

Mr. Hood is the Vice President of Peabody Gordon-Piatt, Inc. of Winfield, Kansas.

DECEMBER PROGRAM

Chairman: Dick Glumac

Subject: Thermal Storage in HVAC Design

Speaker: Tom Simonson

Mr. Simonson will speak on the most recent application of an old engineering principle of thermal storage to reduce peak demands and to store the energy during the less expensive energy rates for use during the period of more expensive energy rates.

NOTICE * NOTICE * NOTICE

There will be a raffle of the returned reservation cards! The one picked will receive a free dinner for the January meeting. Send in your reservation cards early.

HONOR ROLL

SMACNA

Greater Oakland Area

SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION

8301 Edgewater Drive

Oakland, California 94621

(415)635-8212

PRESIDENT'S COLUMN

I'm sorry if you missed our November General Meeting when we hosted 45 Cal Poly Students and 6 City College Students, plus our Region X Chairman, Dick Perry, and his wife Audrie, and John Harnack from Los Angeles, Regional Membership Committeeman! It was a real crowd. Gary Fernstrom from PG & E, our main speaker, did a great job of presenting us a picture of Electrical Load Management. Dick Glumac has more excellent programs arranged; plan on attending each time.

Glenn Cheek of York, a new Chapter member we coerced into accepting Attendance and Reception duties (and he's doing them beautifully) has plans to revise the badge board. Dig out the forgotten badge in your top dresser drawer, bring it to the next meeting, and please leave it for Glenn.

Congratulations Tom Reinarts! Tom, a Chapter member, was elected Treasurer of the San Francisco Bay Area Engineering Council, an association of all engineering societies in this locale.

Our Seminar Chariman, hard-working Sherman Brown, has left the Bay Area to accept a position in Sacramento. We'll miss you, Sherm. He'll help us by long distance as Co-Chairman with our newly-appointed Seminar Co-Chairman, Jim Taylor, who has the experience of two years' involvement in the job.

.....Gene Valerio

ENERGY REGULATIONS

COMPLIANCE PACKAGE

An interim document titled "Compliance Package-Energy Conservation Standards for New Non-Residential Buildings" is now available upon request. You may obtain a copy by sending a check in the amount of \$7.00 plus postage (\$1.00 UPS/\$2.00 First Class) and 6% Sales Tax, made out to "Energy Commission" Address requests to:
ERCDC
Publications Unit, Compliance Pkg.
1111 Howe Avenue
Sacramento, CA 95825

We suggest purchase only if you must have one now. This manual in its later form will be furnished to you at our Tech. Seminar starting January 24.

NATIONAL DUES

Headquarters sent us a list of 96 people who had not paid their National Dues as of September 30. Some of the names on the list surprise us!

You can easily check if you are on the list by calling our Membership Chairman Jim Nemechek at (415) 871-6808 before he calls you.

DATES TO REMEMBER

January 5	Chapter Meeting
January 24	Technical Seminar
January 29	Atlanta Meeting

Know a Prospective New Member?

Contact Membership Chairman:
Jim Nemechek(415) 871-6808
or Committee Members:
Sherman Brown(415) 568-2850
Dick Frenzel(415) 873-1660

Mail or Phone News to:
Bill Schultz, Editor
FOG DISPENSER
Powers Regulator Company
1305 Grandview Drive
South San Francisco, CA 94080
(415) 871-1944

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible date, that copy for the FOG DISPENSER can be in the editor's hands:

Meeting date	Copy deadline
Jan. 5, 1978	Dec. 16, 1977
Feb. 2, 1978	Jan. 13, 1978
Mar. 2, 1978	Feb. 10, 1978
Apr. 6, 1978	Mar. 17, 1978
May 12, 1978	Apr. 14, 1978
Jun. 1, 1978	May 12, 1978

Published Monthly, October through June, by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94107—Phone 495-4552

1977-1978 OFFICERS
Eugene L. Valerio..... President
Dick M. Glumac.... Vice-President
Thomas A. Gilbertson... Secretary
James M. Holden..... Treasurer

BOARD OF GOVERNORS
Robert Phillips Tom Campbell
Carl Jordan

...minutes continued...

- slow in this area.
- Q. What is PG & E solar commitment?
A. \$1,000,000 budget for the emphasis towards agriculture drying.
- Q. Is power factor considered in the present A17 (soon to be A23, time-of-day rates)?
A. Yes, but not as strict as for example Southern Cal Edison.

Next meeting will be on December 1, 1977, in the Engineers Club, 6:00 pm.

Meeting was adjourned at 9:14.

BOARD REPORT

At the October 17th and November 3rd Board meetings, Tom White, Chairman of CRC-78 (Chapters' Regional Conference for 1978) outlined plans for hosting the 17 Chapters of Region X for delegates meetings, technical sessions and workshops on May 10-12th, 1978.

Tom voiced the hope that in addition to the delegates and alternates from each chapter, that local Golden Gate Chapter ASHRAE members will join in the activities. The two technical sessions will be chaired by Tom Simonson with assistance from speakers having expertise in the subjects covered.

Advance reduced rate ticket sales under Dick Friedman's guidance will commence in the next two months, and he needs volunteers for his sales force. All salesmen (if we have any in the Chapter) should apply now. Contact Dick at 234-9322.

TREASURER'S REPORT

	9-30-77	10-31-77
Income	\$1665.00	\$ 789.00
Expenses	\$ 306.81	\$ 646.79
Members Equity	\$4921.96	\$5064.24

MEETING GUESTS

Rod Davidson	Cal Poly
Christopher Rubt	Cal Poly
Russell Ramos	Cal Poly
David Ciolino	Cal Poly
Roger Goetsel	Cal Poly
Todd Logan	Cal Poly
Kam Y. Choy	City College
Joseph Lo	City College
V. Taullue	Calif. Furnace
Norm Macrichie	Kasin, Guttman
Paul Tam	Cal Poly
Douglas Chan	Cal Poly
Thomas Yu	Cal Poly
Stuart Tartaglia	Cal Poly
Lance	Cal Poly
David Morton	Cal Poly
Dale McDonald	Cal Poly
Bill Noel	Charles & Braun
Steve Snodgrass	Cal Poly
Peter Valerio	Pipe Shields, Inc.
Joe Parisl	Kasin Guttman
Steve Williams	Cal Poly
Todd Sorbo	Cal Poly
Mike Brown	Cal Poly
Bruce Baker	Cal Poly
Donald Eddy	Cal Poly
Vern Buxton	Lennox Ind.
Calvin Chui	City College
Walter Holtz	Cal Poly
Ken Chun	City College
John Karmiris	Cal Poly
Gary Jew	City College
Cory Lee	City College
George Kontolatos	Cal Poly
David Plantier	Ocean Shore
Steve Murphy	Cal Poly
Mike Franzen	Cal Poly
Greg Davis	Cal Poly
Dale White	Cal Poly
Eric Darnton	Cal Poly
Art Williams	Cal Poly
Gary Fernstrom	PG & E
Audrie Perry	
Adele White	
John Harnack	J. Harnack Assoc.
Mary Walker	
Richard Mayer	PG & E
Frank Armstrong	PG & E
John Wunderlich	PG & E

PAY DUES NOW

RESEARCH HONOR ROLL

The Chapter acknowledges with thanks the following contributors to ASHRAE Research during our 1976-1977 fiscal year.

- Bayha Weir & Finato
- Brose Company
- Bernard Beckius
- Glumac & Webster
- James L. Breese
- SMACNA-East Bay
- Sherman H. Brown
- Pacific Pumping Co.
- Pipe Shields Inc.
- A.Sahhlok
- The Trane Co. S.F.
- Fred F. Farmer
- Richard E. Gee
- Oliver W. Johnson
- Carl H. Jordon
- George R. Keller
- Dale J. Missimer
- Charles D Quan
- Arthur F. Tudury
- Eugene Valerio
- Thomas J. White
- W.C. Whittlesey
- WM. Wurzbach
- Charles & Braun

Gene McCabe can tell you how to get on this Honor Roll next year.

LIFE MEMBERS

Don McLeod, Sandy Sanford, and Ralph Knowles have joined the list of distinguished members of our Chapter to have attained Life Members status. It's a pleasure to recognize their continuing contributions to ASHRAE over the years.

"PLANS & SPECS"

The following has been forwarded to us by a local contractor who claims that it was part of a recent specification. He failed to mention what office wrote the spec.

"The plans and specifications are without error and agree in every detail. Any apparent contradiction between them claimed by the Contractor shall be taken as evidence of bad faith on the part of the Contractor. In case of continued disagreement as to the designer's intent due to an alleged difference between the plans and specifications, the project shall be built both ways, with the additional cost to be borne by the Contractor."

RESEARCH FUND DRIVE

Affluent and not-so-affluent Chapter Members alike need to be reminded that donations to the Research Fund during December are tax-deductible in Calender 1977. Gene McCabe is conducting a mini-drive this month. Send your check payable to "ASHRAE Research" to:

Gene McCabe
%Western Plumbing
600 Treat Avenue
San Francisco, CA 94110

Gene will provide you with an official receipt.



PLEASE MAKE CHECKS PAYABLE TO: ASHRAE Research

MINUTES FROM LAST MEETING

November 3, 1977

Called to order at 7:35 at the Engineers Club.

1. Motion made and seconded that the minutes of the October meeting be approved as printed in the Fog Dispenser. Motion carried.
2. Ninety-six National members have not paid local dues.
3. Technical Seminar 1978 starts January 24, 1978. Subject is Title 24.
4. UL Task Force activity was reported by Dart Rinefort.
5. Richard Perry, Regional Chairman discussed Halifax meeting.
 - A. Award of Excellence will have the same criteria as last year.
 - B. Regional reorganization is imminent. Seventeen chapters are simply too many for one man to handle.
 - C. Standard 100 is expected to be approved at the Atlanta meeting.
 - D. Metric Committee has a new, more efficient publication indicating proper units.
 - E. Publishing costs will be attempted to be reduced.
 - F. Spokane University of Washington now has student chapters.
 - G. There is a new emphasis on ASHRAE history.
 - H. 1978 CRC meeting will be in San Francisco.
6. Vice President Glumac introduced Gary Fernstrom of PG & E who presented a program "Time of Day Electric Rates." Mr. Fernstrom has serviced as a member of the Signal Corps, is a graduate of Cal Poly, has ten years experience with PG&E, is a member of ASME and is working in the Energy Conservation Dept. of PG & E. The technical session addressed the following areas.
 - A. "Load Management" and its impact on utilities.
 - B. Explained the summer "on-

...minutes continued...

peak"--4:30 pm to 8:30 pm. Winter peak is from October 1st to April 30th.

- C. Pointed out that reduced rainfall has increased the requirement for oil generated electricity in the PG & E system.
 - D. The time-of-day rates apply to a complex that uses in excess of 4000 KW of demand. Reduction in peak demand in this class of customer averages 3%. A new time-of-day rate for 1000 KW to 4000KW demand customers is not yet in effect but is in front of the PUC.
 - E. PG & E is presently working on a time-of-day rate for customers in the 5000 to 1000 KW demand.
 - F. PG & E has a number of test programs under way. One is a "direct control" which gave residential users a \$3.00 per ton of installed refrigeration discount for allowing PG & E to turn off their units by remote signal.
 - G. PG & E is considering using mini-computers in the home to directly indicate the cost of electricity and the rate at which it is being used.
 - H. Rolling blackouts are also being considered and planned for.
 - I. Mr. Fernstrom recommended that we take steps to help our customers and the utility in meeting the power demands.
- Questions and answer session followed:
- Q. What are the costs per KW for the on-peak rates.
 - A. \$3.45 per KW demand on peak, 25¢ per KW of demand for the partial peak (four hours on each side of the demand peak), 0¢ per KW of demand off any of the peak areas, and no ratchet clause.
 - Q. Is there any thought being given to PG & E supplying energy direct?
 - A. Yes, but they are going very

NEW MEMBERS

The Golden Gate Chapter Welcomes the following new members:

- Mak Takahashi S.O.M.
- Gary Tooker H.K. Ferguson
- John Palm Kewanee
- Jim Augustyn Berkley Solar Group
- Ahti Tuohino Equitable Life
- Mark Lonley-Cook Naval Facilities
- Jim Dunham
- Bruce Benson
- Norm Tolle

STUDENT BRANCHES

ASHRAE Headquarters recently began to actively encourage the formation of Student Branches, and set out guidelines. However, the oldest Student Branch is in our Region at Cal Poly, San Luis Obispo, and it has been in existence since 1960. Often referred to as the "Air Conditioning Club" it was guided for many years by Jim McGrath. The Golden Gate Chapter has supported Cal Poly students for many years with a Workshop Program.

NEWS FROM HEADQUARTERS

USE OF WASTED HEAT ENERGY TO BE TESTED BY ERDA

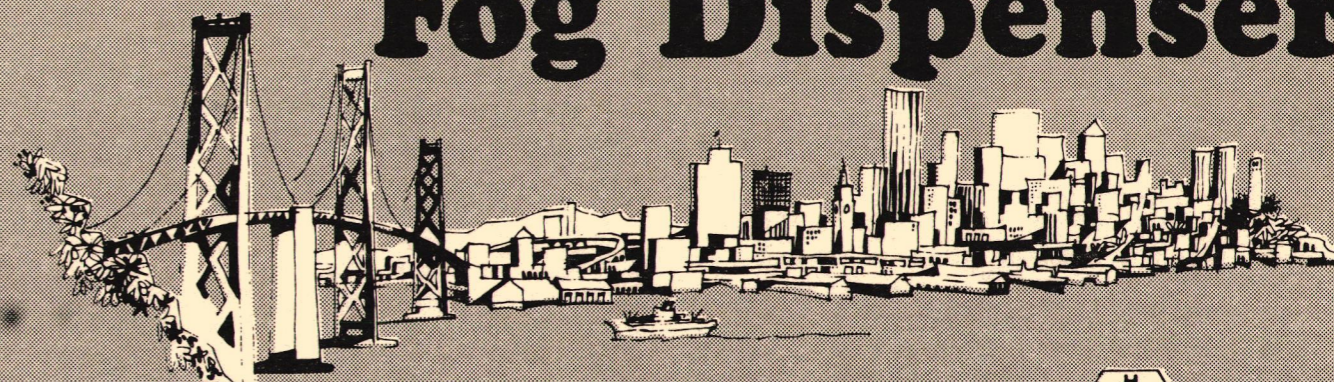
A series of studies, designed to find ways for storing and using wasted heat energy from five industries, could result in major energy savings if adopted nationally. All of the industries under study are energy-intensive. They include steelmaking; aluminum smelting; food processing; cement manufacturing and pulp and paper-making. The studies, to be funded by the U.S. Energy Research and Development Administration (ERDA), will be carried out under several contracts now being negotiated. Each study will take about six months to complete. In addition to feasibility studies, plans for full-scale demonstration will also

...headquarters continued... be developed, with the future possibility that ERDA might share costs for a demonstration with industry.

STANDARDS

The Board of Directors unanimously approved participation in a panel to be formed jointly by ASHRAE, the Edison Electric Institute, and the American Gas Association. The panel will endeavor to resolve differences on energy sources evaluation among the three parties as they relate to energy conservation. Need for the panel grew out of criticisms of the addition of Section 12 to Standard 90-75, "Energy Conservation in New Building Design." Section 12 provides an optional methodology for determining losses in the production and transmission of energy from its original source to the property line at the building where it is to be used. The charge of the panel is to obtain acceptance of a mutually satisfactory energy source evaluation document, by revising Section 12 if that is deemed desirable. Standard 90 is now undergoing various revisions relating to glazing in residences, deletion of provisions on mobile homes, and new references to certain supporting documents. On completion it will be submitted to the American National Standards Institute with the recommendation it become an ANSI standard. Standard 93-77, "Methods of Testing to Determine the Thermal Performance of Solar Collectors," has been approved by the American National Standards Institute and has been given the code number ANSI B198.1-1977. Several standards in other areas are being planned, including two on unitary heat pumps, and work is continuing on the 100 series, "Energy Conservation in Existing Buildings."

Fog Dispenser



GOLDEN GATE CHAPTER  **ASHRAE**

VOLUME XVII NO. 2

NOVEMBER, 1977

MEETING NOTICE

The second meeting of the Golden Gate Chapter for the 1977-78 year will be held at the Engineer's Club on the 16th floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco on Thursday, November 3, 1977. The Social Hour will begin at 5:30 PM, with dinner at 6:30 PM.

NOVEMBER PROGRAM

Chairman: Dick Glumac
 Subject: Time of Day Electrical Notes Influence on HVAC and other Building Systems, and Load Management.
 Speaker: Gary Fernstrom
 Mr. Fernstrom is an Energy Service Engineer with Pacific Gas and Electric Company of San Francisco.

PRE-MEETING WORKSHOP

Where: 6:00-6:30 PM Upstairs
 Chairman: Tom Judson
 Topic: Energy Conservation in Parking Garage Ventilation Systems.

Mr. Lieb is the Western Regional Manager of Energetics Science, Inc. He will speak on energy conservation and cost savings in Parking Garage Ventilation Systems, using Carbon Monoxide Monitoring Equipment.

NOTICE * NOTICE * NOTICE
 There will be a raffle of the returned reservation cards! The one picked will receive a free dinner for the December meeting. Send in your reservation cards early.

HONOR ROLL

FLAME AIR

Heating Ventilating and Air Conditioning Equipment Supplier
 JANITROL JACKSON & CHURCH DRYOMATIC EDISON
 Herb Duncan Peter Filios
 325 Corey Way, South San Francisco, CA 94080
 (415) 761-2211

PRESIDENT'S COLUMN

Emotion at the October meeting ran high after I allowed only guest to be introduced in the interest of quickening the meeting pace. Some members did not recall the meeting format survey which clearly favored this procedure. In any event, a motion was passed to change this, and we will again have self-introductions of all present. Introductions will be limited to name and affiliation only, however.

We've heard a number of good comments about the new look of the Fog Dispenser, and we thank you! Bill Schultz and I would welcome any constructive suggestions you may wish to make. It is our intent that the Fog Dispenser be the medium for dissemination of committee reports, announcements, and the like, so that our General Meetings need cover only those items requiring voting or brief last minute announcements.

Our November meeting is traditionally Students and New Members Night. Cal-Poly and City College students will be with us; bring a potential new member as your guest. Our Region X Chairman, Dick Perry from Vancouver, will also be an honored guest, and we promise you quite an evening!Gene Valerio

FELLOW AWARDS

The Board of Directors of the Society has voted to honor Tom Simonson and Bob Voelz of our Chapter with the award of Fellow, which is presented for distinguished achievement in the arts of the Society. We congratulate you, Tom and Bob, and may you continue to achieve distinction for many more years!

TECHNICAL SEMINAR

With Title 24 Energy Regulations some two months away from implementation, our Energy Conservation and Seminar Committees have put together a timely Technical Development Seminar covering the code and how to comply with it. The Seminar, in four Tuesday evening sessions, will start January 24, a good two months earlier than usual. Watch for further announcements, or contact Seminar Chairman, Sherman Brown, 568-2850 for more information.

TREASURER'S REPORT

	8-31-77	9-30-77
Income	\$1152.00	\$1665.00
Expenses	\$ 360.81	\$ 306.81
Members Equity	\$3563.74	\$4921.96

PLEASE PAY DUES NOW

Know a Prospective New Member?

Contact Membership Chairman:
Jim Nemechek(415) 871-6808

or Committee Members:
Sherman Brown(415) 568-2850
Dick Frenzel(415) 873-1660

Mail or Phone News to:
Bill Schultz, Editor
FOG DISPENSER
Powers Regulator Company
1305 Grandview Drive
South San Francisco, CA 94080
(415) 871-1944

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Meeting date	Copy deadline
Nov. 3, 1977	Oct. 14, 1977
Dec. 1, 1977	Nov. 11, 1977
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Thomas A. Gilbertson... Secretary
James M. Holden Treasurer
BOARD OF GOVERNORS
Robert Phillips Tom Campbell
Carl Jordan

...minutes continued...

to the beginning of the regulations being in effect.

i. A question and answer session followed the program

Q: Title 24 has five weather zones for this State. How come so few?

A: Originally 15 zones by the meteorologist, reduced to five at the request of the Energy Commission.

Q: Re:Exemptions--How soon can we expect a definition of conditions?

A: A foundation permit before 1-1-77 exempts the project. We expect to have guidelines for exemptions by early November.

Q: Will a registered professional engineer's statement that the building conforms exempt the building from a close check of the exact details?

A: Probably.

Q: Is oversizing of equipment allowed under Title 24?

A: No.

Q: Do you have to use the State program to prove the energy use under Title 24.

A: No--However, the State is looking into certifying other programs.

Q: Are computer forms available now?

A: Yes, they are part of the manual.

Q: Is the manual method of proving energy use acceptable?

A: No.

Q: What is the engineer's liability for not meeting the energy requirements under Title 24?

A: None.

The meeting was adjourned at 9:14 pm.

MEETING GUESTS

Stanley Eng	Owens Corning
Pat Geis	Engineered Air
Bob Hussey	Marina Heating
Norman MacRichie	Kasin, Guttman
Cliff Ceridine	Ceridine Heating
Steve Kwan	Glumac & Webster
Warren Taulbee	Calif. Furnace Co
Gerry Perez	Cuttler Lab.
Peter Valerio	Pipe Shields, Inc
Larry Kelly	Norman S. Wright
Iona Young	Cuttler Lab.
Nilesh Chokshi	SOM
Rick Danfel	SMACNA
Ron Swaving	Gamble Instrument
Bill McIntosh	PG & E
Rich Mayer	PG & E
F.H. Armstrong	PG & E
Bill Broderick	Honeywell
Glenn Cheek	York
Milan Komadina	A.R. Peterson
Bill Noel	Charles & Braun
Wanda Berry	A.O. Reed
Bob Sharp	Atlas Sheet Metal

FUNDAMENTALS HANDBOOK

The Fundamentals volume of the ASHRAE HANDBOOK & Product Directory was to be mailed to all members except students the week of October 24, 1977.

PAY DUES NOW

METRIC GUIDE

Our chapter put forward a recommendation at CRC 77 that the ASHRAE Metric Guide be revised to clarify units used in construction plans and specifications. The motion carried up through channels to the Board of Directors of the Society. We have learned that a subcommittee of the Society's Metric Committee has been working on a simplified guide for over nine months, and expect it to be available around the beginning of the new year.

PLEASE PAY YOUR DUES!

Chapter Dues Notices were mailed during July. If you've lost the invoice, use the copy below.

Payment deadline is November 1 --absolutely firm. To insure that your name is listed in the 1978 Roster, and to receive your copy of the Fog Dispenser in the months ahead, please send your check today.

National Members who are not yet Chapter Members are cordially invited to join us. Use the form below, and send it with your check to our Membership Chairman, Jim Nemechek, at Air Filter/Control, Box 2787, South San Francisco, CA 94080

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.

c/o **DUPLICATING ASSOCIATES** 370 BRANNAN STREET • SAN FRANCISCO, CA 94107



Checks may be made payable to GOLDEN GATE CHAPTER, ASHRAE

	INVOICE FOR YEAR	<u>1977 - 1978</u>
	DUES	\$ <u>12.00</u>

ROSTER INFORMATION

Member's Name _____

Home Address _____ Zip _____

Wife's Name _____

Home Phone (A/C) _____

Your Firm Name _____

Your Firm Address _____

Your Firm Phone (A/C) _____

Position Held _____

**CHECK
PREFERRED
MAILING
ADDRESS**

PLEASE PRINT OR TYPE, AND RETURN ONE COPY FOR ROSTER ALONG WITH DUES PAYMENT

NOVEMBER 1st IS DEADLINE

MINUTES FROM LAST MEETING

October 6, 1977

Meeting was called to order at 7:35 pm at the Engineers' Club by President Gene Valerio.

1. A motion was made and seconded and approved that the minutes of the June meeting as published in the Fog Dispenser should be approved.
 2. There was no old business.
 3. This year, committee reports will be published in the Fog Dispenser.
 4. President Valerio announced that two members of our Chapter, Mr. Bob Voelz and Mr. Tom Simonsen, have been elevated to the grade of "Fellow" by the National organization. Congratulations to these two men.
 5. Members are reminded that payments of local Chapter dues by the first of November, 1977, are required to insure being listed in the Chapter roster.
 6. It is reported that the technical development seminar will be four meetings beginning on the 24th of January, 1978, with the subject to be "State of California Title 24"
 7. Allen Wicks announced vibration and sound seminar to be held in San Diego.
 8. Next meeting in November is students and new members evening.
 9. A motion was made, seconded and approved that self-introductions consisting of your name and affiliation will be continued as in past years.
 10. Dick Glumac, program chairman and vice president, introduced Donald Watson, the office manager for the Energy Resources Conservation and Development Commission for the State of California, at our evening speaker.
- ...minutes continued...
- a. Donald Watson thanked Messrs. Voelz and Simonsen for their role in the development of the State of California energy standards and, of course, congratulated them on becoming Fellows in ASHRAE.
 - b. State Energy Commissioners are five in number with a fulltime staff of 400 and a \$20 million budget from a utilities surcharge in the State.
 - c. The four divisions are:
 - i. Alternate energy sources
 - ii. Facilities siting
 - iii. Energy assessment
 - iv. Conservation (Mr. Watson is in charge of this division.)
 - d. States without energy standards by 1980 will not be eligible for Federal funds for building at that time.
 - e. The State of California standards were approved in June of 1977 and will go into effect on January 1, 1978.
 - f. The State of California's computer program is in public domain. In addition, the Title 24 establishes energy budgets for "typical buildings" expressed in BTU's per square foot for a year. Enforcement of the Title 24 act is to be by the local building officials. (590+ separate building departments in the State of California.)
 - g. A manual for use in applying Title 24 is expected to be available in two weeks. However, the user and program manuals for the computer program are not yet available.
 - h. The Energy Commission will be able to exempt buildings which have a "substantial monetary commitment" prior

ASHRAE GOLDEN GATE CHAPTER 1977-1978

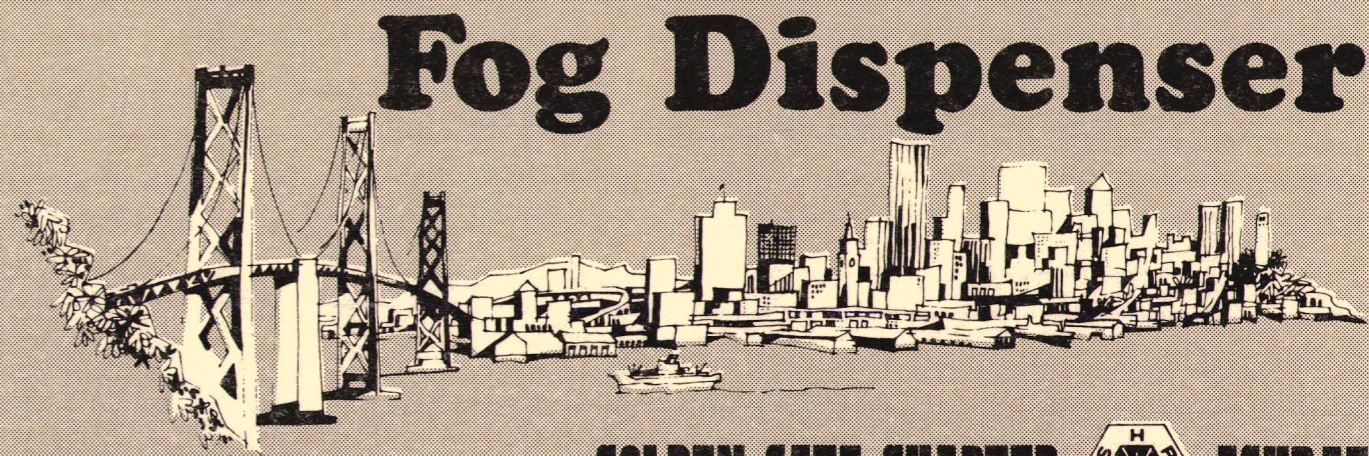
Officers, Board Members, and Committee Chairmen

President Eugene L. Valerio Board Member . . . Robert Phillips
 Vice President . . . Dick M. Glumac Board Member . . . Thomas Campbell
 Secretary Thomas A. Gilbertson Past President . . Carl H. Jordan
 Treasurer James M. Holden

<u>COMMITTEE</u>	<u>CHAIRMAN</u>	<u>BOARD LIAISON</u>
Membership	Jim Nemechek	Gilbertson
Program	Dick Glumac	Glumac
Reception/Attendance	Glenn Cheek	Jordan
Publicity	Dave Attard	Jordan
Finance	Jim Holden	Holden
Education	Roy Anderson	Campbell
Roster	Dave Waterworth	Phillips
Publications	Bill Schultz	Holden
Nominating	(Elected)	Jordan
Auditing	(Appointed)	Phillips
Pre-meeting Workshop	Tom Judson	Glumac
Tennis Tournament	Gerry Yaffe	Phillips
Scholarships	Rich Wells	Gilbertson
CRC 78	Tom White	Valerio
Seminar	Sherm Brown	Holden
Energy Conservation	Kevin Dowling	Campbell
Solar Energy	Dave Rifkin	Campbell
Code	Hank Mouw	Campbell
Temperature Data Book	Dick Charles	Phillips
Raffle	Dick Porter	Holden
Research Promotion	Gene McCabe	Holden
ESCMT	Don Bryant	Holden
Engineers Joint Council	Tom Reinarts	Phillips
Historian	Max Wolff	Gilbertson
Honors and Awards	Carl Jordan	Jordan

CRC 78 ARRANGEMENTS COMMITTEE

General Chairman	Thomas J. White
Vice Chairman	Herbert Duncan
Reception & Registration	Donald Bryant
Finance	Jack Palmer
Ticket Sales	Richard Friedman
Printing & Mailing	Robert Voelz
Posters	Edward Merino
Hotel Arrangements & Welcome Party	Allen Wicks
Thursday Night Social	Jerry Kechter
Banquet	James Lazor
Ladies Activities	Richard Charles
Transportation	Don Dickson
Sports	Peter Filios
Technical Sessions	Thomas Simonson
Publicity	Dave Attard
Welcome Luncheon	Peter Johnson
Hospitality	Jack Kniveton



Fog Dispenser

GOLDEN GATE CHAPTER  ASHRAE

VOLUME XVII NO. 1

OCTOBER, 1977

MEETING NOTICE

The first meeting of the Golden Gate Chapter for the 1977-78 year will be held at the Engineer's Club on the 16th floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco on Thursday, October 6, 1977. The Social Hour will begin at 5:30 PM, with dinner at 6:30 PM.

OCTOBER PROGRAM

Chairman: Dick Glumac
 Subject: Energy Conservation Standards for New Non Residential Buildings

Speaker: Donald L. Watson

Mr. Watson is the Manager of the Building/Appliance Office, Conservation Division, of the State of California Energy Resources Conservation and Development Commission.

PRE-MEETING WORKSHOP

Chairman: Tom Judson 6:00-6:30PM
 Upstairs

Topic: Cooling Tower Water Treatment

Speaker: Herman Franz, Corrosion Laboratory, Garrett Callahan Co.

Mr. Franz, a registered corrosion engineer in the State of California will discuss interesting aspects from his 30 years in the corrosion control industry.

NOTICE * NOTICE * NOTICE * NOTICE *

There will be a raffle of the returned reservation cards! The one picked will receive a free dinner for the November meeting. Send in your reservation cards early.

HONOR ROLL

AIR FILTER/CONTROL

Air Filtration, Measurement and Control; Odoroxidants; Dry Air Evap Coolers

Gene Valerio Bob Swezey Jim Nemechek

Box 2787 New Location: 727 Airport Blvd. South San Francisco (415) 871-6808

PRESIDENT'S COLUMN

Welcome Members! --but first the Chapter must recognize with gratitude the fine leadership of Carl Jordan, our Past President, and Jack Palmer, our retiring Board Member. It's not surprising however, that both men are back actively working for the Chapter again this year. Are you?

I'll bet you didn't notice that the Presidential Portrait is missing in this column. It's absence is part of the "New Look" that our dedicated editor, Bill Schultz, has put together for us, and I approve!

Thanks to the many members who responded to my meeting format survey last May. Some changes will be tried, and your comments, whether bouquets or brickbats, will be solicited.

And thanks especially to respondents to our two volunteer surveys, and to those who graciously accepted committee chairmanships. Others will be contacted directly by the chairman, whose names are listed elsewhere in this issue. Feel free to call any of them to volunteer. It'll be an active year....get on board!

.....Gene Valerio

CRC 77 REPORT

CRC stands for Chapters Regional Conference, and the 1977 meeting of the 17 Region X Chapters was held during May in Vancouver, B.C. Your official Chapter representatives were Gene Valerio, Dick Glumac, and Carl Jordan. Tom White, Jim Nemechek, Kevin Dowling, and Don Bryant also attended on official business, and many other Golden Gate members were registered. Total attendance was approximately 250 (including wives).

Social functions, technical programs and committee workshops were scheduled. However, the Conference concentrates on the administrative functions of the Society. Nominations for Regional and National positions were put forward, along with recommendations for Society operational changes. The business agenda was a long one, so the conferees agreed to start the Saturday morning session (the last day) at 6:30 AM!

The conference nominated Dick Perry, our present Regional Chairman, for National Treasurer, and Wally Donley (Fresno) for Regional Chairman. All California chapters met in a special session in an attempt to coordinate efforts on energy conservation regulations and education.

NEWS FROM HEADQUARTERS

WANTED: ENGINEERS

The index of demand for scientists and engineers has shown good recent strength. Beginning last May it stayed above 100 through 1976, reversing a trend that had it below 100 for 19 months. The scale reflects employment rates derived from help-wanted ads in selected trade publications, using 1961 figures as the benchmark. The level for December was 115, compared with 68.6 for December 1975 and 80.1 for December 1974. Yearly averages show: 101.7 in 1976, 74.4 in 1975 and 90.5 in 1974.

SOLAR STANDARDS

Publication of two standards in the area of solar energy has been announced by the Society: ASHRAE Standard 93-77 "Methods of Testing to Determine the Thermal Performance of Solar Collectors" and ASHRAE Standard 94-77 "Methods of Testing Thermal Storage Devices Based on Thermal Performance."

Both are now available from the ASHRAE publications Sales Dept., 345 E. 47th St., NY, NY 10017, at the following prices: When purchased separately, 93-77 -- \$4.00 for ASHRAE members and \$8.00 for nonmembers; 94-77 -- \$3.00 for ASHRAE members and \$6.00 for nonmembers; when Standards 93 and 94 are purchased as a package of two -- \$5.00 for ASHRAE members and \$10.00 for nonmembers. Mailing charges of \$.35 for each standard should be included with your payment.

MEMBERSHIP

Membership during the past fiscal year continued to increase, and figures now show that 9% of the membership is under 30 years of age.

SFBAEC ENDOWMENT FUND

Our chapter is one of 35 member societies in the San Francisco Bay Area Engineering Council. Tom Reinarts is our delegate to the Council which has established an Endowment Fund, the interest from which will fund scholarships.

Your Board has agreed to publicize this activity, and an explanatory folder is included with this issue. We recommend that you consider donating, keeping in mind, however, that we also need your contribution to our Cal-Poly Worksip Drive which will start soon.

NEW MEMBERS

The Golden Gate Chapter Welcomes the following new members:

- Mr. Eric Knox Keller-Gannon
- Miss Gay Yamogiwa Honeywell
- Mr. Michale Branland P.G. & E.

NEXT MONTH

The November Workshop will be "Energy Conservation and Cost Savings in Parking Garage Ventilation Systems, Using Carbon Monoxide Monitoring Equipment", as presented by Energetics Science, Inc.

We have the opportunity to present three more Pre-Meeting Workshop sessions this year and solicit the suggestions of the membership for desired topics and interested speakers. Please contact Tom Judson at 932-4201.

...headquarters continued...

ASHRAE INSURANCE PLANS

All inquiries about the Life Insurance Plan or any of the other Plans in the Group Insurance Program should be made to the Administrator, 1707 L Street, N.W., Washington, D.C. 20036. Telephone (202) 296-8030.

Know a Prospective New Member?

Contact Membership Chairman:
Jim Nemechek(415) 871-6808

or Committee Members:
Sherman Brown(415) 568-2850
Dick Frenzel(415) 873-1660

Mail or Phone News to:
Bill Schultz, Editor
FOG DISPENSER
Powers Regulator Company
1305 Grandview Drive
South San Francisco, CA 94080
(415) 871-1944

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible date, that copy for the FOG DISPENSER can be in the editor's hands:

Meeting date	Copy deadline
Nov. 3, 1977	Oct. 14, 1977
Dec. 1, 1977	Nov. 11, 1977
Jan. 5, 1978	Dec. 16, 1977
Feb. 2, 1978	Jan. 13, 1978
Mar. 2, 1978	Feb. 10, 1978
Apr. 6, 1978	Mar. 17, 1978
May 12, 1978	Apr. 14, 1978
Jun. 1, 1978	May 12, 1978

Published Monthly, October through June, by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94107—Phone 495-4552

1977-1978 OFFICERS
Eugene L. Valerio..... President
Dick M. Glumac.... Vice-President
Thomas A. Gilbertson... Secretary
James M. Holden Treasurer

BOARD OF GOVERNORS
Robert Phillips Tom Campbell
 Carl Jordan

PLEASE PAY YOUR DUES !

Chapter Dues Notices were mailed during July. If you've lost the invoice, use the copy below.

Payment deadline is November 1 --absolutely firm. To insure that your name is listed in the 1978 Roster, and to receive your copy of the Fog Dispenser in the months ahead, please send your check today.

National Members who are not yet Chapter Members are cordially invited to join us. Use the form below, and send it with your check to our Membership Chairman, Jim Nemechek, at Air Filter/Control, Box 2787, South San Francisco, CA 94080

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.

c/o **DUPLICATING ASSOCIATES** 370 BRANNAN STREET • SAN FRANCISCO, CA 94107



Checks may be made payable to **GOLDEN GATE CHAPTER, ASHRAE**

INVOICE FOR YEAR 1977 - 1978

DUES \$ 12.00

ROSTER INFORMATION

Member's Name _____

Home Address _____ Zip _____

Wife's Name _____

Home Phone (A/C) _____

Your Firm Name _____

Your Firm Address _____

Your Firm Phone (A/C) _____

Position Held _____

**CHECK
PREFERRED
MAILING
ADDRESS**

PLEASE PRINT OR TYPE, AND RETURN ONE COPY FOR ROSTER ALONG WITH DUES PAYMENT

NOVEMBER 1st IS DEADLINE

MINUTES FROM LAST MEETING

June 2, 1977

1. Introduction of members and guests.
2. Moved and approved minutes of April 5, 1977 meeting.
3. Announcements by C.H. Jordan.
 - a) Thanked Pete Filios for fine Golf Tournament.
 - b) June 3, 1977-1st Annual Tennis Tournament in San Francisco., at San Francisco Tennis Club
 - c) W.D. Rinefort-Chairman of the Committee U.L. Labeling San Francisco Electrical Code - Committee to work with the City of San Francisco Department of Public Works.
4. E.L. Valerio reported on CRC Meeting in Vancouver, B.C. Also to be held in San Francisco and asked for VOLUNTEERS to help with ORGANIZATION.
5. C.H. Jordan presented Certificates of Recognition to: Jim Taylor, John Carriger, William Schultz, Dave Attard, Nick Dann, Jerry Kechter
6. C.H. Jordan thanked Jack Palmer for his guidance during the past year.
7. C.H. Jordan turned the Presidential Duties over to E.L. Valerio with the paraphernalia, such as: Small hammer, Huge mallet, etc.
8. Dick Charles and Don Bryant announced the need for hiring of minority trainees thru ESCMT.
9. E.L. Valerio presented Carl Jordan with the Certificate of Appreciation, and the Past President's Pin.
10. Clyde Bentley introduced past President's and their wives. Clyde and Tom White related many stories of the wonderful past.

Respectfully Submitted,
 Dick M. Glumac, Secretary

TREASURER'S REPORT

	<u>6-30-77</u>	<u>5-31-77</u>
Income	\$1133.00	\$2462.08
Expenses	\$5682.00	\$4262.90
Members Equity	\$2772.62	\$5999.79

MEETING GUESTS

- | | |
|----------------|---------------------|
| Larry Kelly | Norman S Wright Co. |
| Edward Simons | Consulting Engineer |
| Milan Komadina | A.R. Peterson |
| Bill Clemenson | Carrier |
| John Palm | Industrial Steam |

WIVES OF MEMBERS

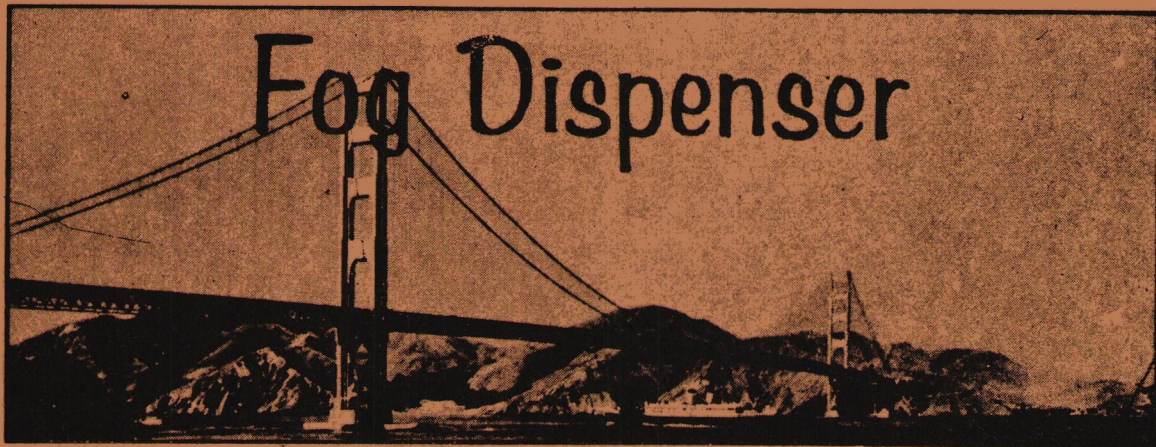
- Betty Hardeman
- Marie Kniveton
- Barbara Alger
- Barbara Simonson
- Rose Delaney
- Adeline Baldwin
- Shirley Palmer
- Shirley Pollock
- Van Charles
- Ruth O'Hare
- Helen Walker
- Adele White
- Wilma Jordan
- Pat Valerio
- Juanita Gilbertson

FUNDAMENTALS HANDBOOK

The 1977 Fundamentals volume of the ASHRAE handbook was delayed due to a printers' strike. Printing is now about complete, and eligible members should receive their copy very soon.

HONOR ROLL??

Perhaps you may not know the purpose of the Honor Roll listing on page 1 of every Fog Dispenser. The organization so honored has donated \$50.00 to the Chapter to partially offset publication and mailing costs. We'll welcome volunteers for this honor; call Bill Schultz to get on the list!



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI NO. 9

JUNE 1977

MEETING ANNOUNCEMENT

The ninth regular meeting of the Golden Gate Chapter for the 1976 - 77 year will be held at the Engineers Club on the 16th floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco Thursday, June 2, 1977. The Social Hour will begin at 5:30, with Dinner at 6:45 PM.

MAY PROGRAM

Gene Valerio, Chairman

Past Presidents' Night this year will feature Clyde Bentley and Tom White as Co-Masters of Ceremony. Be prepared for some good-natured ribbing and story-telling by the old pros!

Past Presidents and their wives will be guests of the Chapter this evening.

* NOTICE * NOTICE * NOTICE * NOTICE * NOTICE *

THERE WILL BE A RAFFLE OF THE RETURNED RESERVATION CARDS! AND THE ONE PICKED WILL RECEIVE A FREE DINNER FOR THAT NIGHT'S MEETING. SO SEND IN YOUR RESERVATION CARD EARLY!

IT'S NOT TOO LATE TO VOLUNTEER !

Dig out last month's Fog Dispenser, look for the pink and yellow volunteer survey sheets, note on them your preference for committee work next year, and send them to Gene Valerio; or call him at (415) 871-6808. If you don't send him anything, assignments will be made by the Board on what some might call an arbitrary basis.

WANT TO CHANGE THE MEETING FORMAT ?

Here's your chance to suggest changes to your Board. Return the enclosed Survey Form right away!

RALPH WILLIAMS

It is with sadness that we inform the membership of the passing of Ralph Williams, a member of the Golden Gate Chapter, and president of the Lambert Company.

SUPPORT THE 1977 WORKSHOP FUND :

HONOR ROLL

HEAT TRANSFER EQUIPMENT CO. INC.

Factory Representatives

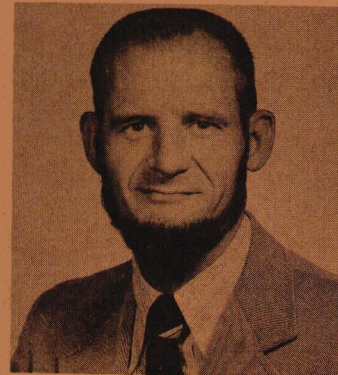
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CORNER

PRESIDENT'S



CARL H. JORDAN

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94105, 495-4550.

1976 - 1977

OFFICERS

- Carl H. Jordan President
- Eugene L. Valerio Vice President
- Dick M. Glumac Secretary
- Thomas A. Gilbertson Treasurer

BOARD OF GOVERNORS

- James M. Holden
- Bob Phillips
- Jack A. Palmer

COPY DEADLINE

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<u>Meeting Date</u>	<u>Copy Deadline</u>
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2 JUN 1977	16 MAY 1977
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KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chairman:
Jim Nemecek 415/871-6808

or Committee Members:
Chuck McLaughlin 415/326-9115
Bob Phillips 415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
FOG DISPENSER
337 Roebbling Road
So. San Francisco, CA 94080
(415) 873-1660

Dear Members,

Congratulations to Rod Kief of Cal Poly on his receipt of the E. K. Campbell Award for being the "Outstanding Teacher in the H.V.A.C. Field. We knew he was an Outstanding Teacher and now our Society has acknowledged it.

Our annual Social was a success and lots of fun, inspite of last minute changes to accommodate what we thought was going to be a low turnout. We had over 80 people on the party cruisers America and Americana out of the Marriott Inn at the Berkeley Marina. One of our guests was a representative of the San Jose Navy (Norm McLeod). Thanks to Jerry Kechter for his organizational efforts.

I goofed last month when I mentioned the names of some of the members of the Air Conditioning Society of San Francisco. I failed to mention that Life Member Oliver Johnson was the member that was kind enough to share that bit of history with us. Thanks Oliver.

California Administration Code, Title 20, Section 1605 requires that "After November 3, 1977, no new appliance described in Section 1601 shall be sold or offered for sale in California, which is not certified by its manufacturer to be in compliance with the provisions of this article." The appliances described in Section 1601 are Refrigerators, Refrigerator-Freezers, Freezers, and Air Conditioners.

And now, with great optimism for the futrue, I will be turning over the reins of our Chapter to a hard worker and a good friend, Gene Valerio. My thanks to the Board Members, Committee Members and others of you who have contributed to the activities of this past year. It has been my pleasure to serve.

CARL H. JORDAN, PRESIDENT

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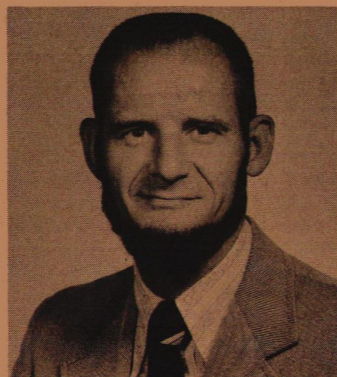
BOARD OF GOVERNORS

James M. Holden
Bob Phillips
Jack A. Palmer



PRESIDENT'S

CORNER



CARL H. JORDAN

Dear Members,

Our December meeting regarding the implications of Title 24 energy regulations and the possible alternative designs allowed by the regulations was certainly of interest. As usual, Dennis Bridges did a nice job with his presentation.

Although the regulations are still in and out of the courts, the State Energy Commission has advised, in a 12/6/76 letter, that they expect the regulations to become effective, and that "...we have been asked to inform building designers to be ready to comply with the standards on buildings for which building permit applications are made on or after February 6, 1977."

I was both pleased and surprised to note how many local members are serving on Society technical committees. They include Warren Blazier, Tom Campbell, Burt Coddington, Ralph Williams, Andrew Cort, William Kumph, Robert McGee, Richard Stone, Carl Miller, Sven Olund and Tom Gilbertson.

The American National Metric Council has released a 32-page report reflecting the U.S. position on major sectors of the economy, including construction. The report is available for \$3.00 from: ANMC, 1625 NW Massachusetts Ave., Washington DC 20036.

The National Bureau of Standards is distributing NBS Standards Information Services, a document listing information on standards and standardization activities in the U.S. The pamphlet is available from: Standards Information Services, Room B 162, Building 225, National Bureau of Standards, Washington DC 20234.

See you in Reno on March 4 through 6!

CARL H. JORDAN, PRESIDENT

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible dates that copy for the FOG DISPENSER can be in the editor's hands:

Meeting Date	Copy Deadline
6 JAN 1977	20 DEC 1976
3 FEB 1977	17 JAN 1977
3 MAR 1977	14 FEB 1977
7 APR 1977	21 MAY 1977
7 MAY 1977	18 APR 1977
2 JUN 1977	16 MAY 1977

KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chairman:
Jim Nemechek 415/648-0646

or Committee Members:
Chuck McLaughlin 415/326-9115
Bob Phillips 415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
FOG DISPENSER
337 Roebing Road
So. San Francisco, CA 94080
(415) 873-1660

MINUTES - GENERAL MEETING December 2, 1976

Place of meeting: Engineers Club, San Francisco
Meeting started: 8:10 PM
Meeting adjourned: 9:50 PM

ANNOUNCEMENTS

BOB BRAUN: EJC Career Counseling Group needs volunteers for career guidance in the Pacifica area. Volunteers please contact Bob Braun.

JERRY KECHTER: May Social will be a boat trip, tentative date: May 7, 1977.

GENE VALERIO: Presented facts about the March meeting in Reno.

CARL JORDAN: Announced the proposed nominating committee:

Jack Palmer
Dick Charles
Lou Pollock
Dick Friedman
Carl Jordan

MAIN PROGRAM

SPEAKER: Dennis Bridges, Trane Company, La Crosse, Wisconsin

SUBJECT: State of California, Title 24--Energy Conservation Standards

The brief summary of the presentation is as follows:

1. Discussion of prescriptive standards vs. performance standards.
2. Example of design complying to the energy conservation standards, Division 4 and 9.
3. A fictitious building parameter as follows:
 - a) Gross area of 380,920 sq. ft.
 - b) Building dimensions - 107 ft. x 178 ft.
 - c) Total area divided in 10 temperature zones.
4. First, the design was based on the criteria of the pre Title 24 requirements. The cost of the curtain wall and HVAC system was established.
5. Secondly, the design parameters were changed to comply with the Title 24 standards. The costs of the curtain wall was increased and the HVAC system decreased.
6. Thirdly, the design was accomplished in accordance with the Division 2 of the Title 24--The Alternative Design. For this design a VAV HVAC has been used, and the glass area increased. The total cost of the combined architectural/HVAC envelope was less than the cost complying to the Division 4-9.

The presentation was supported by the graphs, economic analysis, HVAC load and equipment sizes for the three cases.

7. General conclusions are given as follows:
 - a) Title 24 properly applied will reduce building energy consumption in office buildings.
 - b) The largest potential for energy conservation is usually lighting.

...continued

- c) Because of this fact, heat recovery equipment and systems should be considered where the building design and utilization offer coincident cooling and heating loads.
- d) Title 24 allows flexibility for architectural, mechanical system, and equipment tradeoffs to reduce energy consumption in buildings.
- e) Title 24 required early involvement of all members of the building and system design team to be able to effect the optimum design in the best interests of the owner.
- f) The last and most striking conclusion made in this analysis is the fact that energy conservation makes good economic sense.

DISCUSSION

Mr. Bridges informed the meeting that the four energy studies for the State of California Commission made the wrong conclusion because all four inputs were wrong. Using computer language--garbage in--garbage out.

Respectfully submitted,

DICK M. GLUMAC, SECRETARY

* * *

MEETING ATTENDANCE December 2, 1976

Members:

- | | |
|-----------------|-----------------------------|
| Bill Schultz | Powers Regulator Co. |
| Bert Bomersine | Milton Meyer & Co. |
| Sherman Brown | York |
| Allen Wicks | SMACNA |
| Gino Colacchia | University Mech |
| Dave Rifkin | Marina Heating & Air Cond |
| Nick Dann | Edward B. Ward & Co. |
| Steve Sprague | Miles Suda & Assoc. |
| Roy Gifford | Vann Engineering |
| Elmo Finklebine | Carrier Air Conditioning |
| Jim Nemechek | AAF |
| Tom Conroy | Clyde Equipment Co. Inc. |
| Grant Bentley | CCB |
| Paul T. Jay | SFIA Engineering |
| Wei Lin Hsia | Kasin, Guttman & Assoc. |
| Richard Leao | Norman S. Wright & Co. |
| Kenneth Hill | Kaiser Engineers |
| Sam Yamoto | Keller & Gannon |
| D.C. Bryant | U.C. Extension |
| Roy G. Anderson | City College of S.F. |
| Wayne Jin | Skidmore, Owings, & Merrill |
| Oran Stapleton | Wells Fargo Bank |
| Tom Namberumal | Kasin, Guttman & Assoc. |
| Dan Bradshaw | Owens Corning Fiberglas |
| Bernie Beckius | Scott Co. |
| Dick Porter | G.J. Yamas Co. |
| F.M. Pawcios | U.S. P.S. |
| R.H. Judd | Montgomery & Roberts |
| Pete Khezerick | Ind. Power |
| Kaz Inouye | Kasin, Guttman & Assoc. |
| John Brose | The Brose Co. |
| Howard Harvey | Johns-Manville |
| Sam Chase | Standard Oil of California |
| Bob Braun | Charles & Braun |
| K. Witman | Kalin, Wittman & Assoc. |
| Dick Friedman | Engineered Air |
| Dale Sarjor | Interactive Resources |

Continued

- g) Automatic controllable pitch motors are the finest method available to vary volume and/or pressure over a wide range with high total efficiencies. Flow reduction down to 20% or less of design can usually be realized. The sound power level is lowered as flow reduces. Contrast this with inlet vanes control on centrifugal fans which results in substantial increase in PWL with flow reduction.
- h) Control response of controllable pitch fans is far more linear than inlet vane control on centrifugal fans.
- (Refer to typical response curves)
- i) Acoustic considerations - Vaneaxial fans deliver more high frequency noise than centrifugal so every installation should be carefully checked. Sound traps are often required on both sides of the fan. Radiated noise should be investigated. Sound power level data for each octave band is available from fan manufacturer.

to the discharge sound trap bank. The fan should be located in a lined plenum which extends from trap to trap. This will take care of radiated fan noise on most systems. Refer to ASHRAE guide for acoustic calculation procedures.

13. Tom Gilbertson discussed the cousti- an:

- a) Acousti-fan
- 1) Removes system dependent performance variables.
 - 2) Noise level control built in.
 - 3) Not for low pressure, low velocity system.
- b) Fan application
- 1) Even velocity profiles.
 - 2) Reduced space requirement.
 - 3) Predictable performance.
 - 4) Reduced noise level.
- c) Acousti-fan application features
- 1) Take-offs in any direction--1 fan diameter from wheel.
 - 2) Multiple outlets in any direction.
 - 3) Drive and inlet losses included in ratings.
 - 4) Sound attenuation built in and tuned.
- d) Acousti-fan is safe to apply because you know what your system is.
- Acousti-fan is sound engineered. Safe and sound.

14. Hank Shastany discussed inline centrifugal fans.

Continued

- a) History:
- 1) Dryer Fan Co. took centrifugal mounting in tubular, added straightening vanes approximately 15 to 20 manufacturer's offer.
 - 2) Westinghouse also did development work.
- b) Discussion:
- 1) Advantages - compact--50% less space than centrifugal can be horizontal and vertical fairly efficient.
 - a) First cost - expensive in small sizes.
 - b) Installed cost - less than centrifugal.
 - c) Operation cost - uses less power.
- c) Summary and wrap-up
- 1) Important consideration to determine feasibility--space saving.
 - 2) Selection method was discussed.
 - 3) Recommended use.

Compiled by:

DICK M. GLUMAC, SECRETARY

...continued from Page 1

4. Carl Jordan invited members to premeeting workshop.
5. Announced that Mr. Holbrooke received honorary 50-year certificate.
6. Carl Jordan also presented Life Membership Certificates to
 - Clyde Wilsor Reed
 - Raymond Plass
 - Edward Hill, Jr.
7. Don Bryant announced that the BA ESMT received a grant from ERDA for energy research.
8. Dick Charles announced the making of the weather data book--Golden Gate Chapter--of which he is chairman, with a committee of six people.
9. Gene Valerio:
 - a) Outlined program for November, December and January.
 - b) Proposed March meeting in Reno with wives. Train ride. Meeting combined with Sacramento and Reno Chapters. Majority of present members approved.
10. The technical program consisted of the presentation of fan types, moderated by Henry Mouw.
11. John Werner presented the centrifugal fans.

Types of centrifugal fans:

 - a) Forward curved (FC) - lower costs, large volume, lower S.P.
 - 1) Used for smaller systems on low pressure duty.
 - b) Radial blade (RAD)
 - 1) Used for medium and high pressure material handling systems.

Not used extensively in ventilation systems.
 - c) Backward inclined (BI)
 - 1) Used for medium and high pressure systems.
 - 2) Non overloading and more efficient.
 - d) Backward inclined airfoil (BIAF)
 - 1) Used for medium and high pressure systems.
 - 2) Most efficient.
 - 3) Lower sound power levels.
 - 4) Non overloading.
 - 5) Smaller sound traps required.
 - e) Octagonal scroll - slide presentation
 - 1) Added structural strength.
 - 2) Catalog data available for dual discharge.
 - 3) Catalog data available for inlet and scroll bypass.
 - 4) Can modulate air volume down to zero.

...continued

- f) VAV applications
 - 1) FC types can ride the fan curve.
 - 2) BI and BIAF can have inlet vane control to unload.
12. Jack Kniveton presented the case for vaneaxial and tubeaxial fans.
 - a) Tubeaxial fans - Rotor located inside a cylindrical tube. Running clearance between wheel tip is close. This results in significant improvement over propeller fan.
 - b) High efficiency vaneaxial fans - Airfoil bladed motor located inside a cylindrical tube. Close blade tip clearance. Curved guide vanes located downstream of rotor correct the rotary action imported to the air by the wheel and improve pressure characteristics and efficiency of the fan.
 - c) Range of dimensions and performance -
 - 1) Diameter - 2 inches to 15 feet.
 - 2) Volume - 200 CFM to 1,000,000 CFM.
 - 3) Pressures - 1 inch to 80 inches WG.
 - 4) Horsepower - .004 to 2500.
 - 5) Speeds - 690 RPM to 24,000 RPM.
 - d) Construction of vaneaxial fans for air conditioning industry -
 - 1) Rotors - Cast aluminum tapered airfoil blades and aluminum hubs. Blades are individually adjustable or of the automatically controllable pitch type.
 - 2) Housings - Should be 3/16" to 1/4" thick with heavy angles in order to insure concentricity. This permits blade tip clearance in the order of .10" for maximum efficiency.
 - 3) Motors - Should be NEMA, totally enclosed, air over, squirrel cage induction, continuous duty, variable torque, class F insulation, B-10 bearing life, suitable for operation in vertical, horizontal, or angular position. Open type motors are not recommended.
 - e) Advantages of vaneaxial fans -
 - 1) Compact size saves space and weight.
 - 2) Hang from ceiling, wall or mount on floor.
 - 3) Eliminate inertia bases. Fans balanced to maximum of 1 mil. double amplitude.
 - 4) Direct drive is recommended since it eliminates losses, installation and maintenance cost of V-belt drives.
 - 5) High reliability proven by use in nuclear submarines, mine ventilation, computer rooms and other critical applications all over the world.
 - 6) Automatic controllable pitch fans are ideal for VAV systems. Substantial energy savings are realized.
 - f) Inlet vanes to reduce flow are available from all vaneaxial fan manufacturers. In the opinion of the writer, they have too many disadvantages and should not be used except for minor flow reduction.

MEETING ATTENDANCE

January 6, 1977

Members:

Tom Couroy
Sam Yamoto
Roy L. Formby
John Lewis
Ken Lloyd
Bennie Speckius
Jim Lynn
Robert Voelz
L. Bedard
U.B. Muldor
Tom Douglass
Vic Bach
Jim Van Baskirk
Tom Fewell
Ed Beeching
Don Dickson
Bill Schultz
Tom Reinarts
Howard Horrey
Ken Solberg
R.F. Giovannini
Roy G. Anderson
D.C. Bryant
Richard Hum
Walter Roos
Abraham Bechar
Jim Curtin
Tom Molinaro
Tim Marshall
Peter Purgalis
H. Huddleston
Brian Schneider
Erik Stephansen
R. Scheunert
F. Thomas Collins
Clyde Wilson Reid
Clyde Bentley
Doris Bentley
Frank F. Gond
Tom Campbell
Leo B. Pumphrey
Don Bradshaw
Jim Breese
Ted Georgiou
R.J. Krauthamer
Kazuo Inouye
Lewis Brooks
B. Fromm
Bob Wistort
Wayne Jin
Jack Zarour
Greg Braak
Dick Porter
Kenneth Hill
Tom Namberumal
Bob Roos
Bob Swezey
John Brose
Hendrik J. Mouw
Gus Gendler
Jack Kniveton
George N. Aronovsky
Wei Lin Hsia
C.M. Heiung
Hasau Burney

Clyde Equipment Co., Inc.
Kellery Gannon
PG&E
Sverdrup & Parcel
Lillard Co.
Scott Co.
Scott Co.
Bentley Engineers
Dinwiddie Construction
Van-Muldor Sheet Metal
Douglass Insulation
Western Plmbg & Htg Co.
A.O. Smith Corp.
Engineered Air Systems
Engineered Air Systems
Serendipity Travel
Powers Reg Co.
Keller & Gannon
Jobus-Monville
York
Thermal Mechanical
City College of S.F.
U.C. Extension
Kaiser Engineers
Kaiser Engineers
SOM
Fairchild Semiconductor
Carrier Air Conditioning
ITT Fluid Handling Div.
Rogers Engineering
Columbia Mechanical
ILG
Bechtel Inc. H&CF
Bechtel Inc. H&CF
Self-employed
Clyde Equipment
Bentley Engineers
Bentley Engineers
Bentley Engineers
Owens Corning Fiberglas
University Mechanical
Owens Corning Fiberglas
J.L. Breese
Kopa Engineering Corp.
ILG
Kasin, Guttman & Assoc.
Hussmann San Francisco
International Engr. Co.
Pribuss Engineering Inc.
Skidmore, Owings & Merrill
Johnson Controls
Johnson Controls
G.J. Yamas Co. Inc.
Kaiser Engineers
Kasin, Guttman & Assoc.
Mechanical Consulting Co.
Air Filter/Control
The Brose Co.
Skidmore, Owings & Merrill
G.L. Gendler & Assoc.
Norman S. Wright & Co.
Aronovsky & Assoc.
Kasin, Guttman & Assoc.
Robert B. Liles, Inc.
Buonaccorsa & Associates

...continued

Gino Colacchin
Ihsan H. Ali
Opan Stapleton
Bert Bomersine
Charles Hardeman
Frank W. Mayhew
Walt Schneider
K. Wittman
Dick Friedman
Dick Frenzel
Rich Wells
Kevin Dowlings
Joe Gardner
Jim Lazor
Dave Rifkin
Bill Baker
Jim Witharm
Earl Carrier
Richard E. Gee
Steve Sprague
Roy Gifford
Elmo Finklebine
Dick M. Glumac
Tom Gilbertson
Michael Huggan
Jim Nemechek
Grant Bentley
Gene Valerio
Doug Daniels
Carl H. Jordan
Bob Phillips
Chuck McLaughlin
Jack A. Palmer
Gene West
Morris D. Konnoff, Jr.
Richard Leao
Richard Oas
Pete Tidmarsh
Hank Shastany
Sherman Brown
Max Wolff
Dan Vandament
Gerry Gaffe

Guests:

Paul Slakey
Tom Mayfield
Arnold Bletnitsny
Ralph Craig
Don H. Huffine
Leroy Erikson
Joe Roberts
Edwin Hill
Bill Nestor
William C. Smith
Stanford J. Hardeman
Mark T. Hardeman
Bob Hussey
Liong Tian Cy
Kenny Gerlach
Donald W. Aitken
Vince Aiello
Steve Sabol

UMEC
Ali & Associates
Wells Fargo Bank
Milton Meyer & Co.
C.S. Hardeman
Yamas Co.
Kasin, Guttman & Assoc.
Kasin, Guttman & Assoc.
Engineered Air
Edward B. Ward & Co.
Montgomery & Roberts
Bentley Engineers
Aladdin Heating Corp.
Edward B. Ward & Co.
Marina Heating
H.W. Baker Co.
Fraser & Johnston Co.
Consultant
Bechtel Power Corp.
Miles Suda & Assoc.
Vann Engineering
Arthur D. Little & Co.
Glumac & Webster
I&H Air-Co
Moniton Tech
Air Filter/Control
CCB
Air Filter/Control
Berkeley Solar Group
Skidmore, Owings & Merrill
Kennedy Engineers
McLaughlin Associates
California Hydronics
Edward B. Ward & Co.
Mechanical Consulting Co.
Norman S. Wright Co.
Safeway Stores, Inc.
York
Westates Pacific Inc.
York
Dill & Sederberg
Vandament Engineers
Tempco Equipment Co.

Lillard Co.
Solaron Corp., Denver
SOM
Thermal Mechanical
AHK Corporation
Lillard Inc. H&CF
Williams & Burrows
Retired
Scott Co.
Wells Fargo Bank
Solar Energy Heating Inc.
Solar Energy Heating Inc.
Marina Heating & A/C
Bayha, Weir & Finato
Charles & Braun
Center for Solar Energy
Applications - S.J. State
Vann Engineering
Weather Systems



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI NO. 5

FEBRUARY 1977

MEETING ANNOUNCEMENT

IMPORTANT

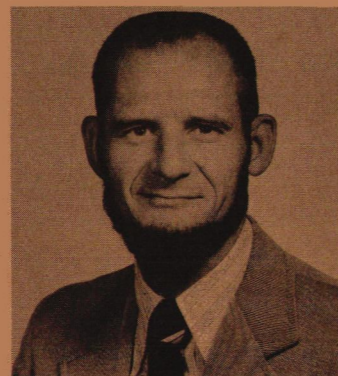
FEBRUARY - ANNUAL FIELD TRIP; see enclosed flyer.
NO meeting at the Engineers' Club.

MARCH - NO REGULAR MEETING. Everyone is taking
their wives to Reno on March 4!



CORNER

PRESIDENT'S



CARL H. JORDAN

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94105, 495-4550.

1976 - 1977

OFFICERS

- Carl H. Jordan President
- Eugene L. Valerio Vice President
- Dick M. Glumac Secretary
- Thomas A. Gilbertson Treasurer

BOARD OF GOVERNORS

- James M. Holden
- Bob Phillips
- Jack A. Palmer

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible dates that copy for the FOG DISPENSER can be in the editor's hands:

Meeting Date	Copy Deadline
3 FEB 1977	17 JAN 1977
3 MAR 1977	14 FEB 1977
7 APR 1977	21 MAY 1977
7 MAY 1977	18 APR 1977
2 JUN 1977	16 MAY 1977

KNOW A PROSPECTIVE NEW MEMBER?

- Contact Membership Chairman:
 Jim Nemechek 415/648-0646
- or Committee Members:
 Chuck McLaughlin 415/326-9115
 Bob Phillips 415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
 FOG DISPENSER
 337 Roebling Road
 So. San Francisco, CA 94080
 (415) 873-1660

Dear Members,

Many thanks to our Solar Energy Committee and to Doug Daniels and Donald Aitken for their most interesting presentation at our January meeting. We must accelerate our efforts in this most important field.

Doug Daniels is replacing Tom Collins as our Solar Energy Committee Chairman. Thanks, Tom, for getting us off to a fine start.

Thanks also to Lu Bedard (et al) for being active in the initiation of hearings before the S.F. Board of Examiners regarding problems with the requirements for U.L. listed equipment in the City.

At this writing (January 13), the decision regarding commencing enforcement of the California Title 24 energy conservation regulations on February 6 is apparently still up in the air. It appears, however, that the State Energy Commission is considering changing some of the wall and roof (envelope) heat transfer constraints to "recommendations" rather than "requirements."

Nicholas La Courte, Director of Standards for ASHRAE, is looking for qualified individuals to serve on the following Society standards projects. If you are interested, contact him at headquarters:

- 41.2P Standard Measurement Guide: Air Flow Measurement
- 41.3P Standard Measurement Guide: Pressure Measurement
- 77P Classification of Air-Conditioning Systems by Function
- 80P Heating Terms and Definitions
- 81P Computer Format Information
- 83P Capacity Measurement of Fluid (?) Erected Refrigeration Systems
- 87P Method for Measuring the Dynamic Characteristics of Propeller Fans
- 92P Graphical Symbols for H.V. and A.C.
- 97P Method of Testing Sealed Tubes: Testing of Materials
- 98P Method of Testing for Rating Ice Maker Heat Pumps

See you in Reno in March!

Sincerely,

CARL H. JORDAN, PRESIDENT

FRANCISCO BAY AREA ENGINEERS' WEEK

The San Francisco Bay Area Engineers' Weeks will be held February 20-26, 1977 with the highlight being a banquet on the evening of February 24, it was announced by John D. Williams, Bechtel Corporation, General Chairman of the event.

The week-long Bay Area celebration is sponsored by the San Francisco Bay Area Engineering Council, and coincides with the National Engineers' Week observance sponsored by the National Society of Professional Engineers.

"The theme for Engineers' Week will be 'Key To The Future--Engineering,'" Williams said. "Because so many young people who are preparing for engineering careers are involved with the programs held during Engineers' Week, it is appropriate that the event spotlight some of the future advances and contributions we can expect from engineering," he said.

The nationwide purpose of Engineers' Week is to call public attention to the role of engineering in social, economic and technological progress. The Bay Area observance embraces nine counties and its principal activities are the following:

- A Bay Area Engineers' Week Scholarship Program involves more than 200 local public, private and parochial high schools in the nine counties. Each school nominates one candidate who plans to pursue an engineering or scientific education at an accredited college or university and who has excelled in scholarship and extracurricular achievements to compete in one of 11 different "zones." The 11 zone winners are honored at the Engineers' Week Banquet where a scholarship of \$2,000 is awarded to the overall winner; a \$1,500 scholarship to the 1st runner-up; \$1,000 scholarship to the 2nd runner-up; and \$500 scholarships to each of the remaining eight finalists. U.S. Savings Bonds are awarded to the first three winners in each zone bringing the total Engineers' Week prize money to more than \$10,300.
- The Engineers' Week Banquet, to be held Thursday evening, February 24, at Goodman's, No. 10 Jack London Square, Oakland, culminates the week-long Engineers' Week activities. In addition to the scholarship awards mentioned above, four special scholarships are presented by The Femineers, an organization of wives of members of the Structural Engineers Association of Northern California and the California Council of the American Society of Civil Engineers. A major address on the week's theme, "Key To The Future--Engineering," by a nationally recognized speaker will highlight the banquet. More than 500 engineers, friends and families of scholarship award winners are expected to attend. Tickets will be available in January. For reservations and information contact L.E. Swanson, CSO International, Inc., 2450 Stanwell Drive, Suite 100, Concord, CA 94520. Telephone 415/798-1711.
- A Career Guidance Program for high school students aimed at providing factual information on engineering careers and to stimulate interest in continuing education toward an engineering degree. Professional engineers provide students with in-class lectures, seminars and other informative programs on engineering as a future profession.

...continued

• A Special Events Program involving students and the general public in activities of general engineering interest to be arranged in most of the major geographic areas of the Bay Area. A special feature of this program is tours of plants and laboratories to provide high school students an opportunity to see engineering at work. More than 20 firms and institutions in the nine Bay Area counties will open their doors to visiting students during Engineers' Week. Tours will be conducted at the San Francisco Bay-Delta Hydraulic Model in Sausalito; Pacific Telephone Co. facilities in each county; Chevron Chemical plant; East Bay Municipal Utilities District; Fiberboard Paper Products; Pacific Gas & Electric Co.; Shell Oil Co.; Dow Chemical Research Lab; U.S. Steel Corporation; Stanford University; Union Carbide Corporation; San Francisco International Airport; University of California; Fluor-Utah Engineering Design Facility; Leslie Salt Co., Kaiser Aluminum Research Lab; Lawrence Livermore Laboratories; Foremost Dairy Research Lab. "These industrial firms, manufacturing plants and research and development facilities offer high school students an opportunity to learn first-hand about facilities and techniques that will be helpful to them in the future," Williams said. "The Special Events Committee will be contacting high school science departments and career counselors to arrange for tours," he added.

The annual celebration of Engineers' Week in the Bay Area is officially saluted by the mayors of many of the cities which issue mayoral proclamations or greetings. Last year nine cities around the Bay called attention to the celebration in their community.

That national celebration of Engineers' Week traditionally includes George Washington's Birthday, February 22, in honor of the first President of the United States, who was himself a surveyor and military engineer.

The 1977 Engineers' Week Committee, in addition to General Chairman Williams, includes Colonel H.A. Flertzheim, Jr., Corps of Engineers, General Vice Chairman; Dr. M.A. Soderstrand, Sandia Laboratories, Secretary; F.D. Winslow, Main LaFrentz & Company, Treasurer; Carol Cunningham, International Engineering Company, Finance Chairman; Cheryl Brandt, Stauffer Chemical Company, Scholarship Chairman; Lorne Swanson, CSO International, Inc., Banquet Chairman; H.S. Fowler, Consulting Engineer, Career Guidance Chairman; Charles Seifert, Port of Oakland, Public Relations Chairman; Gail Lowry, Femineers; Pat Ecklund, Corps of Engineers, Special Events Chairman; Carl Garbe, Dames & Moore, Speakers Chairman; and Carl Otto, URS/John A. Blume & Associates, Liaison with San Francisco Bay Area Engineering Council. Tom Bertken, Port of Oakland, is the Past General Chairman, and Frank Tedesco, Department of Transportation, is the current President of the San Francisco Bay Area Engineering Council.

MINUTES - GENERAL MEETING

January 6, 1977

...continued from Page 3

3. Engineers' Week: February 22-26.

Volunteers are needed to speak to civic groups during Engineers' Week.

4. Lou Bedard spoke briefly of the problems associated with the U.L. Labeling of the equipment in the City of San Francisco. Mr. Bedard invited the members to attend the "Board of Examiners" meeting which will be held on January 24, 1977 (tentative date). A lively discussion took place on this very important subject of the San Francisco code.

5. Mr. Jordan read the letter from the State of California Energy Resources Conservation and Development Commission which said that the ruling of the implementation will be forthcoming early January and that the regulations might be effective on February 6, 1977 if the courts rule in favor of the Title 24 regulations.

6. Gene Valerio announced that the General Meeting on February 3, 1977 is the field trip to the PG&E Potrero or Hunters Point gas turbine plant.

March meeting: In Reno - Deadline for registration is January 21, 1977.

7. Mr. Tom Campbell announced the implementation of the State Fire Marshal's regulations for the existing high-rise buildings--"The Life Safety Code."

8. Lew Pollock urged members to support the cause promoted by Mr. Bedard on the U.L. labeling.

9. Mr. Beckius, the Chairman of Research Committee, asked for:

- Volunteers for the committee.
- Contributions.

10. Main Program:

Subject: SOLAR ENERGY UPDATE 1977
Speaker: Doug Daniels

Reviewed commercial and industrial solar applications, especially in the Northern California and the Bay Area. Said that "...all systems require the careful analysis by a designer."

- Santa Clara County was active in solar energy--installed 26 swimming pool heaters, numerous water heaters, two large swimming pools, plus the Community Center HVAC system, where solar collectors generate 190°F temperature. The cost of this facility: \$72.00 per sq. ft. of collectors.

The slide presentations demonstrated the facility. (All costs are for the entire system related to collector area.)

- Hewlett Packard's solar heating system in Cupertino was described and demonstrated with slides.
- Photo processing lab in Marin County with installed cost of \$17.00/sq. ft. was also described.

- Campbell Soup canning facility in Sacramento has series of flat and parabolic concentrating collectors--7500 sq. ft. total area of collectors. Flat plate collectors preheat the water; the concentrating collector heats the water up to required temperature.

Cost: \$40.00/sq. ft.
Output: 2.7 therms/sq. ft./yr.

- In San Francisco the Sierra Club Headquarters building is presently under design.

Cost: \$28.00/sq. ft. (1800 sq. ft.)
Output: 2.5 therms/sq. ft./yr.

- There are no air systems in the immediate Bay Area.

Donald Aitken, Professor - San Jose State

First, paid compliment to the ASHRAE solar insolation tables as the valuable tool in the solar design and research.

San Jose State launched the project "Helios," the 11-million dollar fund available to the building using the solar energy on the campus.

The project started with the 9000 sq. ft. solar collector system at the San Jose State dormitories. Entire solar collector system is built by students.

Mr. Aitken described that the process of design involved the examination of all utility bills to determine consumption.

Survey established the peak demand for showers and washing design system for 70% self sufficiency and one-day storage.

The costing of the project will also be done with the commercial equipment and labor to establish the true cost of the installation. Has 1500-gallon holding tank at 140°F water, with 5000-gallon thermal storage tank. Changed shower heads for lower water consumption.

Mr. Aitken reiterated an important lesson learned: "In solar systems the simplest system is the best system."

For freeze protection use the water circulating at night. Solar system materials of the future: steel, wood, glass, concrete and iron. Designer should always specify materials which require minimum energy for the construction of the system.

Described the System:

Collectors: single glazing cover steel panels--solar collectors. Economics show 12-14 year payback.

The next project is the campus library with the cost of \$500,000 for a solar system. Have 15-year plan to convert almost entire campus into solar.

Respectfully submitted,

DICK M. GLUMAC



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI NO. 6

MARCH 1977

MEETING ANNOUNCEMENT

The sixth meeting of the Golden Gate Chapter for the 1976-77 year will be held at the Engineers Club on the 16th Floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco on Thursday, March 3, 1977. The Social Hour will begin at 5:30 PM, with dinner at 6:45 PM.

MARCH PROGRAM

Gene Valerio, Chairman

Subject: ENERGY EFFICIENCY RATIOS OF 100+ ARE POSSIBLE!

Speaker: Neil Eskra, Marketing Manager, Varicool Division, H&C Metal Products, Santa Rosa

The Varicool unit is a low energy input device using evaporative cooling (adiabatic saturation) and a heat exchanger to produce sensible cooling. You'll hear and see a new twist to old established principles producing very high energy efficiency ratios. Mr. Eskra will review two years of laboratory and field testing on a unit design which is new to many of us.

PRE-MEETING WORKSHOP

Bill Reeves, Chairman 6:00-6:45 PM
Upstairs

Subject: CHEMICAL TREATMENT OF MECHANICAL SYSTEMS

Speaker: Herman Franz, Product Manager, Corrosion Inhibitors, Ganatt-Callahan Co., Millbrae

Mr. Franz will discuss the misunderstood subject of chemical treatment for cooling towers and closed circuit mechanical systems. Consulting engineers, building engineers and contractors should find this very informative. The various water treatment equipment available will be presented to help us select and maintain the equipment needed. Mr. Franz's case studies will be particularly interesting.

* NOTICE * NOTICE * NOTICE * NOTICE * NOTICE *

THERE WILL BE A RAFFLE OF THE RETURNED RESERVATION CARDS! AND THE ONE PICKED WILL RECEIVE A FREE DINNER FOR THAT NIGHT'S MEETING. SO SEND IN YOUR RESERVATION CARDS EARLY!

*** RENO METRICATION WORKSHOP CANCELLED ***

Due to lack of significant response by the January 21st deadline, we were forced to cancel the trip.

MINUTES - GENERAL MEETING

February 3, 1977

Presiding: Carl H. Jordan, President
Call to Order: 5:30 PM
Meeting Place: Pacific Gas & Electric Company
77 Beale Street
San Francisco, CA
(Field trip meeting for members, wives and children)

- Dick Charles, the Chairman of the Nominating Committee proposed the following members for officers of 1977-78.

Eugene L. Valerio, President
Dick M. Glumac, Vice President
Thomas M. Gilbertson, Secretary
James M. Holden, Treasurer
Robert W. Phillips, Senior Board Member
Carl H. Jordan, Past President

All nominations have been approved unanimously.

Continued on Page 3



CORNER

PRESIDENT'S



CARL H. JORDAN

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94105, 495-4550.

1976 - 1977

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7 APR 1977	21 MAY 1977
7 MAY 1977	18 APR 1977
2 JUN 1977	16 MAY 1977

KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chairman:
 Jim Nemechek 415/871-6808
 or Committee Members:
 Chuck McLaughlin 415/326-9115
 Bob Phillips 415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
 FOG DISPENSER
 337 Roebling Road
 So. San Francisco, CA 94080
 (415) 873-1660

Dear Members:

Congratulations! This year is the 40th anniversary of our Chapter. In 1937 the Golden Gate Chapter was formed as a part of the American Society of Heating and Ventilating Engineers (ASHVE). And thanks to Clyde Bentley for calling this fact to my attention.

Also, for your information, the San Francisco Section of the American Society of Refrigerating Engineers (ASRE), now a part of ASHRAE, was formed in 1944.

Thanks also to our PG&E friends for hosting our Chapter at their Potrero Hill power plant for our February field trip.

In January the State Energy Commission did amend the Title 24 "Energy Conservation Standards for New Non-Residential Buildings" to change the envelope (walls, roofs, etc.) heat transfer constraints from "requirements" to "recommendations." However, I have been informed (on February 8) that the standards did not go into effect as scheduled on February 6. The future of the standards is apparently uncertain.

The 1977 Supplement to the Uniform Building Code includes a new Appendix Chapter 53 entitled "Energy Conservation." This chapter deals with exterior building envelopes and mechanical and electrical systems.

Our annual Technical Development Seminar, "Operation Retrofit," will start on Tuesday evening, March 29, and will continue for four consecutive Tuesday evenings. Put it on your calendar now and enroll promptly when you receive your application.

Also plan to attend our Region X CRC (Chapters Regional Committee) meeting in Vancouver, B.C., on May 19 through May 21.

"What Does It Take To Be A Successful Manager" if the topic of what looks like a good \$30 seminar to be put on at the Spring Institute of the American Society of Industrial Engineers in Berkeley on March 25. For additional information write to: Program Chairman, 1977 Spring Institute, 123 Kathy Ellen Drive #B-3, Vallejo, CA 94590.

CARL H. JORDAN, PRESIDENT

ASHRAE FIELDTRIP ATTENDANCE

February 3, 1977

Members:

- | | | |
|---------------|----------------|----------------|
| Gene Valerio | Walt Schneider | Lew Pollock |
| Doug Daniels | Vic Bach | Harry Ajmani |
| Clay Bentley | Mory Laks | Don Bryant |
| Clyde Bentley | Roy Formby | Tom Gilbertson |
| Steve Sprague | Robert Carter | Jim Holden |
| Roy Gifford | Dick Frenzel | Dick Glumac |
| Mike Huggan | Jim Curtner | Roy Henderson |
| Richard Gee | Jack Knifton | D rt Rinefort |
| Ken Tong | Tom White | Bill Schultz |
| Carl Jordan | Jim Nemechek | George Wilson |
| Peter Johnson | Wayne Kin | Bob Linford |
| Paul Jay | Jerry Yafee | Dick Schnert |
| Jack Palmer | Ted Georgio | Dick Charles |
| Bob Judd | Abe Mendoza | |
| Adolf Makaruk | Abraham Bechar | |

Guests:

- | | | |
|---------------|----------------|--------------------|
| Mary Valerio | Darrin Scanlon | Brandis Johnson |
| Nina Bentley | Otis Gentry | Jennifer Palmer |
| Doris Bentley | Steve Yafee | Sam Chun |
| Dennis Gee | Linda Yafee | Justin Rinefort |
| Carol Gee | Ron Yafee | Barney Speckman |
| Herbert Lee | Steve Georgio | Bill Walters |
| Bev Bach | Mike Algan | Bob Hatch |
| David Bach | Ricky Holden | Bob Fratini |
| Debra Galoway | Mimi Glumac | Adrian Sommerville |
| Brad Beach | Joe Petritsch | Juanita Gilbertson |
| Lyle Stearn | Chris Daman | Krista Gilbertson |
| Steve Formby | Alisa Wilson | Laurel Gilbertson |
| Sharon Formby | Rob Linford | Joseph Kofka |
| Dave Singh | Leroy Ericksen | |
| | John Monaco | |

EDITOR'S NOTE: The following minutes of the January 6, 1977 General Membership Meeting of the Golden Gate Chapter, ASHRAE, did not get published as scheduled in the February issue.

Presiding: Carl Jordan
 Call to Order: 7:45 PM
 Meeting Place: Engineers Club, San Francisco

1. Minutes of meeting of October 1976 and December 1976 were approved.
2. Following members were elected for the Nominating Committee:

- Jack Palmer
- Dick Charles
- Lew Pollock
- Dick Friedman
- Carl Jordan (Ex-Officio Member)

Continued on Page 4

MINUTES - GENERAL MEETING

February 3, 1977

...continued from Page 1

2. Carl Jordan moved that the members Eugene L. Valerio and Dick M. Glumac represent our Chapter at the CRC meeting. Motion was seconded and approved.
3. Mr. Jordan made the following brief announcements:
 - a) ASHRAE semi-annual meeting in Chicago, February 14-17, 1977.
 - b) CRC meeting in Vancouver, B.C., in May 1977.
 - c) Action by the San Francisco Board of Examiners relative to the L.L. Listing of the large mechanical equipment.
 - d) Status on State of California "Title 24, Energy Conservation."
4. Don Bryant handed out the new ASHRAE brochures for the promotion among student groups on careers in our industry.
5. Jim Holden made an announcement for Pete Filios that the tennis and golf tournament could not be arranged at the same location, and will probably have the usual golf tournament only.
6. Gene Valerio introduced the PG&E guide for the field trip and briefed the audience on the features of the power plant. The introduction included:

The slide presentation of the Potrero Plant with equipment sections, schematic drawings and diagrams. The power plant consists of four units with the main turbine drive being the jet engine of Boeing 707, modified for stationary use. The plant was built to run short periods of time during peak demand. The slides also demonstrated sound treatment, close-up shots of component parts, fuel preheaters, control units, startup and cost-down procedures.

After a brief question and answer period, the members and guests boarded the busses for a short ride to the PG&E Potrero Plant.

7. Several smaller groups were escorted by the PG&E guides to various points in the plant. First to the main control room located in the old steam plant, then, to each of the four jet turbine plants. At each location a different feature of jet turbines was started up culminating the entire field trip with an actual run of the power plant.

Respectfully submitted,
 D.M. GLUMAC

MINUTES - GENERAL MEETING

...continued from page 3

- k) Economizer cycle can also be adapted to the DAEC equipment.
- l) Example of a restaurant application: pre-cool the OSA--very beneficial due to the large column of the OSA, especially beneficial to the kitchen comfort condition of 82° FDB at 45% RH.

Condenser air can be also precooled to make it more efficient. EER improved from 7.4 to 14.9.

Discussion:

Karl Guttman questioned the static pressure tradeoff and high EER.

Bob Voelz questioned fire and smoke rating. Answer: none at this time. NFPA is recommending the smoke and fire dampers to protect the equipment.

Question: Waterside life expectancy due to the hard water and dirty air on the outside?

Answer: Use chemical treatment similar to the closed circuit cooling tower.

Dirt is usually deposited in the bottom of the pan and disposed of by occasional draining of the pan.

Submitted by,
D.M. GLUMAC, SECRETARY

* * *

MEETING ATTENDANCE March 3, 1977

Members:

- | | |
|-------------------|----------------------------|
| Reid Chappell | County of San Mateo |
| Arnold Bletnitsky | B&A Engineers, Inc. |
| Dave Attard | California Hydronics Corp. |
| H.S. Huddleston | Columbia Mechanical |
| Nick Dann | Edward B. Ward & Co. |
| Dick Charles | Charles & Braun |
| Edward Long | Honeywell |
| Bob Judd | Montgomery & Roberts |
| Gene McCabe | Western Plumbing & Heating |
| Roy A. Skover | Lennox Industries, Inc. |
| Jim Nemechek | Air Filter/Control |
| Harjinder Ajmani | Skidmore, Owings & Merrill |
| Tom Gilbertson | L&H Air-Co |
| Roy G. Anderson | City College of S.F. |
| Don Bryant | U.C. Extension |
| Tom Namberumal | Kasin, Guttman & Assoc. |
| Dick Porter | G.J. Yamas Co. |
| Charles Gillet | G.J. Yamas Co. |
| Bob Swezey | Air Filter/Control |
| K. Guttman | Kasin, Guttman & Assoc. |
| Michael Huggan | Moniton Technic Inc. |
| Frank Mayhew | G.J. Yamas Co. |
| Dart Rinefort | Glumac & Assoc. |
| Bill Schultz | Powers Regulator Co. |
| Mike Nomi | Hussmann Refrigeration |
| Lou Pietrelli | Hussmann Refrigeration |
| Howard Friesen | G.J. Yamas Co. |
| Bob Carter | Keller & Gannon |
| Jim Breese | J.L. Breese |
| Tom Campbell | Owens Corning Fiberglas |
| Gus Gendler | G.L. Gendler & Assoc. |
| Robert Voelz | Bentley Engineers |
| Walter Roos | Kaiser Engineers |
| Medford Schwarz | Southern Pacific Co. |

...continued

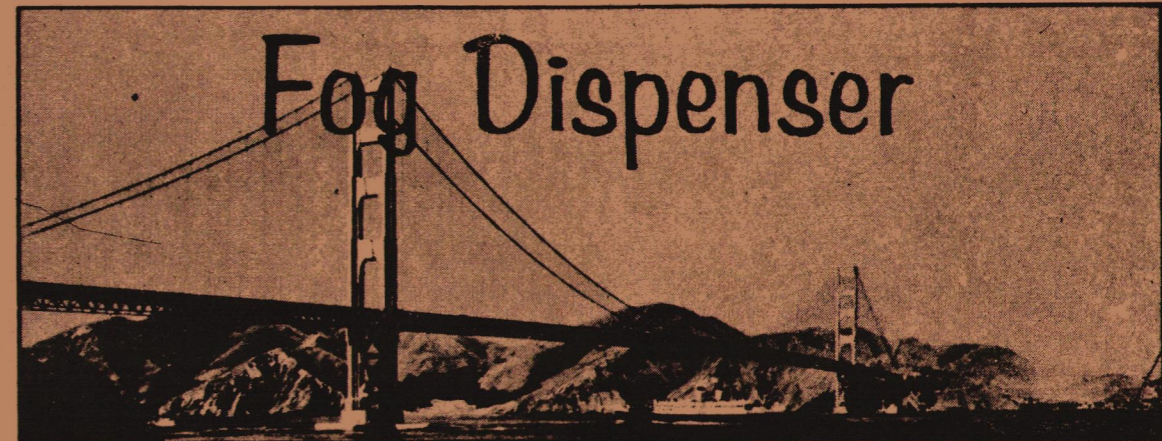
- Pete Knezevich
- Tom Molinaro
- Rich Leao
- Jack Zarour
- Wei Lin Hsia
- Kaz Inouye
- Richard E. Gee
- Karl F. Tulp
- George N. Aronovsky
- Tom White
- Joe Sardner
- Jim Witharm
- Hank Shastany
- Ed Mereno
- Paul T. Jay
- P. Scheunert
- B. Schneider
- D. Meissner
- S. Tarnoff
- Leo Bus Pumphrey
- S. Tarnoff
- Leo Bus Pumphrey
- Hasan Burney
- Gerry de Reus
- Chuck Kopf
- Walt Schneider
- Earl Carrier
- Pete Filios
- Roy Gifford
- Steve Sprague
- Allen Wicks
- Max Wolff
- Gene West
- Sam Yamoto
- Michael Rubio
- Gene Valerio
- Dave Rifkin
- Rod Kaida
- Dick Frenzel
- Dick Glumac
- C. Jordan
- Gene Volerio
- J. Paliner
- L. Pollock
- T. Gilbertson
- R. Phillips

Members:

- Ed Beeching
- Mak Takahashi
- Ed Brady
- Gay Yamagiwa
- Dick Bishop
- Charles McGough
- Gordon Goodding
- Erik Ahrens
- John Lento
- Peter Hartnell
- H.G. Karrer
- Gene Bettencourt
- Dante M. Quijano
- Ross M. Sherrill
- W.M. Kirkman
- Howard Procie
- Vern Miller
- Neil Eskra
- John Carnohan
- Dick Bishop

- Industrial Power
- Carrier Air Conditioning
- Norman S. Wright Co.
- Johnson Control
- Kasin, Guttman & Assoc.
- Kasin, Guttman & Assoc.
- Bechtel Power Corp.
- Edward B. Ward & Co.
- Aronovsky & Assoc.
-
- Aladdin Heating Corp.
- Fraser & Johnston Co.
- Westates Pacific
- HGP
- S.F. International Airport
- Bechtel Inc.
- Ilg Industries
- FACC
- Allied Air Products
- University Mechanical
- Allied Air Products
- University Mechanical
- Bounaccorsi & Assoc.
- Mech. Maint. & Serv. Corp.
- Belilove Co.-Engineers
- Kasin, Guttman & Assoc.
- Consultant
- Flame Air
- Vann Engineering
- Linford Air & Refrig. Co.
- SMACNA
- Dill & Sederberg
- Edward B. Ward & Co.
- Keller/Gannon
- G.J. Yamas Co.
- Air Filter/Control
- Marina Heating & Air Cond.
- Edward B. Ward & Co.
- Edward B. Ward & Co.
- Glumac & Webster
- SOM
- Air Filter
- Cal Hydronics
- Trane
- L&H Air Co.
- Kennedy Engineers

* * *



GOLDEN GATE CHAPTER  ASHRAE

VOLUME XVI NO. 7

APRIL 1977

MEETING ANNOUNCEMENT

The seventh meeting of the Golden Gate Chapter for the 1976-77 year will be held at the Engineers Club on the 16th Floor of the Hong Kong Bank Building, 160 Sansome Street, San Francisco on Thursday, April 7, 1977. The Social Hour will begin at 5:30, with dinner at 6:45 PM.

APRIL PROGRAM

Kevin Dowling, Chairman
Arranged by the Energy Conservation Committee

Subject: APPLICATION OF HEAT RECOVERY WATER CHILLERS

Speaker: Roc Burrell, District Sales Manager, York Division of Borg-Warner, Los Angeles

Mr. Burrell is very well-informed on this increasingly important energy conservation method. He will cover reciprocating and centrifugal chillers in both single and two-condenser arrangements, when to use storage, control and operation, design parameters, and selecting optimum temperatures for cost effectiveness. Lastly, he will give us examples of actual systems now in operation.

* NOTICE * NOTICE * NOTICE * NOTICE * NOTICE *

THERE WILL BE A RAFFLE OF THE RETURNED RESERVATION CARDS! AND THE ONE PICKED WILL RECEIVE A FREE DINNER FOR THAT NIGHT'S MEETING. SO SEND IN YOUR RESERVATION CARDS EARLY!

PLEASE SUPPORT YOUR WORKSHOP FUND!

This year our goal is a contribution from 100% of membership in addition to the gratefully accepted help of our Industry friends. In order to expedite the process it will be a great help if you will bring your check or cash (receipts available for tax credit) to this month's meeting.

Checks should be made out to:

GOLDEN GATE ASHRAE WORKSHOP

If you are not planning to attend this month's meeting, please mail your contribution to:

Mr. Vic Bach, Workshop Chairman
c/o Western Plumbing & Heating
600 Treat Avenue
San Francisco, CA 94110

PLEASE NOTE: NO GENERAL MEETING IN MAY

As is customary, we will hold our Annual Social in May, and therefore there will be no General Meeting at the Engineers Club.

HONOR ROLL

MARLEY COOLING TOWER CO.

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94105, 495-4550.

1976 - 1977

OFFICERS

Carl H. Jordan President
Eugene L. Valerio Vice President
Dick M. Glumac Secretary
Thomas A. Gilbertson Treasurer

BOARD OF GOVERNORS

James M. Holden
Bob Phillips
Jack A. Palmer



PRESIDENT'S

CORNER



CARL H. JORDAN

Dear Members:

The State Title 24 Energy Conservation Standards for New Non-Residential Buildings are still up in the air. However, it is proposed to amend the wall and roof envelope constraints from requirements to recommendations. Any interested persons may submit written or oral comments at a hearing on March 30, 1977, at 10:00 AM, Room 620, 111 Howe Avenue, Sacramento. I encourage interested persons to do so--pro or con.

I'm really looking forward to the program at our next chapter meeting: Heat Recovery from Water Chillers. I expect to see an increase in such applications in California in the future.

Have you ever seen a more transient time in our industry? Energy codes, energy availability, energy costs, life safety codes, seismic codes, the use of computers, cost inflation, new product development, solar energy, and changing attitudes of clients and builders. Keep this in mind when you read the next two paragraphs.

When you are contacted to contribute to the Society's Research Program, please do so liberally. Most of us derive our livelihood applying the results of such research to our projects. Through our Research Program we are better able to keep up with the demands placed upon us.

Also please respond graciously to our own educational programs at Cal Poly and City College of San Francisco. These programs are of proven value to the students and to our industry.

Dates to remember: SEMINAR - MAR 29, APR 5, 12 & 19
SOCIAL - MAY 7
CRC - MAY 18-21
GOLF - MAY 27
TENNIS - JUN 3

CARL H. JORDAN, PRESIDENT

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible dates that copy for the FOG DISPENSER can be in the editor's hands:

Meeting Date	Copy Deadline
7 APR 1977	21 MAY 1977
7 MAY 1977	18 APR 1977
2 JUN 1977	16 MAY 1977

KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chairman:
Jim Nemechek415/871-6808

or Committee Members:
Chuck McLaughlin415/326-9115
Bob Phillips415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
FOG DISPENSER
337 Roebing Road
So. San Francisco, CA 94080
(415) 873-1660

MINUTES - GENERAL MEETING

March 3, 1977

Presiding: Carl Jordan
Call to Order: 7:30 PM
Engineers Club
San Francisco, CA

1. January 6, 1977 - Minutes

Corrections:

- a) Dick Charles was standing in for Dick Friedman.
- b) Tom Campbell's name to be added to the list of nominations--as the new member to the board.

2. Minutes of the February meeting:

- a) Correction LL to read UL.
- b) Approved as corrected.

3. Motion was presented and seconded to close the nominations. Unanimously approved by the membership. Carl Jordan instructed secretary to issue the ballot and mail it to membership 15 days prior to next general meeting.

Announcements by Carl Jordan:

4. Pre-meeting workshop next meeting: was scheduled for meeting of March 3, was cancelled and is to be scheduled April 4.

Title 24, "Energy Conservation" Report:

- a) The Chapter will inform the members on the public hearings.
- b) Special mailing will be made to the group, interested in attending the hearings.
- c) Allen Wicks will send the information on the meetings to Carl Jordan.
- d) Bob Voelz informed members of the status of the existing regulation: the proposed inclusion of the performance standards and budget members in BTU/Hr./Sq.Ft.

6. CRC 1978: Tom White is the Chairman.

7. About 15 members attended the Semi-Annual Meeting in Chicago.

8. CRC 1977: Send items to E.L. Valerio so they can be presented to the CRC meeting in May.

9. Annual Social date: May 7, 1977 - Bay Cruise.

10. Pete Filios reported on Golf Tournament, June 3 at Crystal Springs or Green Hills (not decided on the location).

11. Tennis Tournament: June 3 at the San Francisco Tennis Club.

12. Annual Seminar: "Operation Retrofit" starting March 29.

Gene McCabe: (for Vic Bach) Next Fog Dispenser will ask for contributions for Cal Poly and San Francisco City College--urged all members to donate \$5.00 to \$10.00.

14. Carl Jordan urged support of National Research on behalf of Bernie Beckius.

...continued

15. Carl Jordan informed the membership regarding the "BAAPCD" and proposed involvement of Golden Gate Chapter in the activities of the BAAPCD. Asked for interested members to monitor the activities of the BAAPCD.

16. Tom White: Society interested in having the meeting in San Francisco, 1980s. Semi-Annual Meeting, this is contingent upon Yerba Buena mid project being completed with convention and show facilities.

17. Ed Marino announced the Helio-Science Institute, Exhibit in Palm Springs: dates: April 30 through May 4, 1977.

This is an international solar energy conference and exhibit.

18. Technical Presentations:

Dry Air Evaporative Cooling (DAEC) by: Neil G. Eskra, Marketing Manager, Vari-Cool Products, Division of H&C Metal Products.

- a) Basic premise of this novel approach is "energy conservation."
- b) This concept is ten years old. It is a very timely device. Able to accomplish air-to-air heat exchange with nearly total saturation.
- c) Slide presentation: indicated schematic diagrams showing outdoor air through wet outside tubes and indoor air through inside tubes.
Indoor air is cooled by sensible cooling.
- d) EER is very high compared to the compressor devices.
- e) Pressure drop: 0.51" WG thru inner tubes.
- f) Sample case: location San Francisco.

Load: 100 tons
44,400 CFM; ESHF = 0.92
latent load = 8 tons
room design = 78°F

g) By using the DAEC on the RA, will obtain 5.4 tons of cooling. Total air also passed through DAEC, with T 7.5°F, equal to 30 tons. Total benefit due to DAEC equipment is the savings of 35.4 tons of A/C so that the refrigeration equipment can be selected for 65.6 tons instead of 100 tons.

h) The energy conservation analysis: by the addition of 450 W of energy with EER = 144, we obtain 5.4 tons of cooling for OSA, and by adding 6720 W of DAEC equipment (EER = 53.5) produces 30 tons of cooling.

i) EER for the overall system is increased by 45% from 7.5 to 10.9 since compression equipment is reduced from 100 tons to 64.6.

j) Psychrometric chart demonstrated the thermodynamic cycle--assuming DB and WB temperature and calculated "free cooling" at different temperatures showed how the free cooling increases with the lowering of DB and WB outside.

MINUTES - GENERAL MEETING APRIL 7, 1977

Presiding: Carl Jordan
 Called to order: 7:40 P.M.
 Engineers Club
 San Francisco

1. Minutes of March meeting approved.
2. Gene Valerio announced the May meeting:
 Annual Social - May 7, 1977. All members should send their reservations to the treasurer.
3. Jim Holden announced the Golf Tournament - Date May 27, 1977.
4. Dave Rifkin announced Tennis Tournament - Friday, June 3, 1977 at the San Francisco Racquet Club.
5. Carl Jordan: Ashrae research donations to be sent to: Bernie Beckius.
6. Vic Bach: Cal Poly Workshop Fund - donations required.
7. CRC 77: Gene Valerio requested the item for the CRC to be sent to him.
8. Chuck Tarnoff, the Teller Committee Chairman reported the results of 1977-78 election for the officers:
 President: Valerio.....126
 Glumac..... 1
 Vice President: Glumac.... 129
 Dann..... 1
 Secretary: Gilbertson.....130
 Don Bentley..... 1
 Treasurer: Holden.....127
 Vic Bach..... 1
 Jim Breese..... 1
 Board Member: Campbell.....130
 Roy Gifford..... 1
 Past President: C. Jordan.....124
 J. Hellwarth..... 1

9. Seminar: Attendance 180 plus two sessions concluded.

Jim Taylor is doing an outstanding job.

10. Gene Valerio reiterated that there will not be a technical meeting next month due to the annual social.

11. Gus Gendler announced the status on the U. S. labeling and the S. F. electrical code:

Robert Levy, the Secretary of the Board of Examiners, is planning to invite one representative from each of the engineering societies and industry.

Technical Presentation

Kevin Dowling, the Chairman of the Energy Conservation Committee, made a brief introduction to the energy conservation in buildings and introduced the speaker for the technical presentation.

Speaker: Roc Burrell, District Sales Manager; York Division of Borg-Warner, Los Angeles

Subject: Application of Heat Recovery - Water Chillers

...continued

Mr. Burrell stated that the prerequisite for heat recovery is the high ratio between internal heat gain and high heat loss from the building, or domestic hot water requirement concurrent with the refrigeration load.

The slides presented standard refrigeration cycle flow diagram and block diagram showing the heat flow, chiller and cooling tower circuit.

Slide presentation also demonstrated the addition of the second condenser called heating condenser to the chiller which produces hot water for heating of the building. Also shown was the auxiliary heat source required when the heating load is greater than the refrigeration heat rejection.

Using the chillers for heat recovery increases the breakhorsepower per ton of refrigeration (BHP/TR).

Example:

LHW °F	BHP/TR	Increase in BHP/TR%
95°	.660	Base
110°	.845	28
120°	.975	48

The graph presented the relationship between the head of efficiency versus compressor capacity.

xx

To allow efficient operation below the 50% cooling load, the following methods may be used:

1. Speed control
2. Hot gas bypass
3. Reduce leaving hot water temperature

Control diagram demonstrated the control components controlling the system of chiller-condenser under various conditions of cooling/heating load by vane rotation.

Better method is obtained by using the multiple chiller units. Most economical operation with two machines is obtained when high temperature unit is used during the winter cycle.

Slide presentation showed heat recovery water chiller is 500 TR and 1000 TR units.

Discussion

Prices of heat recovery chillers is approximately 40% higher than the standard unit.

No data was available on economics of the application and the payback period.

Compiled by: DICK M. GLUMAC, SECRETARY

* * *

ROSS CHAMBERLAIN

It is with sadness that we announce the passing of our member Ross Chamberlain.

The members and directors of the Golden Gate Chapter of ASHRAE wish to extend their deepest sympathy to Mrs. Chamberlain.



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI NO. 8

MAY 1977

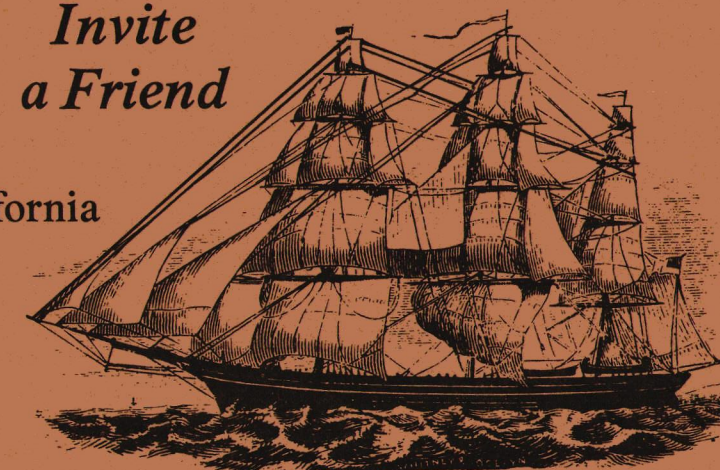
Ahoy Mates

Contact: GLEN MANTOANI or JERRY KECHTER
 Tel: (415) 861-6353 Tel: (415) 467-8680

GOLDEN GATE CHAPTER
 ANNUAL SOCIAL:
**A NIGHT ON
 SAN FRANCISCO BAY**

*Invite
 a Friend*

- Date:* May 7, 1977
Place: Pier 43½
 San Francisco, California
Time: 6:45—11:00 PM
Dress: Nautical Attire
 (bring warm coat)



FOOD and DRINK • No Tickets at Boat

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94105, 495-4550.

1976 - 1977

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Eugene L. Valerio Vice President
Dick M. Glumac Secretary
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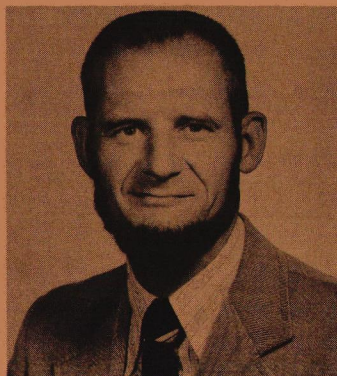
BOARD OF GOVERNORS

James M. Holden
Bob Phillips
Jack A. Palmer



PRESIDENT'S

CORNER



CARL H. JORDAN

Dear Members,

How many of you remember the Air Conditioning Society of San Francisco that existed prior to 1942? This group apparently suspended its activities on 9/16/42 "...in view of the growing strength of the local chapters of the American Society of Heating and Ventilating Engineers and the American Society of Refrigerating Engineers, which have to a considerable extent absorbed previous membership of the Air Conditioning Society..." The membership included such names as Clyde Bentley, Bill Cockins, Reg Cushing, Earl Fanning, R.B. Holland, Neil Peterson, James Scatena, E.B. Ward, Tom White and many other of our friends.

California Title 24 energy regulations are still pending. The State Energy Commission is trying to develop an energy budget performance standard by July 1, 1977, which would take effect at the earliest on January 1, 1978. In the meantime, however, they have changed the envelope constraints in the previously proposed regulations from "recommendations" back to "requirements" --but these regulations are not in effect at this time.

Our Technical Development Seminar is a success thanks to Chairman Jim Taylor and the many other members who are helping. The enrollment of 180 persons should yield a gross income of \$5,400.

Don't forget the Chapter Social on May 7--nor the CRC Meeting in Vancouver on May 18-21.

I have been informed that our Research and Scholarship fund drives are progressing satisfactorily, but we are still short of our goals. Please contribute to both. Contact Bernie Beckius regarding Research, and Vic Bach regarding Scholarships.

See you on the boat on May 7.

CARL H. JORDAN, PRESIDENT

COPY DEADLINE

In order to meet our publication dates, we have established the following as the last possible dates that copy for the FOG DISPENSER can be in the editor's hands:

Meeting Date	Copy Deadline
7 MAY 1977	18 APR 1977
2 JUN 1977	16 MAY 1977

KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chairman:
Jim Nemechek415/871-6808

or Committee Members:
Chuck McLaughlin415/326-9115
Bob Phillips415/362-6065

MAIL OR PHONE NEWS TO:

Nick Dann, Editor
FOG DISPENSER
337 Roebing Road
So. San Francisco, CA 94080
(415) 873-1660

MEETING ATTENDANCE

April 7, 1977

Members:

- | | |
|-------------------|----------------------------|
| Bill Schultz | Powers Regulator Co. |
| Bert Bomersine | Milton Meyer & Co. |
| Allen Wicks | SMACNA |
| Gino Colacchia | UMEC |
| Chuck Tarnoff | Allied Air Products |
| R. Fromm | IECO |
| Earl Carrier | Consultant |
| D. Pal Singh | IECO |
| Henry A. Wolpan | Eagleson Engineers |
| Richard Scheunert | Bechtel, Inc. |
| Robert Voelz | Bentley Engineers |
| Harjinder Ajmani | SOM |
| Abraham Bechar | SOM |
| Sherman Brown | York |
| Kevin Downing | Bentley Engineers |
| Carl H. Jordan | SOM |
| Bob Phillips | Kennedy Engineers |
| Dick Glumac | Glumac & Webster |
| Jim Holden | Marinways, Inc. |
| Gene Valerio | Air Filter/Control |
| Kaz Inouye | Kasin, Guttman & Assoc. |
| Dave Rifkin | Marina Air Conditioning |
| Berry Yaffe | Tempco Equipment Co. |
| Jim Breese | J.L. Breese |
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| Hendrik J. Mouw | Keller & Gannon |
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| Wei Lin Hsia | Kasin, Guttman & Assoc. |
| H.S. Huddleston | Columbia Mechanical |
| Dick H. Fujioka | Consulting Engineer |
| Joe Petritsch | GSA |
| D.C. Bryant | University Calif. Ext. |
| Dick Frenzel | Edward B. Ward & Co. |
| Rich Wells | Montgomery & Roberts |
| John Lento | Kasin, Guttman & Assoc. |
| K. Guttman | Kasin, Guttman & Assoc. |
| R.F. Giovannini | Thermal Mechanical |
| Bob Swezey | Air Filter/Control |
| Bob Roos | Mechanical Consulting Co. |
| Dick Friedman | Engineered Air Systems |
| Jerry Kasin | G. Kasin |
| Howard Friesen | G.J. Yamas Co. |
| Leo Dwyer | Ralston & Dwyer |
| Lewis S. Pollock | Trane Co. |
| Don L. Nurisso | Bechtel, Inc. |
| R.J. Krauthamer | Ilg Industries |
| Roy Gifford | Vann Engineering |
| John Lewis | Sverdrup & Parcel |
| Bil Jeppson | Nalco Chemical |
| Robert Braun | Charles & Braun |
| Clyde Nelson-Reia | Clyde Equipment Co. |
| Dick Charles | Charles & Braun |
| Roy A. Skover | Lennox Inc. |
| Don Dickson | Serendipity Travel |
| Ray Wolford | MSA |
| Ward Clark | Marley Co. |
| Hank Shastany | Westates Pacific |
| Pete Tidmarsh | York |
| Ihsan H. Ali | Ali & Assoc. |
| Kenneth Hill | Kaiser Engineers |
| Dart Rinefort | Glumac & Webster |
| Vic Bach | Western Plumbing & Heating |
| John May | Sverdrup & Parcel |
| Gil Lord | HCP |
| Ed Menro | Hess, Greiner & Pollock |
| Pete Knezevich | Ind. Power In. |
| Jack Zaroor | Johnson Controls |
| Laurik Ingran | Material Survey |

Guests:

- | | |
|-----------------|----------------------------|
| Pat Geis | Engineered Air Systems |
| Mak Takahashi | SOM |
| Roc Burrell | York |
| Yee Huey | Kasin, Guttman & Assoc. |
| Kreyne T. Sato | Miles N. Suda & Assoc. |
| Jeff Hughes | Kasin, Guttman & Assoc. |
| Ralph Craig | Thermal Mechanical |
| Richard R. Grey | Bechtel, Inc. |
| Kenneth Yu | Charles & Braun |
| Don Anderson | Lafayette Engineers |
| George Lim | Glumac & Webster |
| Paul Niess | Western Plumbing & Heating |
| Jack Seely | Kaiser Foundation Hospital |

ANNUAL SOCIAL

Ahoy, Mates!

The Annual Social - A Night on San Francisco Bay - will be on Saturday evening, May 7.

Be ready to cast off from Pier 43½ at 6:45 PM, but be sure to have reserved a space and have your tickets by May 3 - NO TICKETS AT THE BOAT!

There's still time to call Jerry Kechter at 467-3751 or Glen Mantoani at 861-6383.

Bring a friend and a warm coat. Or a warm friend and a coat.

* * *

PLEASE NOTE: NO GENERAL MEETING IN MAY.

5th ANNUAL GREAT GOLF DAY

Remember, hackers, duffers and other species of the green glades - Friday, May 27 at Crystal Springs Golf Club, Burlingame - the 5th Annual ASHRAE Golf Bash!

Green fee: \$10.00. Dinner: \$10.00. Prizes, etc.! RESERVATIONS MUST BE MADE IN ADVANCE. Contact Pete Filios at 588-8437.

TENNIS TOURNAMENT

For all you other species (banded knee-scrappers, etc.)--YOUR day will be June 3 at the San Francisco Tennis Club. Contact Dave Rifkin at 786-3500.

GET INVOLVED - IT'S VOLUNTEER TIME!

Your Chapter needs your personal involvement more than ever during its next year (July 1977 through June 1978). In addition to regular Chapter activities, we will be hosting the Chapter's Regional Committee Conference (CRC) to be held May 10 through May 13, 1978

CRC '78 will be attended by delegates from each chapter in our region, regional chairmen, national officers, and any other society members who wish to come. Included are business meetings, technical sessions and social programs. Many members bring their wives and children because the conference is designed for both work and play--and there is plenty of both.

Tom White has graciously accepted the General Chairmanship of CRC '78 which will be held at the Hyatt Regency Embarcadero. Tom needs your help for his committees; ultimately every member must be involved in some way in this conference. Choose your committee on the enclosed sheet!

Meanwhile, our Chapter must function normally, and your preferences for regular Chapter committees should be indicated on the other survey sheet enclosed. Your Board must start immediately on planning for next year, and we ask that you return the volunteer survey sheets as quickly as possible.

DATES TO REMEMBER

- | | |
|-----------|---------------------------------------|
| May 7 | - Social, Reservation deadline May 3! |
| May 18-21 | - CRC, Vancouver |
| May 27 | - Golf |
| June 3 | - Tennis |