

## GUESTS AT NOVEMBER MEETING

Victor E. Martinez  
Howard Daughinee  
Dale Blanton  
Dart Rinefort  
Chas. E. Gorwood  
Bob Nou  
Don Scott  
Philip Chien  
Henry Page  
Bill Dougherty  
Larry D. Compton  
Don Levensaler  
Leo DeWinter  
Milo Sands

C. S. Hardeman  
Jenkins Bros. Valve Co.  
Fluor Products Co.  
Carrier  
Keller & Gannon  
Assoc. Air Bal  
Calif. Packing  
Keller & Gannon  
Simpson, Stratta & Assoc.  
U.S. Navy, San Bruno  
C.I.R.C.O., Inc.  
P. G. & E.  
Water Treatment Corp.  
Kaiser Engineers

Gil Mines  
Mike Cory  
Keith Alexander  
Mal Cammisa  
Perry S. Gujral  
Warren J. Polleck  
Dave Wilson  
Joe Parisi  
Harley Driessen  
Robert Yonoirtz  
M. C. Sullivan  
John McKay  
Alan H. Shadgett  
Fred Kaiter

Ralston & Dwyer  
Vann Engineering  
York Corp.  
Elect. Engineering  
S. O. M.  
U.S. Post Office (Eng. Br.)  
Pacific Pumping Company  
Fereday Mech.  
Keller & Gannon  
Simpson & Stratta  
Corps. of Engineering  
Fluor Products Co.  
Westinghouse  
Honeywell - Mpls.

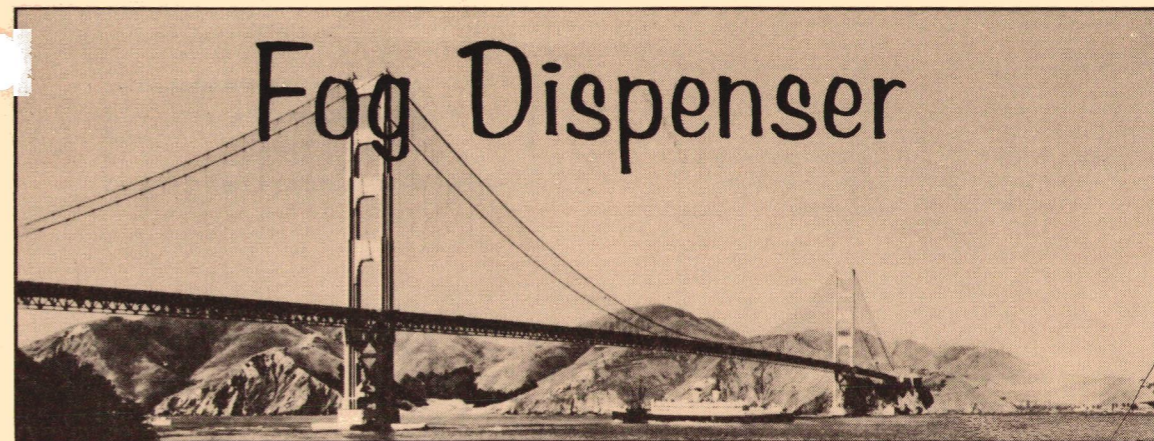
## MEMBERS AT NOVEMBER MEETING

D. E. Keown  
Clans D. Speier  
Harry Gaffney  
Gene Hughes  
Richard E. Gee  
Gene Valerio  
Max Wolff  
Peter S. Filios  
Frank Olsen  
Dick Friedman  
Irving Alger  
Charlie Butcher  
Jos. E. Murray  
Jack Kniveton  
Gus Gendler  
Herb Duncan  
Bob Montgomery  
L. Shea  
Phil Beggs  
Bob Beggs  
Lou Gramaglia  
Gerry Yaffe  
Darrell Robinson  
Ben Quinn  
John A. Lord  
Thos. E. Brewer  
Gene DeWree  
Ray Herman  
Bob Tuck  
Joe Beck  
Al West  
W. G. Gebbie  
Ron Wilson  
Clyde E. Wolters  
Ed Akizuki  
Steve Wei  
D. E. McLeod  
John Werner  
Coe Kellogg  
Jim Curtin  
Donald R. Dickson  
Chuck McLaughlin  
Max Jones  
Howard Friesen  
Bob Brunner  
Bob Phillips  
Bennett K. Tow  
Fred Ezpey  
Ray Wolford  
Don Locke  
Dick Fujioka  
Miller L. Clarke

C. S. Hardeman, Inc.  
Northstate Distributing Co.  
C. S. Hardeman, Inc.  
Scott Company  
Bechtel Corp.  
E. B. Ward & Co.  
Dill & Sederberg  
Flame Air, Inc.  
Frank A. Olsen Co.  
Engineered Air  
G.M. & T.R. Simonson  
Johnson Service Co.  
Jos. E. Murray & Assoc.  
Norman S. Wright  
G. L. Gendler & Assoc.  
Flame Air, Inc.  
Montgomery & Roberts  
Shea Equipment Co.  
Paul W. Beggs & Son  
Paul W. Beggs & Son  
Midstate Mech.  
Tempco  
Kaiser Engrs.  
H. H. Robertson Co.  
Climate International  
Calif. Hydronics Corp.  
Fisher Governor  
RMK - BRJ  
Tuttle & Bailey  
Atlas Heating  
Colan Heating  
York Corp.  
  
San Francisco  
Norman S. Wright & Co.  
M. Rosenblatt & Son, Inc.  
Simpson, Stratta & Assoc.  
Trane Co.  
A. R. Peterson & Sons  
Philco  
Hess, Greiner & Pollard  
American Glower  
Scott Co.  
Barber - Colman  
Continental Service Co.  
Low & Phillips  
U. S. Navy, San Bruno  
ILS Industries  
Materials Survey  
C. B. Engineering  
Rogers Engineering Co.  
G.M. & T.R. Simonson

Rudy Pribuss  
Richard W. Mitchell  
Sheldon Doolittle  
Bob Anderson  
Terry Scavone  
Dave Rifkin  
Karl Baldwin  
Art Von Wronski  
Jack Sprott  
Clyde Wilson-Reid  
Arel W. Berrier  
A. L. Mudica  
John Rhoads  
Dan Marelich, Jr.  
Tom Douglass  
Wanda Berry  
Lewis S. Pollack  
Don Hoffine  
C. D. Williams  
K. Cullman  
Per Sonander  
Charles E. Harden  
  
Jack T. Chamberlain  
Ken Lloyd  
Lyle Schuelke  
Jim Parsons  
Tom White  
Tom Higashoca  
F. M. Palacios  
Pete Knezevich  
Mike Reichlin  
Art Ciappone  
Dick Hamilton  
John Brose  
Jim Breese  
Ken Mirov  
John Capitolo  
Carl H. Jordan  
Jim Dana  
Tom Conroy  
Jack A. Palmer  
Dick Charles  
Jack Koop  
Wayne H. Womex  
Jim Williams  
Mike Bekedam  
Roger Chesebro  
Bob Boyer  
Jim Witharm  
Bud Ferry  
Tom Gilbertson

C. R. Reichel Engineering  
Circo  
C.I.R.C.O., Inc.  
Western Asbestos  
A.R. Peterson s/m  
Cooling & Heating Engineers  
Ramsey & Assoc.  
Electronics Corp. of America  
Ray Burner Co.  
Clyde Equipment Co.  
Berrier Sales  
H. G. P.  
Peerless  
Marelich Mfg. Co.  
Douglass Insulation  
Marelich Mfg. Co.  
Trane Co.  
Norman S. Wright Co.  
Sheet Metal Contractors  
Kain, Cullman  
Skidmore, Owings & Merrill  
Farr Co.  
  
Marelich Mfg. Co.  
Barber - Colman  
Kewanee Boilers  
Pacific Telephone  
American Blower  
Higash Associates  
U.S. Post Office (Eng. Br.)  
Combustion Utilities  
Pacific Pumping Company  
Pacific Pumping Company  
Monterey Mechanical Co.  
The Brose Co.  
C. A. Gillet Co.  
Trane  
Johns - Manville  
G. L. Gendler & Assoc.  
Rinco Engineering  
Clyde Equipment Co.  
California Hydronics Corp.  
Charles & Braun  
Fluor Products Co.  
Westinghouse  
Industrial Steam  
Industrial Steam  
Fraser & Johnston  
Honeywell  
Fraser & Johnston  
A. J. Bouey Co.  
Johnson Service



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI No. 3

DECEMBER 1966

PROGRAM CHAIRMAN: LARRY SHEA

The next Golden Gate Chapter meeting will be held at the ENGINEER'S CLUB NEW LOCATION IN THE HONG KONG BANK BUILDING, CORNER OF SANSOME AND PINE STS., San Francisco on December 1, 1966, Social hour will be at 5:30 P.M., dinner at 6:45 P.M.

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The above figures represent the manner in which the engineering firm of Kasin, Guttman & Associates contemplates designing its jobs. The symbols, of course, represent computer language. Computer use will supplement their normal design approach to buildings.

Mr. Zulfikar Cumali of Kasin, Guttman & Associates will apprise us of the blood, sweat and tears that he has invested for the last few years in devising a computer program. In the past this firm has used a computer in the selection of heating and cooling coils. Now they've tackled the problems of designing duct systems - low, medium and high pressure, single duct and double duct; take your pick. The intricacies of determining the proper approach in selection of computer in-put information, and the results to be obtained by the use of the computer, will be revealed to us. The up-coming consideration of load calculations on buildings and selections of systems is going to be covered briefly, too.

Like it or not, computers are creeping into our industry. They have application potential with respect to normal business procedures such as payroll, inventory control, etc. Whether you realize it or not, big brother is looking at you! Since your future will be affected, you owe it to yourself to receive a liberal education free of charge in what you'll be faced with.

### PRE-MEETING WORKSHOP

The topic for discussion will be "How Can Engineer's Specifications Be Improved?"  
Come and hear what complaints contractors and suppliers have and what the engineers have to say in answer. Come at 5:45 p.m. before the regular meeting.

DECEMBER ANGEL  
ENGINEERED AIR SYSTEMS

P.O. Box 1306

Richmond, California

Phone 234-9322

*Invoiced 2/16/67  
Pd*

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1371 - 15th Avenue, San Francisco, California 94122. LO 6-2740.

#### OFFICERS AND BOARD OF GOVERNORS 1966 - 1967

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Larry Shea \_\_\_\_\_ Vice President  
Robert Voelz \_\_\_\_\_ Secretary  
Richard Friedman \_\_\_\_\_ Treasurer

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George Aronovsky  
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Program \_\_\_\_\_ Larry Shea  
Attendance \_\_\_\_\_ A. L. Mudica  
Membership \_\_\_\_\_ Robert Tuck  
Finance \_\_\_\_\_ Dick Friedman  
Technical \_\_\_\_\_ Ken Mirav  
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Research Fund \_\_\_\_\_ John Brose  
Dance \_\_\_\_\_ Max Wolf

#### FOG DISPENSER STAFF

Editor \_\_\_\_\_ Pete Knezevich  
Staff Writer \_\_\_\_\_ Jim Booth  
Angel Procurement \_\_\_\_\_ Joe Murray

(From the Hoosier Pacesetter.)

#### THE OLD PHILOSOFUR

A man never knows if he likes bathing beauties until he's bathed one.

Women are like baseball umpires. . . they make quick decisions, never reverse them, and they don't think you're safe when you're out.

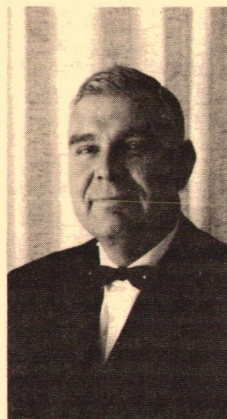
One of today's troubles is that there are so many people standing up for their rights who fall down miserably on their duties.

Hangover: Something that happens to a head that was not used the previous night.

One of the hardest secrets for a man to keep is his opinion of himself.

#### President's Corner

Arel W. Berrier



The attendance of 138 at our November meeting and the enthusiastic response to the subject substantiates a fact many of us have known for some time - namely, that the most interesting and well received meetings are those involving our own members.

The subject material on specifications was of prime importance to everyone and the panelists were top notch. Our program chairman is to be congratulated and I'm sure the high quality of meetings will be continued.

of meetings will be continued.

The National Headquarters has asked each Chapter to send them an article on their most interesting or eventful meeting. Plans are now underway to feature this November meeting on specifications as our most interesting. It should also be of great interest to anyone in the industry.

I am probably like a number of people in that I dislike making any premature disclosures for fear that something will go wrong. However, both the Bd members and I feel that we will have something positive to report on the Research Fund in the near future. John Brose and his committee are active in one phase, and a seminar program is now being developed. We are hopeful that our delegates to the Region X meeting in the spring will be able to make a presentation to the Research Fund from Golden Gate Chapter.

HIGASH ASSOCIATES have moved to new and larger quarters located at 1375 Sansome Street, San Francisco, California, Phone 986-5309. Congratulations to Tom Higashioka.

#### DUES

DELINQUENTS? Please pay your dues. Your dues must be paid in order to have your name listed in the 1967 ROSTER. The Roster goes to press in January.

#### MAIL OR PHONE NEWS TO:

Editor, Fog Dispenser  
% COMBUSTION UTILITIES INC.  
1485 Baysshore Blvd.  
San Francisco, California  
Phone: 467-9076

#### MINUTES - NOVEMBER 1966

The meeting was called to order at 7:45 P. M. by President Arel Berrier who asked for the introduction of members and guests. Thereafter, the minutes of the prior meeting were approved as printed in the Fog Dispenser. The identification badges were presented to those new members in attendance.

Joe Murray made a plea for future Angels for our Fog Dispenser.

Dave Rifkin urged all members to pay local dues so that the Roster can go to press as soon as possible. As of October 31st, 219 members had paid local dues out of the 287 listed in last year's Roster.

John Brose indicated that his committee had an initial meeting and had outlined a program for raising money for the Research Fund. Al Mudica stated there were 138 members and guests present. Dick Friedman reported only that the treasury was solvent at present. Bob Tuck indicated that members should apply for advancement in grade in ASHRAE. Thereafter, a short intermission was called.

Larry Shea, Program Chairman, introduced the guests on the panel discussion on "Specifications" by reading an excerpt from a letter written in the Seventeenth Century; the substance of the letter was that you get what you pay for.

The guests speakers made the following points:

Clyde Wolters, Mechanical Engineer with the City and County of San Francisco, spoke in favor of the open specification. He felt it afforded the most competitive specification which would give the client the most product in service for his money. He stated that the California Code requires an open specification and only permit a closed or proprietary spec when only one brand of product will fit or where products have to match existing equipment. If products or installations are intended for trial or experimental use, proprietary products are also permitted. Open specifications can list two or more names and ask for 'or equals'. He felt the only defect in the specification was that it usually makes more work for the engineer when it comes to evaluation of submittals.

Carl Jordan, Mechanical Engineer with G. L. Gendler & Assoc., spoke in favor of the closed specifications. He believes that a closed specification protects the client or owners interest better; that the owner gets a better job, but that a selling job has to be done on the owner or architect in order to point this out. He felt the closed specification did not always mean that one limits products to only one manufacturer; that frequently two or more pieces of equipment can be found of comparable quality, and that the specifications are limited only to those products which in the judgement of the engineer are of equal quality. The engineer can eliminate products or equipment that do not meet the criteria of quality but also direct them to those who afford good local service. He felt the latter was exceedingly important. It doesn't make any difference how good a piece of equipment is if engineering data, information, assistance, or service would not be forthcoming. In addition, he felt the job of design was easier on the consulting engineer since he knows pretty much before hand what is going to be used and can determine his space requirements, etc. ahead of time. He also felt there was benefit to the contractor because there was less confusion in the bidding process. It takes the guess work out of trying to figure out which of the many products the engineer might possibly accept. He felt a better final system would result from easier installation, better progress on the

job, and that the maintainability and performance of the equipment would normally be superior. The only disadvantage he found was that suppliers sometimes jack up prices.

Don McLeod, Mechanical Engineer with Simpson & Stratta, propounded his base bid and alternate type of specification. His base bid is really a closed type of specification and permits the engineer to design a good workable system around equipment he feels are top in quality and utility, and also has good local representation and service. By allowing for alternate bids in the use of other equipment, the supplier of the base bid equipment cannot jack up the price. Savings on alternates will be passed on directly to the owner and everybody's price becomes apparent. Don felt that the disadvantage of the open or even closed spec is that savings on alternates or substitutions go into contractors pockets. He felt his system allows for quick acceptance of the low bid from contractors whether the determination is made on base bids or alternates. The contractors have greater stability because they know what to bid on and it's less necessary to read between the lines as to what the engineer might accept. He felt this system was easiest on the engineer and that he did not have to evaluate substitutions. In fact, he does not even call for them if base bid equipment is used. He felt the job progressed more smoothly with the contractor, and that the engineer can give the owner the very best system possible with this type of specifications.

Chuck Gorwood, Mechanical Engineer with Keller & Gannon, spoke on performance or a prescription-type specification. He feels that engineers should go beyond closed type specifications by prescribing in detail how equipment should be made; the determination of gauges, size, weight, motors, bearings, capacities, etc. to achieve the finest performance possible with the lowest noise level practical. He feels that in the last twenty years the open type of specification has led to a deterioration of quality in all types of equipment. He particularly attacked the low quality of air handling units, and pointed out that he had had tests conducted on different types of construction to prove his point. He feels that his approach requires the engineer to make a much more detailed study of products, completely independent of manufacturers literature, ratings, and specifications. He feels the engineers must require the manufacturers to make tests and certify that they meet his standards of quality and the performance specified. He felt the only way to give the owner a better job was to insist that manufacturers make better equipment and demand better grades of workmanship, etc. from the contractors.

In the question and answer period that followed, one engineer from the floor indicated that the courts have legally decided that the mechanical engineer is solely responsible for the design and performance of the system and, therefore, it would behoove him to upgrade his specifications.

An informal poll was taken at the end of the meeting. By a great preponderance, the base bid and alternate type specification of Don McLeod's was favored; next the closed specification was chosen; third, the performance specification, and only two people out of 138 indicated favor with the open type specification.

The meeting was shut off by moderator, Larry Shea, at 10 P. M.

Respectfully submitted  
Robert Voelz Secretary

**GOLDEN GATE CHAPTER – 1966-67  
STANDING and SPECIAL COMMITTEES**

**MEMBERSHIP COMMITTEE:** Robert Tuck, Chairman; George Aronovsky; Robert Boyer; James Van Buskirk; Harley Hooker.

**PROGRAM COMMITTEE:** Larry Shea, Chairman.

**RECEPTION COMMITTEE:** Jack Palmer, Chairman; Lewis Long; Robert Beggs.

**TECHNICAL COMMITTEE:** Ken Mirov, Chairman; Tom Gilbertson; Lewis Pollock; Bill Barron; Douglas Kirby; Richard Gee

**ATTENDANCE COMMITTEE:** A. L. Mudica, Chairman; Mike Bekedam; Ray Herman.

**PUBLICITY COMMITTEE:** Ron Wilson, Chairman; Rodney Roberts; James P. Dana.

**FINANCE COMMITTEE:** Dick Friedman, Chairman; Carl Jordan; Pat Geis.

**EDUCATION COMMITTEE:** Roger Chesebro, Chairman; Siegmund Kulka, Bob Phillips; Bill Baker; Robert Braun; Jim Witharm.

**ROSTER COMMITTEE:** David Rifkin, Chairman; Joe Beck; Ed Leedom; Bennett Tow.

**ENGINEERING COUNCIL:** Robert Voelz, Chairman; Irving Alger; Charles Dombitsky; Chester D. Williams; Reid Chappell.

**RESEARCH FUND COMMITTEE:** John Brose, Chairman; Richard A. Charles; Charles Butcher; Ed Akizuki.

**DANCE COMMITTEE:** Max Wolfe.

**EDITOR – FOG DISPENSER:** Pete Knezevich, Chairman; Jim Booth.

**ANGEL PROCUREMENT:** Joseph Murray, Chairman.

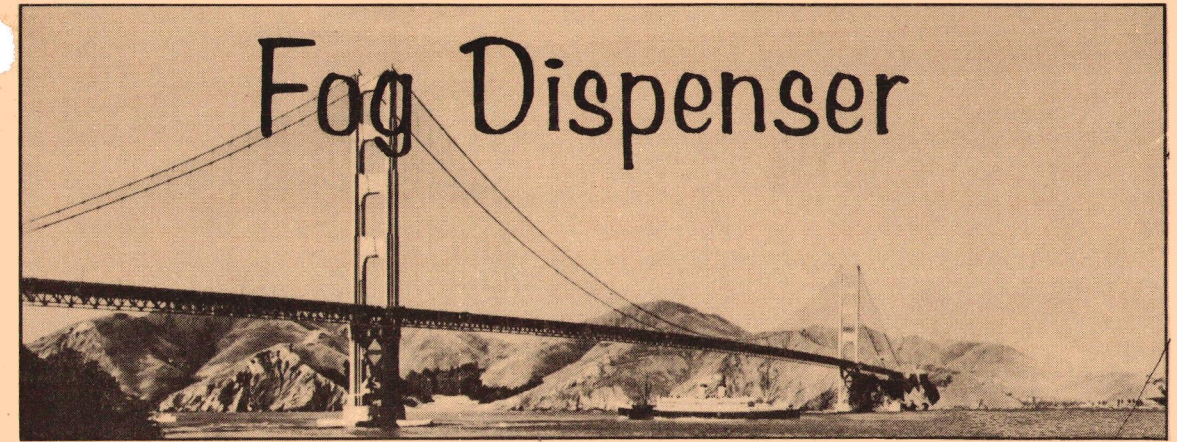
**REGION X DELEGATES:** Lawrence Shea, Bob Voelz.

**SUMMARY OF ASHRAE ANNUAL PROGRAM QUESTIONNAIRES**

		POOR	FAIR	GOOD	EXCELLENT	DID NOT ATTEND
October	Boiler Failures & Piping	3	11	20	6	27
November	Industry Problems	4	14	14	9	28
December	Proper Stack Design		6	16	12	35
January	Legal & Surety Problems		6	25	9	26
February	Cold Storage of Fruits	1	8	16	6	35
March	Integrated Air Distribution	18	8	12	5	25
April	Richmond Field Station	1	4	6	16	39
May	Air Balancing Panel	2	12	22	7	27
June	Luau & Dance		2	6	17	43
		YES	NO	NO COMMENT		
	In favor of continuing Annual Social Event	47	9	11		
	In favor of continuing Annual Field Trips	56	3	9		
	In favor of 10 week course in A.C.	32	19	5		

**GUESTS AT OCTOBER MEETING**

R. B. Ades	C. B. Engineering	Joe Pariss	Fereday Mech.
Don Noon	Robertshaw	Howard Smith	Marelch Mfg. Co., Inc.
Jim Schuster	Robertshaw	Dan Marelch, Jr.	Marelch Mfg. Co., Inc.
Duncan Kelly	G. M. Cooke Company	Tom Conroy	Clyde Equipment Co.
E. E. Featherston	Hantford & Steam Boiler	John Busch	Simpson & Stratta
William McCosh	Hantford & Steam Boiler	Philip Obrien	Keller & Gannon
C. B. Borch	Hantford & Steam Boiler	Harley Driessen	Keller & Gannon
Raymond Edwards	Linford Air & Refrigeration	Mike Cory	Vann Engineering
Ralph Wallace	Bentley Engineers	Al Tucker	Ray Burner Company
Don A. Olson	Westates Equipment Company	Allan W. Zensius	Electronics Corp. of America
Don Levensaler	Pacific Gas & Electric	Carson Woo	Charles & Braun
Charles Gorwood	Keller & Gaunon	Bob Lincoln	Vann Engineering
Dan Naughton	Hartford Steam Boiler	Martin Whitney	Vann Engineering
Bill Skidmore	Hartford Steam Boiler	Bob McGregor	Pacific Telephone
Bob Pedersen	Shea Equipment Company	T. A. Serpa	Westinghouse Electric Corp.
P. S. Gujral	Skidmore, Owings & Merrill	Ed Kaufman	U.S. Post Office Eng. & Facil
K. O. Alexander	York Corporation	Jim Bouick	American Blower
Bill Milligan	Robertshaw	Wayne Ketner	Burke & Co. Roto Aire
Charles J. Rosenberg	Keller & Gannon	John Fond	Descon Engineering
Ken Cederquist	The Payne Company	Zulfikar Cumali	Kasin & Guttman Association
Gerry de Reus	Yanow & Bauer		



**GOLDEN GATE CHAPTER**  **ASHRAE**

VOLUME XVI No. 2

NOVEMBER 1966

PROGRAM CHAIRMAN: LARRY SHEA

The next Golden Gate Chapter meeting will be held at the ENGINEER'S CLUB NEW LOCATION IN THE HONG KONG BANK BUILDING, CORNER OF SANSOME AND PINE STS., San Francisco on November 3, 1966, Social hour will be at 5:30 P.M., dinner at 6:45 P.M.

**SPECIFICATIONS – WHO NEEDS THEM?**

Come One, Come All, to the Specification Ball.

Who doesn't have some dearly held opinions on specifications? Are they too tight or too loose? Are they fair, and to whom? Are they clear or ambiguous? Should they be longer or shorter? Should they be open or closed? Discriminatory or non-restrictive? Or should they be eliminated altogether?

If you, or your Architect friend or Contractor friend have opinions, then by all means come to the November meeting. We have four of San Francisco's leading Consulting Engineers on a panel discussion to examine specifications. Our program is "My Favorite Specification – and Why!"

Clyde Wolters will discuss "The Open Specification – Or Equal". Carl J Jordan will explain the benefits of "The Closed Specification – No Equal". Don McLeod will promote "The Contract Bid – Add or Deduct". Chuck Gorwood will reveal his yen for "Performance Specifications". The panel will be moderated (poorly, we might add) by Larry Shea. A lively question and answer period is bound to follow, as 150 members point out to the panelists what's wrong with each of their stands. Bring that friend. He might have something to say. Or learn.

**PRE-MEETING WORKSHOP**

The subject we will discuss is "When a system does not work properly, to whom does the owner look to troubleshoot and pinpoint the problem?"

NOVEMBER ANGEL  
SHEA EQUIPMENT COMPANY

182 – 2nd Street

San Francisco, California

Phone 433-4890

*1 arranged 2/14/67*

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1371 - 15th Avenue, San Francisco, California 94122. LO 6-2740.

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Richard Friedman \_\_\_\_\_ Treasurer

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Staff Writer \_\_\_\_\_ Jim Booth  
Angel Procurement \_\_\_\_\_ Joe Murray

### President's Corner

Arel W. Berrier



It was certainly a pleasure to preside over our first meeting at the new Engineer's Club. I heard nothing but good reports on the arrangement, furnishings and service. Perhaps a new meeting place will renew our efforts in making this an even better year for Golden Gate Chapter.

The formation of a Code Committee, I feel, was an important step for our Chapter. The need for such a body has been apparent for some time to work with

different groups in our industry as well as code writing sections of the City and State. Bob Voelz has taken the initiative in the formation of this committee and I'm sure he would welcome volunteers and suggestions.

One of our members, Don Locke, volunteered to be Social Chairman for this year, and he would also appreciate volunteers and suggestions as to type of social, location, etc.

May I remind in closing to please write Pete Knezevich or myself, and voice your comments on order of business, program, or any other item that may be in the best interests of our Society.

A registered professional engineer, Mr. Bouillon was a member of the National Society of Professional Engineers and of the American Society of Mechanical Engineers. He was a Mason, a member of the Nile Temple (Shrine), the Rainier Club, the Seattle Yacht Club and the Outrigger Canoe Club, Honolulu.

During his 35 years as an engineer, Mr. Bouillon made many contributions to the heating, refrigerating and air-conditioning industry and to ASHRAE, both on a local chapter level and as a dedicated national officer. Surviving him are his wife, Louise R., his son Richard, two sisters, and a brother.

In accordance with the By-Laws of ASHRAE, William L. McGrath, former President-Elect, has assumed the Presidency. Mr. McGrath is Executive Vice President of the Carrier Air-Conditioning Company, Syracuse, N.Y.

#### MAIL OR PHONE NEWS TO:

Editor, Fog Dispenser  
% COMBUSTION UTILITIES INC.  
1485 Bayshore Blvd.  
San Francisco, California  
Phone: 467-9076

### MINUTES - OCTOBER 6, 1966

The meeting held at the Engineers Club was called to order by President Berrier at 7:40 p.m. Guests and visitors were introduced by their hosts.

President Berrier announced the recent death of Lincoln Bouillon and noted that flowers had been sent in the Chapter's name. A brief moment of silence was observed in honor of Mr. Bouillon's contribution to the Society and our industry.

Under old business, the minutes of the May 5 meeting were approved as published in the Fog Dispenser. President Berrier presented a past president's pin to last year's president, Gus Gendler. Bill Barron reported that the Audit Committee found the 1965-66 financial records to be in order and that as of June 30, 1966, the Chapter's net worth was \$1672.12 of which \$1.59 was in checking account, \$1556.53 in the savings account and \$114.00 in accounts receivable.

President Berrier introduced and passed out name badges to new members Leo Pumphrey, Jim Parsons, Henry Follenfant, Ed Dougherty, Carl Anders, F. Caplan, Hugo Mulder, Clark Ham, Ben Quinn and Sam Yamauchi.

Under committee reports, Bob Tuck, Membership Chairman, announced that we are still seeking new members and that a task force will be set up in January and February to canvas the engineering, contracting and supply offices in this area. Roger Chesebro, Education Chairman, indicated that we will continue our California State Polytechnical College Workshop again this year. Al Mudica, Attendance Chairman, asked that members be sure to return their attendance cards. We had 140 in attendance but only received 103 cards.

John Brose, Research Fund Chairman, reported that to date we have not collected any funds for the national research program. We are considering holding an air conditioning seminar similar to the one that the Los Angeles Chapter held if sufficient interest develops.

Dan Roberts invited the membership to attend the First Annual San Jose Chapter Golf Outing at the Almaden Country Club on October 21. Tickets for golf and/or dinner were available.

President Berrier read a letter from John Ross of PG&E inviting those who were interested to a small Gas Refrigeration Seminar at the Del Webb Hotel on October 26.

President Berrier reported an Engineers' Club request for a donation from the Chapter to help defray the cost of their move to their new quarters. After a brief discussion, the matter was tabled pending receipt of more details concerning the request.

Bob Voelz moved that the Chapter establish a committee to work with Mr. Levy's office at the City regarding fire dampers and code problems. Mr. Levy recently sent a letter to the Chapter requesting our comments on the fire damper problem. The motion was seconded and passed and interested parties were requested to contact Voelz for organization of the committee.

Larry Shea announced that our annual joint meeting with Sacramento in November had been abandoned by mutual consent. While there were no specific details to be announced yet concerning future meetings, Shea announced that there are many interesting topics under consideration and details will be announced when the details are finalized.

The recent practice of introducing visitors and guests only at the start of the meetings was discussed. It was moved, seconded and passed that we resume our previous practice of introducing all those in attendance rather than only the visitors and guests.

After a brief recess, President Berrier introduced Daniel A. Naughton and William B. Skidmore, Chief Engineer and Assistant Chief Engineer respectively of the Hartford Steam Boiler and Insurance Company, who delivered a "Huntley-Brinkley" type report on the insuring of mechanical equipment. It was pointed out that the number of accidents has increased substantially in recent years. They stated that their insurance is generally issued to cover the unusual and unexpected type of breakdowns of equipment and not the normal wear and tear of equipment. The insurance groups try to help prevent accidents by appraising large installations and recommending minimum installation and maintenance standards which must be met before insurance will be issued.

Refrigeration equipment was noted to be one of their largest claim items in recent years, particularly with hermetic type refrigeration equipment. It was stated that their insurance figures indicated that burnouts and breakdowns on hermetic type refrigeration equipment were approximately four times as expensive to repair as those on open type refrigeration equipment and that the life of the hermetic equipment was running approximately half that of the open equipment. No mention was made, however, as to the size of the equipment on which their figures were based or the numbers of each type of equipment involved in their claims. They indicated that their experience with steam turbine driven equipment had been very good, but that their experience with gas turbines was less than good. Maintenance costs on "Total Energy" type installations were noted as being considerably higher than for other type systems and that this fact was often overlooked in studies on various types of systems. They noted that we all could do a lot toward the improvement of conditions concerning equipment operation. As suggestions, they mentioned the inclusion of safety controls and better equipment accessibility into more conservative equipment and system designs, the adoption of good preventative maintenance programs and the prompt indication and repair of problems when they occur.

There being no further business, the meeting was adjourned at 10:20 p.m.

#### MEN ON THE MOVE

Richard E. Gee  
TO:  
The Bechtel Corporation  
Power & Industrial Division  
149 New Montgomery Street  
San Francisco, California 94105

## MINUTES (Continued)

tion of the owner's representative. Stephens offered a number of comments with respect to preferred damper types; opposed blade dampers start generating noise at 0.15 inches and they do not function as a valve at one-half inch water. That a bladed orifice is the preferred method for three inch static and over, with butterfly dampers being of value in between.

Stephens also stated that the average duct system leaks on the order of ten to fifteen percent on supply systems and as high as twenty-five percent on return systems; Wolters stated that in his experience the leakage on supply frequently runs as high as thirty-five percent. The merits or de-merits of leakage on the return system were covered. McLeod pointed out that he requires taping of every joint and it later developed that the conventional cloth or vinyl backed adhesive tapes are unsatisfactory; that canvas and Arabol is the preferred method for taping duct joints of low velocity systems.

Instrumentation, its calibration, and the absolute necessity for knowing the ambient and supply air temperatures in order to achieve accuracy in balancing were discussed, as well as the necessity to oversize the fan to compensate for the duct leakage to be anticipated.

It was stated that a general problem is over-design on jobs with high ceilings, and that engineers should concentrate their attentions as to what happens to air pattern and temperatures at the six foot level and below.

The general consensus of opinion seemed to be that standard valves on multi-zone units leak at least twenty percent, completely upsetting the desired result; the engineering practice today seems to be to use the high pressure type of valve in order to achieve satisfactory results. In addition many designs of multi-zone units have inherent internal problems and frequently turn out to be a poor answer in solving a problem.

Many other comments were offered which indicated that some progress has been made in the "advancement of the art".

There being no further business, the meeting was adjourned at 10:00 P.M.

Lawrence E. Shea  
Secretary

## REPORT FROM THE GOLDEN GATE

Eight consulting engineering firms from the bay area have contributed a "joint venture" group of articles appearing in the August issue of AIR CONDITIONING, HEATING AND VENTILATING magazine under the title "Report From The Golden Gate". The articles were written to give an idea of how this engineering community thinks and what it does.

Richard L. Koral, Editor of the magazine sums-up the articles as follows "Although each article is well worth reading for its own sake, a reading of the whole section reveals some of the unique flavor of the city and region; sophisticated, progressive, outspoken, and friendly".

We strongly urge you to read this group of articles written by the following engineers:

Duane M. Hanson, "San Francisco - The Air Conditioned City";

G. L. Gendler and Ray E. Bass, "New Tools for Tomorrow's Schools";

Walter H. Schneider, "Air Conditioning and Acoustics";

Robert M. Kennedy and Robert W. Phillips, "Campus Heating System";

A. L. Buonaccorsi, "Boiler Size Selection";

Fred U. Weir, "Design in the Bank of California";

Jos. E. Murray, "Trouble-Shootin Mechanical Systems";

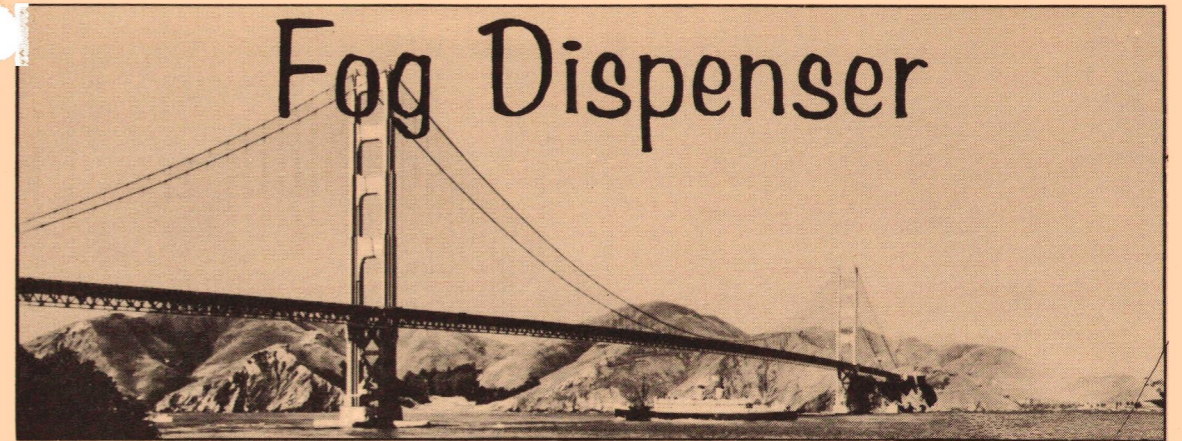
Karl Guttman and Z. O. Cumali, "Design Building to Overcome 2-Pipe Limitations".

FIRST ANNUAL SAN JOSE  
ASHRAE GOLF TOURNAMENT

Friday, October 21, 1966, is the date of the A.S.H.R.A.E. Open Golf Tournament at the Almaden Country Club, the home of the famed Almaden Open. The day will include a golf tournament with prizes and that night a dinner, with entertainment, door prizes, and food by the renowned Almaden Chefs. This event has been long in the planning and is now promising to be an enjoyable and exciting day.

You will have a choice of menu of either New York Steak or Broiled Lobster Tails. The total cost of the day, including green fees and dinner, will be \$15.00. If you do not wish to play golf, a separate ticket will be available to you so that you will not miss the evening activities. This ticket, for dinner alone, will be \$8.00. Bob Sweezy and his committee are hard at work planning the evening program, which will not be of a technical nature.

Call Joe Schauf: 592-2141 for tickets.



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XVI No. 1

OCTOBER 1966

PROGRAM CHAIRMAN: AREL W. BERRIER

The next Golden Gate Chapter meeting will be held at the ENGINEER'S CLUB NEW LOCATION IN THE HONG KONG BANK BUILDING, CORNER OF SANSOME AND PINE STS., San Francisco on October 6, 1966, Social hour will be at 5:30 P.M., dinner at 6:45 P.M.

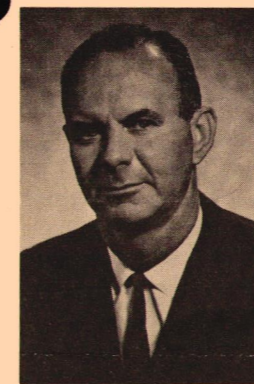
"WHO PAYS FOR AIR CONDITIONING  
AND REFRIGERATION EQUIPMENT BREAKDOWNS"

Engineers, Contractors, and Manufacturers have often been criticized in our industry for showing little concern for major equipment after the standard year's Warranty is over.

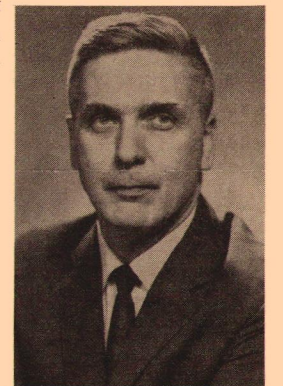
Our Chapter is very fortunate in having two speakers, who are very concerned, because they represent one of the major insurance companies, who insure such equipment.

Mr. Daniel A. Naughton has held the position of Assistant Chief Engineer, Machinery Division with Hartford Steam Boiler and Insurance Company since 1961. Prior to that he served as supervising inspector in the San Francisco Office.

Mr. William B. Skidmore now holds the position of Assistant Chief Engineer, Boiler Division, in their main office, and prior to that time served in their Syracuse Office. Both of the speakers are associate members of ASHRAE.



DANIEL A. NAUGHTON



WILLIAM B. SKIDMORE

A ten year study of this field reveals a marked increase in frequency of accidents and economic losses due to breakdowns and failures. Our speakers will outline causes and make suggestions to minimize failures and losses by closer cooperation between engineers, contractors, manufacturers and users.

## PRE-MEETING WORKSHOP

What kind of specifications should an engineer write? Should he leave out all brand names? Should he mention three? Should he use base bid and alternate? What are the advantages and disadvantages to the parties concerned?

Come at 5:30 before the regular meeting and see what engineers, contractors and suppliers think.

OCTOBER ANGEL

Sanford Mechanical Equipment Inc.

(New address and phone number)

Oakland, California 94612

Phone: 451-6691

1925 Brush St.

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1371 - 15th Avenue, San Francisco, California 94122. LO 6-2740.

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1966 - 1967

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Larry Shea \_\_\_\_\_ Vice President  
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Publicity \_\_\_\_\_ Ron Wilson  
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Research Fund \_\_\_\_\_ John Brose  
Dance \_\_\_\_\_ Max Wolf

FOG DISPENSER STAFF

Editor \_\_\_\_\_ Pete Knezevich  
Staff Writer \_\_\_\_\_ Jim Booth  
Angel Procurement \_\_\_\_\_ Joe Murray

**President's Corner**

Arel W. Berrier



On behalf of the Officers and Board members, I welcome all members and guests to our 1966-67 season and with the cooperation of all, I hope it will be as successful as those of past years.

A complete list of officers, Committee Chairmen and members is printed in this issue, and I am grateful that the majority have agreed to serve another year.

We intend to continue with the Work-Ship program; the pre-technical sessions which were enthusiastically received last year are being planned by Ken Mirov; Larry Shea is hard at work on programs; Bob Tuck has some new approaches for membership cultivation; and we anticipate ending the year with another good social.

At the Regional X Meeting in Los Angeles attended by Larry Shea and myself, each Chapter was urged to put re-newed emphasis on membership and the Research Fund. I feel confident that our membership will increase this year, but fund raising can be a burden if some new and novel approach is not found. The Los Angeles Chapter met their obligations by conducting a 10 week Seminar on Air Conditioning Fundamentals. They were able to send the Research Fund \$2500 after all expenses connected with the program were paid. Our Chapter intends to pattern a program after theirs, but a great amount of planning must precede such a Seminar.

As the new president, I feel very fortunate in being the first to preside in the new quarters at the Hong Kong Bank opposite the old location. The new Club on the 16th and 17th floors was not completed when I visited the site, but judging from the size, shape and view, I believe everyone will be pleasantly surprised.

their position in this matter.

As a separate but less important problem, we would appreciate your views with regard to the requirements for fire dampers through

- a) One-hour occupancy separation walls (other than corridor walls);
- b) One-hour tenant separation walls.

I would, therefore, appreciate receiving your comments, in writing, at your earliest convenience.

Very truly yours,

Robert C. Levy, Secretary  
Board of Examiners

MINUTES - MAY 5, 1966

The meeting was held at the Engineers' Club, San Francisco, on Thursday, May 5, 1966. At 7:45 P.M. President Gendler skipped the introduction of the members and only guests were introduced by their hosts.

Under old business, Ray Herman reported that there were 109 members and guests in attendance. Bob Voelz reported that we had \$1,608 in the bank and Bob Tuck reported that we had 26 new members in our chapter with a total of approximately 280 members. Tuck advised that the National had assigned 400 members to our geographical area. He also reported that for an increase in membership of ten percent, we would get a membership award and we were only one or two members away from realizing this dream.

Herb Duncan reported on our June 4th dance and whipped up our appetite for the succulent repast and evening of festivities which will be forthcoming. He stated that dancing will be from 7:00 P.M. to 1:00 A.M.; that arrangements have been made so if any members wish, they can play golf in the afternoon prior to the evening's terpsichorean event.

Sheldon Doolittle reported that Sacramento was also having its annual dance on June 4th, and those in the area may wish to attend.

John Brose reported on the activities of the Research Committee and stated that to date no money has been received.

Bob Phillips, Education, again requested that members bring guides to the meetings for distribution to the needy.

Irving Alger, new Board Member, reported on the Workshop Meeting of the evening and stated that it was exceedingly successful. The subject matter concerned a modified refrigeration cycle recently introduced by a well known manufacturer.

Rod Keif, from Cal Poly, discussed the Workshop Program and the expenditure of the funds furnished by the Golden Gate Chapter. Two examples were given: One, Alex Gooseff, a former student at San Francisco City College, had constructed a compressor which contained a quartz crystalline head. Through a connecting apparatus a direct reading of the changes in cylinder head pressure could be read as the compressor functioned. Rod stated this will be a wonderful educational tool for use in the future. Another student constructed a building heat gain simulator which will also be a desirable educational tool. The students receive on the order of \$1.50 per hour for their time. Rod hoped

that next year they'd be able to distribute funds to four students and thanked us on the students' behalf for the help we were giving them.

Ron Wilson was congratulated by President Gendler for the work he had done on the Publicity Committee this year.

Under new business, we were advised of the forthcoming Regional Meeting in Los Angeles on May 19 - 21; and of the 73rd Annual Summer Meeting in Toronto, Canada, June 27 - 29. We were told that next year our meetings would be held at the new location for the Engineers' Club which is in the Hong Kong Bank Building directly across the street from the one in which we now meet. The top two floors of this new structure are being devoted to the club. The appointments will be luxurious and the meeting rooms, etc. completely air conditioned. With such elegant surroundings we'll probably all break out in a rash.

The exchange of offices then took place with Berrier congratulating Gendler on the fine job that Gus has done this past year; and Gendler congratulating Berrier and welcoming him to the rarified atmosphere of the Chapter Presidency.

The break was taken in the meeting before the introduction of the guest panelists and subject of discussion.

The panel consisted of three consulting engineers, Karl Guttman, Don McLeod, and Clyde Wolters; one supplier, Pete Stephens; and one balancing contractor, Sheldon Doolittle. The substance of the preliminary comments was that fifty percent of job problems related to lack of proper air balance. There was a feeling that it was necessary to define air balance, its intent, and extent; the limitations of a job when it has been improperly designed by the consulting engineer and a diversity of opinion with respect to who should do the work. McLeod stated that the most successful arrangement seems to be that the contractor shall be required to include a specified sum in the contract for the balancing work; and that the selection of the balancing firm be left to the discretion of the consulting engineer. It was generally felt that problems encountered during balancing be referred to the consulting engineer for solution.

It was stated that the best way to get a balancing contractor on the job and keep him there was to withhold payment of his money until the job was completed to the satisfac-

*The following letter was directed to the Golden Gate Chapter with a request made for our comments. Please direct your reply to the Golden Gate Chapter Technical Committee, attention Mr. Ken Mirov, Kenneth C. Mirov, Inc., 1485 Baysshore Blvd., San Francisco.*

Editor

Gentlemen:

The Board of Examiners of San Francisco has requested that I inquire of various organizations as to a proposal to require that fire dampers be installed wherever air or heating ducts penetrate one-hour corridor walls. The present provisions of the San Francisco Building Code require fire dampers only when two-hour assemblies are penetrated, in accordance with the Exception in Paragraph No. 135 of NFPA Pamphlet 90-A. The Board requested that the organizations consider this proposal and advise them through me of

## ATTENDANCE AT APRIL MEETING

## MEMBERS

Dick Charles	Charles & Braun Cons. Eng.	Walter Roos	Kaiser Engrs.
Chuck Bailey	Shell	Jerry Howarth	Kramer Trenton Co.
Al West	Colan Heating Co.	Siegmund Kulka	Kulka Engrs.
Steve Wei	Bechtel	K. Guttman	Kasin-Guttman
Darrell Robinson	Bechtel	Ed. C. Leedom, Jr.	Air Filter Sales & Serv.
Herb Duncan	Flame Air, Inc.	Rudy Pribuss	C. R. Reichel Engr.
Pete Filios	Flame Air, Inc.	Rod Roberts	Montgomery & Roberts
Bob Swezey	Burke & Co.	Lewis Pollock	Trane Co.
Don Campbell	Austin-Campbell Co.	John Lenihan	Burke & Co.
Ed Akizuki	Norman S. Wright Co.	Gus Gendler	G. L. Gendler & Assoc.
Don Huffine	Norman S. Wright Co.	Dick Friedman	Engineered Air
Carl H. Jordan	G. L. Gendler & Assoc.	Arel W. Berrier	Berrier Sales
Dave Rifkin	Cooling & Heating Eng.	Phil Beggs	Paul W. Beggs & Son
Doug Bell	Cooling & Heating Eng.	Ralph Williams	Lillard Co.
Mike Bekedam	Industrial Steam	Clyde Burkey	Lillard Co.
Gene DeWree	Mission Check Valves Co.	Donald Bradshaw	Owens Corning Fiberglas
Frank F. Gonden	Bentley Eng.	Stuart Malcolm	Kasin & Guttman
Clyde Wilson-Reid	Clyde Equip. Co., Inc.	Bob Anderson	Western Asbestos
Karl Baldwin	Ramsey & Assoc.	Terry Scavone	A. R. Peterson & Sons
Pat Geis	Engineered Air Systems Inc.	Doug Kerby	American Blower
Richard E. Gee		Bob Beggs	Paul W. Beggs & Son
Eugene Valerio	Edward B. Ward & Co.	Bob English	Harrison Mech. Design
Jack Chamberlain	Marelich Mfg. Co.	Miles Suda	G. L. Gendler & Assoc.
Ron Wilson	American Air Filter	Charles W. Kopf	Fulton-Sylphon
Tom White	American Blower	Tom Cable	Scott Co.
Al Scavino	Jos. E. Murray & Assoc.	Gene Hughes	Scott Co.
Max Wolff	Dill & Sederberg Plbg.	Frank Olsen	Frank Olsen Co.
Tom Gilbertson	Johnson Service Co.		

## GUESTS

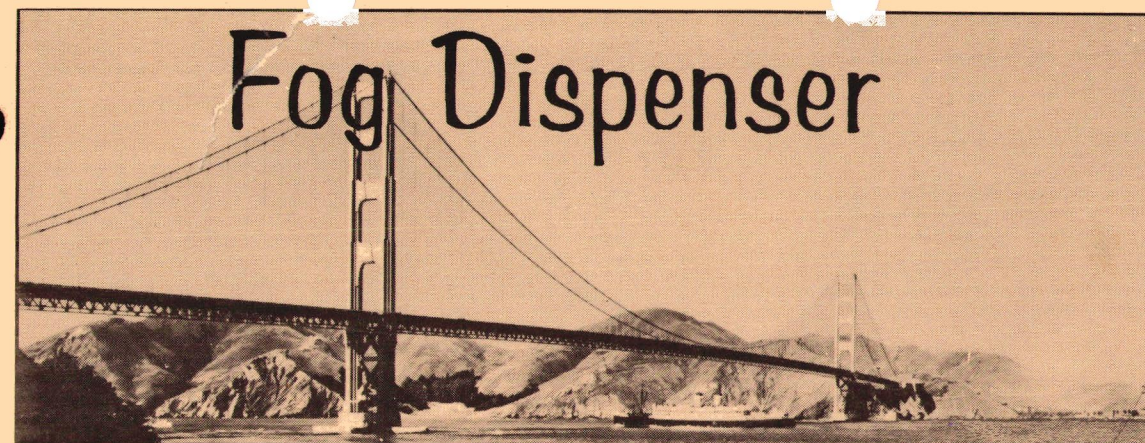
Denis Taerea	Clayton Valley High School	Erick Lundstrom	U. C.
Giff Gifford	Charles & Braun	Ernst Ewoldsen	U. C.
George Wassow	El Cerrito High School	Gary Campbell	California State Poly
Paul Bailey	El Cerrito High School	Ken Mompellier	Diablo Valley College
Paul West	Aragon High School	Don Sprathing	City College of S. F.
Harold Herren	Mission Check Valves Co.	Jim Attard	City College of S. F.
Dennis Gee	Lowell High, S.F.	Don Bodesta	City College of S. F.
Pete Valerio	Terra Linda S.R.	Jerry Galhano	U. C.
Joe Paris	Fereday Mechanical	James E. Cox	Merritt College, Oakland
Richard D. Collin	F. W. Spencer & Son	Michael Kopf	Redwood High
Dan Marelich, Jr.	Marelich Mfg. Co., Inc.	Robertshaw	Robertshaw
Bob Johnson	Stolte Inc.	Robertshaw	Robertshaw
Stan True	Kaiser Engrs.	D. C. Bryant	City College of S. F.
Bob Lincoln	Montgomery & Roberts	John Bettencourt	City College of S. F.
Alex Gooseff	Cal Poly	David Bums	City College of S. F.

## MAIL OR CALL NEWS TO:

EDITOR  
FOG DISPENSER  
c/o DYNA-MAC SYSTEMS  
R. F. MacDONALD  
850 MAHLER ROAD  
BURLINGAME, CALIFORNIA  
PHONE: 697-0770

## CHANGE OF ADDRESS:

Richard A. Emerson  
Robert B. Holland Co., Inc.  
P.O. Box 6, Belmont, Calif.  
Phone: 592-2141



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XV No. 14

MAY 1966

PROGRAM CHAIRMAN: Don Locke

The next Golden Gate Chapter meeting will be held at the Engineers Club, San Francisco, on Thursday, May 5, 1966. Social Hour - 5:30 to 6:30. Dinner promptly at 6:45 p.m.

## AIR BALANCING

The May meeting will be a panel discussion on air and hydronic balancing. Panel members will be Pete Stevens, Sales Engineer, Tuttle & Bailey Co.; Don McLeod, Chief Mechanical Engineer, Simpson, Stratta & Associates; John Sausen, Mechanical Engineer, Lawrence Radiation Lab; Karl Guttman, Partner, Kasin-Guttman & Associates; Clyde Wolters, Engineer, City of San Francisco.

There will be a general discussion touching on all aspects of air and hydronic balancing.

A printed summary covering the various aspects of air balancing to be discussed by the panel will be handed out prior to the meeting.

This meeting should be of great interest to all members and any of your guests who are associated with our industry.

Two years have elapsed since our last meeting on air balancing. During this interval new criteria has been developed in the field of air and hydronic balancing.

MAY ANGEL

AMERICAN STANDARD INDUSTRIAL DIVISION

4 West 4th Avenue

San Mateo, California

Phone: 342-8621

Published monthly by the Golden Gate Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1371 - 15th Avenue, San Francisco, California 94122. LO 6-2740.

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Gus Gendler

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Attendance . . . . . Ray L. Herman  
Membership . . . . . Robert Tuck  
Finance . . . . . Robert Voelz  
Technical . . . . . Kenneth Mirov  
   Carl Jordon  
Reception . . . . . Jack A. Palmer  
Roster . . . . . David Rifkin  
Scholarship & Education . . . . . Robert Phillips

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Staff Writers . . . . . Raymond K. Kelly  
   Jim Booth  
Angel Procurement . . . . . Joe Murray

#### REGION X MEETING

The next Region X meeting will be held in Los Angeles on May 19th, 20th and 21st at the Sheraton Wilshire Hotel. Official delegates attending the meeting from the Golden Gate Chapter will be Larry Shea and Arel Berrier.

Several Board Members will join the two G.G.C. delegates at Los Angeles for a one day discussion on the ASHRAE Winter Meeting of 1970 that will be held in San Francisco.

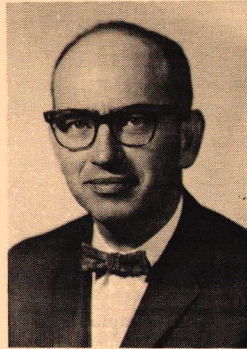
#### STUDENT SUMMER EMPLOYMENT

Do you need temporary help? Someone to complete the work that was set aside during the winter months?

If you are a consulting engineer, manufacturer's representative, contractor or manufacturer and need summer help - contact Don Bryant, San Francisco City College; phone 587-7272 regarding student summer employment.

### President's Corner

Gus Gendler



My year in office has been very gratifying to me because of the fine support and attendance which has been given by the membership. Nearly every one of the committee members has served well and this is really the only way in which we can continue to accomplish the goals of the Society. Of course there is more that still needs doing.

I hope in the coming year we will better understand our obligations to contribute to the ASHRAE Research Fund. Each contractor, manufacturer's rep, and engineer can actually have his own research department to solve a multitude of current problems, simply by making an annual contribution.

We have done especially well in our membership drive and with our new pre-meeting workshops that were so well organized and directed.

It has been an enjoyable experience to work with the current Board of Governors. Every officer has done an outstanding job. I am pleased to leave the various offices in such good hands and am looking forward to my "retirement" after this meeting.

#### BOARD ACTION HIGHLIGHTS

The Board of Governors met at the offices of G. L. Gendler & Associates, Inc.

1. Dick Friedman, temporary chairman of the 1970 Show, has arranged a meeting between our officers and the directors of the Western Air Conditioning show on May 20th in Los Angeles.
2. The names of members who are delinquent on their annual workshop contributions will be published in the Fog Dispenser.
3. The Board approved chapter dues at the same rate of \$8.00 for the 1966-67 year.
4. Most of the Fog Dispenser's "angels" are delinquent in their payments. If you are one of these, please send your check to Bob Voelz.

### GOLDEN GATE CHAPTER - ASHRAE GOLDEN GATE LANES U.C. RICHMOND FIELD STATION MINUTES - APRIL 7, 1966

The meeting was called to order by Gus Gendler at 7:15 p.m. by introduction of students and guests. There were 71 members and 14 students and guests.

Under old business, Charles Kopf on behalf of the Teller's committee reported that the following officers were elected for 1966-1967:

President	- Arel Berrier
Vice President	- Larry Shea
Secretary	- Bob Voelz
Treasurer	- Dick Friedman
George Aronovsky	- Board of Governors
Irving Alger	- ✓
Gus Gendler	- ✓

Under new business, Herb Duncan announced that formal plans have been made and tickets printed for the Luau at the Round Hill Country Club at Alamo, June 4th. Tickets will be \$18.00 per couple and they may be obtained from Herb Duncan or other officers of the Chapter.

Arel Berrier announced that the next meeting on May 5 will be at the Engineers' Club and will be a panel discussion on Air Balance. Further details will appear in the Fog Dispenser. The Region X meeting will be in Los Angeles on May 19, 20 and 21st and Arel Berrier and Larry Shea will be our official delegates, but other interested officers will probably attend to discuss plans for the forthcoming winter meeting of 1970 in San Francisco.

Dick Friedman introduced his guests Alex Gooseff and Gary Campbell of Cal Poly who gave a brief description of how they utilized the \$1000 workshop fund sent to them this past year by the Chapter. The workshop fund has been oversubscribed for this year with \$960.94 already received and \$558.00 pledges outstanding.

Arel Berrier introduced the Tour coordinator of the Richmond Field Station, Mr. Walt Gillfillan who in turn introduced the assistants for the various test facilities:

Naval Architecture	- O.J. Sibul
Seawater Conversion	- E.I. Ewoldsen
Propulsion Dynamics	- Eric Lundstrum
Sanitary Engineering	- D.L. Feuerstein

Mr. Gillfillan distributed a bulletin describing the various facilities to be visited

and due to the lateness of the hour, the meeting was adjourned to form in groups at the Richmond Field Station.

The Tour assistants at the Field Station were very well versed in their projects and answered any and all questions. I believe that all members and students were greatly impressed with the scope and extent of the engineering test facilities, and it was unfortunate that more members and students did not attend as this was a memorable field trip.

A.W. Berrier,  
Temporary Secretary

#### TECHNICALLY SPEAKING by George Greene

Develop the habit of looking for extra benefits from each component of a system. Sometimes a little added cost results in real economy; sometimes economies or improved performance can be had at no extra cost. Exhaust or relief air can often be put to extra use. Exhaust from a conditioned space can increase air cooled condenser efficiency. Relief from a classroom will help contain the odor of wet rainclothes if the grille is located near the coat rack. Taking air through the warm furred space above a ceiling with recessed light fixtures is more efficient than taking it directly from a conditioned room. The "What Else Can It Do?" habit costs nothing. It frequently pays off for your customer or client, the industry in general, and therefore ultimately for yourself.

*The above article appeared in the April issue of the San Jose Chapter's Newsletter.*

*Golden Gate Chapter members are encouraged to contribute articles of this nature. Put your thoughts in writing and mail them to the Editor - Fog Dispenser.*

#### PRE-MEETING SEMINAR

At 5:30 p.m., prior to our regular meeting, we will continue what we consider to be a successful means of sharing ideas and problems in a frank and personal manner. Our topic will be two-fold: first, Dick Friedman will discuss a modified refrigeration cycle that he's quite enthused about; second, as time is available, a topic will be selected on the spot, depending upon the interest of those participating.

Carl H. Jordan

## ATTENDANCE AT MARCH MEETING

## MEMBERS

Ken Mirov  
Gerry Yaffe  
Howard Friesen  
Fred Espey  
Max Wolff  
Pete Filios  
Gene Valerio  
Charles E. Harden  
George E. Thompson  
Jim Curtin  
Jim Dana  
Carl H. Jordan  
Clyde Wilson-Reid  
Ralph Williams  
Clyde Burkey  
Tom Cable  
Max Jones  
Allan Gray  
Jim Breese  
Dick Friedman  
L. Shea  
Phil Beggs  
Karl Baldwin  
Bob Phillips  
Chuck Bailey  
Dick Hamilton  
Lew Pollock  
John Werner  
Bill Orton  
Charles Dombitsky  
Ron Wilson  
S. D. Copland  
George Kaunoff  
Chuck Kopf  
F. M. Palacios  
D. T. Campbell  
Leo M. Pumphrey  
Jim Johnson  
George N. Aronovsky  
Joe Beck  
Bob Tuck  
Robert Voelz  
Gus Gendler  
John A. Lord  
Elmer F. Guy  
Sanford W. Fox  
Lowell Young  
Jim Van Buskirk  
Miles Suda  
Jack Kniveton  
John Brose  
Booth Thomas  
Irving Alger  
Bill Barron  
Jim Myers  
Steve Wei  
H. Yahagi  
Ed. Akizuki  
Pat Geis  
Don Huffine  
Bob Beggs  
B. K. Tow  
Ed. C. Leedom  
Don Locke  
Lyle Schuelke  
Doug Kerby  
Herb Duncan  
Joe E. Murray  
Frank Lockwood  
Jack A. Palmer  
F. J. Mongraw  
Roger Chesebro  
R. G. Boyer

Trane Co.  
Tempco  
Barber-Colman  
Ilg. Vent.  
Dill & Sederberg Plbg.  
Flame Air  
E. B. Ward & Co.  
Farr Co.  
Complete Balance Eng.  
Philco  
G. M. Cooke Co.  
G. L. Gendler & Assoc.  
Clyde Equip. Co.  
Lillard Co.  
Lillard Co.  
Scott Co.  
Scott Co.  
Dunham-Bush  
C. A. Gillet Co.  
Engineered Air.  
Shea Equip.  
Paul Beggs & Son  
Ramsey & Assoc.  
Kennedy Eng.  
Shell  
Monterey Mech.  
Trane Co.  
Trane Co.  
Keller & Gannon  
PBQ & D  
American Air Filter  
Kasin & Guttman  
Reid & Taries, Arch. Eng.  
Fulton Sylphon  
Post Office Dept.  
Austin-Campbell Co.  
Natkin & Co.  
Natkin & Co.  
ITT Hayes  
Atlas Heating  
Tuttle & Bailey  
Skidmore Owings & Merrill  
G. L. Gendler & Assoc.  
Robertshaw  
Emerick Sheet Metal  
Sanford Fox Consulting Eng.  
Valley Sheet Metal  
A. O. Smith  
G. L. Gendler  
Norman S. Wright Co.  
The Brose Co.  
Tuttle & Bailey  
GM & TR Simonson  
Wm. A. Barron Co.  
Air-Factors  
Bechtel Corp.  
Bechtel Corp.  
Norman S. Wright  
Engineered Air Systems  
Norman S. Wright  
Paul Beggs & Sons, Inc.  
Westdocks U. S. Navy  
Air Filter Sales  
Complete Balance Eng.  
Kewanee Boilers  
American Blower  
Flame Air, Inc.  
JEMAS  
Oak. School Dept.  
Calif. Hydronics Corp.  
General Elect. Co.

Fraser & Johnston  
Honeywell

## MEMBERS

Jim Witham  
Ray Wolford  
R. L. Herman  
Dick Fujioka  
Lou Gramaglia  
Chuck McLaughlin  
Pete Knezevich  
Donald Bradshaw  
Millar Clarke  
Arel Berrier  
Dick Charles  
Ed Collins  
Bob Anderson  
Ken Lloyd  
Gordon Goodding  
Tom Glenn  
Terry Purcell  
Coe Kellogg

## GUESTS

Maurice Laks  
W. H. Olson  
Tom Conroy  
Duncan Kelly  
Bill Bradley  
Jim Limbaugh  
John Fumas  
Ruth O'Hare  
Mel Ramsey  
George Gillette  
Bob Roach  
John Tait  
Paul E. Rosenthal  
Ed. Beeching  
J. C. Parsons  
Fred Schmuck  
Wayne Womer  
John Bush  
Gary Treat  
Aron Curtis  
Ron Kenfield  
Cordula Riley  
Frances Kim  
Gerald Siegfried  
John R. Moberly  
Sam Yamauchi  
Ihsan H. Ali

## CHANGES of ADDRESS and/or

## AFFILIATION as of MEETING of 3/3/66

Donald Bradshaw  
1200 17th Street  
San Francisco, California 94107

## Art Duncan

Bus. Add:  
61 S. Linden Avenue  
So. San Francisco, California  
Home Add:  
833 University Avenue  
Palo Alto, California

## Raymond C. Kelly

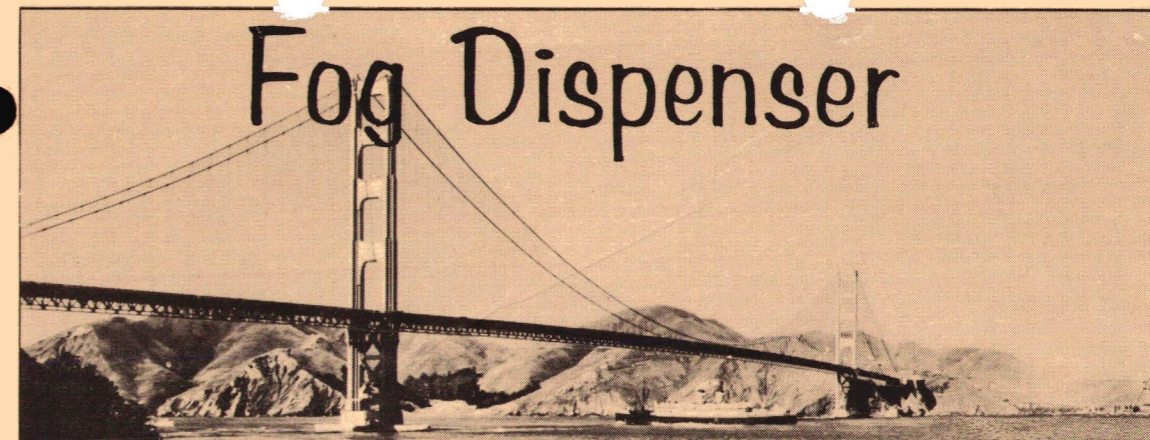
Paul-Monroe Hydraulics, Inc.  
8345 E. Slauson Avenue  
Pico Rivera, California 90660

(Please cancel mailing plate, now affiliated with Los Angeles Chapter).

Ray Herman

Fraser & Johnston  
Materials Survey Assoc.  
RMK  
GM & TR Simonson  
Schlegel Mech.  
American Blower  
R. F. MacDonald Co.  
Owens Corning Fiberglas  
GM & TR Simonson  
Berrier Sales  
Charles & Braun  
Safeway Stores, Inc.  
Western Asbestos  
Barber Colman  
Barber Colman  
G. T. Yamas Co.  
Western Asbestos  
Linford Air.

G. L. Gendler & Assoc.  
G. L. Gendler & Assoc.  
Clyde Equip. Co.  
G. M. Cooke Co.  
Payne Co.  
Payne Co.  
Ilg. Vent. Co.  
Shea Equip.  
Worthington  
Ramsey & Assoc.  
Kennedy Eng.  
Trane Co.  
Self  
Tuttle & Bailey  
Pacific Telephone  
Fluid Master Inc.  
Westinghouse  
Norman S. Wright  
The Trane Co.  
Honeywell  
Materials Survey Assoc.  
Materials Survey Assoc.  
Materials Survey Assoc.  
Schlegel Mech.  
Owens Corning Fiberglas  
G. L. Gendler & Assoc.  
Kaiser Eng.



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XV No. 13

APRIL 1966

PROGRAM CHAIRMAN: Arel Berrier

The next Golden Gate Chapter meeting will be held at the Engineers Club, San Francisco, on Thursday, April 7, 1966, Social Hour - 5:30 to 6:30. Dinner promptly at 6:45 p.m.

## FIELD TRIP AND STUDENT MEETING:

## RICHMOND FIELD STATION, UNIVERSITY OF CALIFORNIA

The April meeting should be of great interest and members are encouraged to bring their own high school students or those of friends as guests who are interested in the Engineering Field. If you do not fall into this category, please contact your high school counsellor and bring a student guest who he might recommend.

Mr. Don Horning, the technical director of the station will be present at our dinner when he will give us a brief orientation lecture on the facilities and experiments being conducted. After the meeting, members will split into smaller groups to tour the following installations:

Sea Water Conversion - Sanitary Engineering - Propulsion Dynamics - Naval Architecture

The Richmond Field Station is a real show-place and we should take pride that such an installation is in our area. This trip should be a great experience for members and students alike.

Enclosed is a map showing location of the Field Station and the Golden Gate Lanes where our dinner meeting will be held. Cocktails are at 5:30 to 6:30 P.M. Dinner is at 6:30 P.M. Please be prompt as we will be on a close time schedule.

Indicate on attendance card if you intend to bring a Student guest.

APRIL ANGEL

ROBERT B. HOLLAND CO., INC.  
"NEW ADDRESS & TELEPHONE NUMBER"

490 El Camino Real - P.O. Box 6

Belmont, California

Phone: 592-2141



(1) his "engineers" had quit suddenly some time ago, (2) the manufacturer's sales engineer hadn't been by for many weeks (No, it was **not** Tom White, this time).

So, after reviewing the factory correspondence (in English), arguing with the sheet metal contractor (in Spanish), calming my friend down (in German), I calculated the missing duct sizes (in centimeters) and finished the layout (in time for the all-important siesta).

Everybody wound up being pretty happy, including yours truly who was rewarded with a beautifully preserved, pre-Columbian (ca. 500 A.D.) clay head from the distributor's magnificent private collection.

MORAL: With air conditioning you can get a-head. No?

Siegmund Kulka

### A PERPETUAL VERSE

Ten bid cutters, cutting all the time;  
But one cut it too much. Then there were nine.

Nine bid cutters, just feeling great;  
But one discovered overhead,  
And then there were eight.

Eight bid cutters, staring up to heaven;  
One took on a credit risk, then there were seven.

Seven bid cutters, just knew they couldn't mix;  
But one joined our association,  
And now there's only six.

Six bid cutters, barely still alive;  
But one has cut his bid again,  
Now there are five.

Five bid cutters, but crying out for more;  
One actually tried to pay his bills,  
Now we have four.

Four bid cutters, still full of glee;  
But one of them has checks that bounce,  
Now there are three.

Three bid cutters, wondering what to do;  
So one met still a lower bid,  
Now there are two.

Two bid cutters, still having fun;  
One cut the others throat, so now there's only one.

One bid cutter, left without a penny;  
He did survive the longest, but now we haven't any.

No bid cutters, we thought they'd never stop;  
Let's educate these new ones from opening up their shops.

What's this . . . . . Oh, No!!!  
Ten bid cutters, etc. . . . .

### ASSISTANT EDITOR WANTED FOR GUIDE AND DATA BOOK

The position of Assistant Editor for the ASHRAE Guide and Data Book is currently open, and applications are solicited. Applicants preferably should have one to three years engineering or technical writing experience in heating, air conditioning or refrigeration. Editorial experience is desirable but not essential.

This position involves technical and production editing of Guide And Data Book chapters, as well as coordination of the activities of the Guide And Data Book Committee, Technical Committees, and authors. Excellent opportunity for experience with engineering publication, invaluable contacts with leading authorities.

Job location is at ASHRAE'S Headquarters, United Engineering Center, New York City. Applicants should direct their inquiries, which will be held in confidence, to the Editor, ASHRAE Guide And Data Book, 345 E. 47th Street, New York, N. Y. 10017

### HOOSIER - PACESETTER

#### DAFFYNITIONS

rescind - send it again.

pachyderm - packaged skin (as in pancake makeup).

pandemonium - the house hasn't been cleaned in days, ma was weeding the garden, pa hasn't shaved since yesterday, the kids just finished digging a foxhole, and the PTA president is due in 5 minutes.

panacea - money

paragon - U. S. Money (pre-war term).

parachute - a thing that if it doesn't work the first time you can't try another one.

protuberance - what keeps a fat man from seeing his shoes.

protoplasm - the stuff that if there wasn't as much of it as there is some of us might have to be somewhere else.

prudence - the better part of discretion is the better part of valor.

pseudonym - often found in hotel register.

prune - Arizona plum.

protrude - to intrude and stay there.

pueblo - apartment house without elevator.

dime - formerly a nickel.

## ASHRAE ANNOUNCES RESEARCH PROJECT TO EXPLORE EFFECT OF THERMAL ENVIRONMENT ON PRODUCTIVITY AND LEARNING

ASHRAE has announced the initiation of a research project to study the "Effect of Thermal Environment on Productivity and Learning in Commercial, Industrial and School Activities".

The ultimate study will explore a wide range of thermal conditions normally encountered in typical air-conditioned and non-air-conditioned environments and will be concentrated on the effects of air conditioning on job productivity and learning.

Objectives of the total project are four-fold:

1. To develop testing measurement techniques to evaluate the effect of thermal environment on productivity and learning.
2. To determine the effect of several levels of thermal environments on productivity and learning in representative Commercial, Industrial and School Activities.
3. To establish, if possible, the criteria for thermal environment for optimum productivity and learning accomplishment for these activities.
4. To determine, if possible, the improvement in productivity and learning between the optimum air-conditioned and the normal air-conditioned environments.

Objective information about the effect of air conditioning on people's ability to work and learn will be of great value to all industrial and commercial management, to educational administrators and, also, to the building and air-conditioning industries.

Such information could be used, together with relevant cost and production data, to select optimum thermal conditions in terms of equipment, operating costs, and effectiveness of the industrial or commercial operations performed in a specific air-conditioned space. For example, management might decide that the cost of maintaining cooler conditions than the minimum needed for comfort would be offset by increased individual productivity. Similarly, more specific knowledge on the effect of thermal environment on learning could be used by educational administrators and planners in establishing standards for educational and training facilities. In addition, architects and air-conditioning engineers could use this information on optimum thermal environment in designing systems for commercial, industrial and educational buildings. Such knowledge about the effect of thermal environment on ordinary

people at work is badly needed. Present data on human productivity in relation to thermal environment are based mainly on laboratory studies of fit young people doing military or artificial tasks under extreme thermal conditions. The present data are, therefore, inadequate for normal commercial or industrial applications.

Phase I of this project has been started by an \$18,000 contract to Dunlap and Associates, Inc., of Darien, Connecticut, to develop detailed plans and to establish a program of studies for future phases. It is anticipated that this program will include several industrial and commercial field experiments, as well as laboratory-type learning studies in the ASHRAE-KSU Environmental Laboratory at Kansas State University in Manhattan, Kansas. This complements the current Society sponsored thermal comfort studies already in progress at Kansas State University.

This new project on the Effects of Air Conditioning on Productivity and Learning is one of 21 current research studies being investigated by ASHRAE through grants totalling \$134,000 made to 15 different cooperating institutions.

In addition to providing valuable data for our members and for industry, ASHRAE research also supplies educational training for college students, in particular, post-graduate engineers. ASHRAE chapters are invited to contribute funds to support the Society's research studies.

## BUENOS AIRES ACONDICIONADOS

During a recent trip to South America I for a couple of days in a modified hellhole, the port town of Guayaquil, Ecuador. (I got there by what must be the world's most remarkable all-day Toonerville trolley ride - but that's another story, as they say in "Irma La Douce"). Anyhow, shortly after my arrival, I met the owner of a good-sized distributing business whose lines included not only German diesel engines, electric motors and machinery but also air conditioning equipment of a brand which should remain nameless but is American-Standard. The man was very unhappy at the moment because (1) he had a half-finished duct layout for a small textile plant in his office, with the factory under construction, (2) he had no technical knowledge, being a trader by vocation and an archeologist by avocation. The reasons for the half-finished state of the drawings were:

## LETTERS TO THE EDITOR (con't.)

Dear Mr. Gee:

January 18, 1966

The correction you noted on page 524 of the 1965 Guide and Data Book of 11 Btu's/Hr./Sq. Ft. is incorrect. The correct value should be 15 Btu's/Hr./Sq.Ft. This value will be changed in the future copies of the Guide.

Thank you for your correction on this matter. If you find any other corrections please let me know.

Yours very truly,

Lorne W. Nelson  
Chairman TC 2.1

## MAIL OR CALL NEWS TO:

EDITOR  
FOG DISPENSER

%DYNA-MAC SYSTEMS  
R.F. MACDONALD  
850 MAHLER ROAD  
BURLINGAME, CALIFORNIA  
PHONE: 697-0770

## ATTENDANCE AT FEBRUARY MEETING

## MEMBERS

Allan Gray  
Ray Wolford  
Fred Espey  
Lyle Schuelke  
Pete Knezevich  
Mike Reichlin  
C. Dombitsky  
Art Ciapponi  
Terry Purcell  
Howard Friesen  
Gerry Yaffe  
Dick Charles  
Clyde Wilson-Reid  
Max Wolff  
Bob Anderson  
Jack A. Palmer  
Darrell Robinson  
John Furnas  
Phil Beggs  
Bob Beggs  
John Linford  
Coe Kellogg  
Don Campbell  
A.F. Chesebro  
Jim Witham  
Frank Mongraw  
Jos. T. Washington  
Gene Hughes  
Charlie Butcher  
Fred Vann  
Bill Orton  
Frank Hibbs  
Allan Ballard  
E. DeWree  
Ron Wilson  
Karl Baldwin  
Joe Schauf  
Stuart V. Smith  
Jerry Howarth  
L. Shea  
Dick Friedman  
Arel W. Berrier  
Gus Gendler  
John A. Lord  
Tom Cable  
Steve Wei  
Richard E. Gee  
Joe Beck  
Dave Rifkin  
Doug Kerby

Dunham-Bush  
Materials Survey Assoc.  
Ilg Ventilation  
Kewanee Boiler Corp.  
Dyna-Mac Systems  
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Pacific Pumping  
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Charles & Braun  
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Linford Air  
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Fraser & Johnston  
Fraser & Johnston  
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Ray Winther Co.  
Scott Co.  
Johnson Service Co.  
Vann Eng.  
Keller & Gannon  
Union Ice Co.  
Ballard Eng. Co.  
N.J. Hatter Co.  
AAF  
Ramsey Assoc. LTD  
Robert B. Holland Co.  
Sanger Ice & Cold Storage  
Kramer  
Shea Equip. Co.  
Engineered Air  
Berrier Sales  
G.L. Gendler & Assoc.  
Robertshaw Controls  
Scott Co.  
Bechtel Corp.  
Bayha, Weir, Finato  
Atlas Heating  
Cooling & Htg. Eng.  
American Blower

## MEMBERS

Carl H. Jordan  
K. Guttman  
Jos. E. Murray  
Herb Duncan  
Frank Lockwood  
Bob Swezey  
Chuck Kopf  
F.M. Palacios  
Dick Hamilton  
Bob Tuck  
Tom White  
Edwin C. Leedom, Jr.  
Jack Chamberlain  
Frank Gordon  
Wanda Berry  
Dick Emerson  
Al Scavino  
Pat Geis  
Sheldon W. Doolittle  
Ray Herman  
John E. Werner  
Don Locke

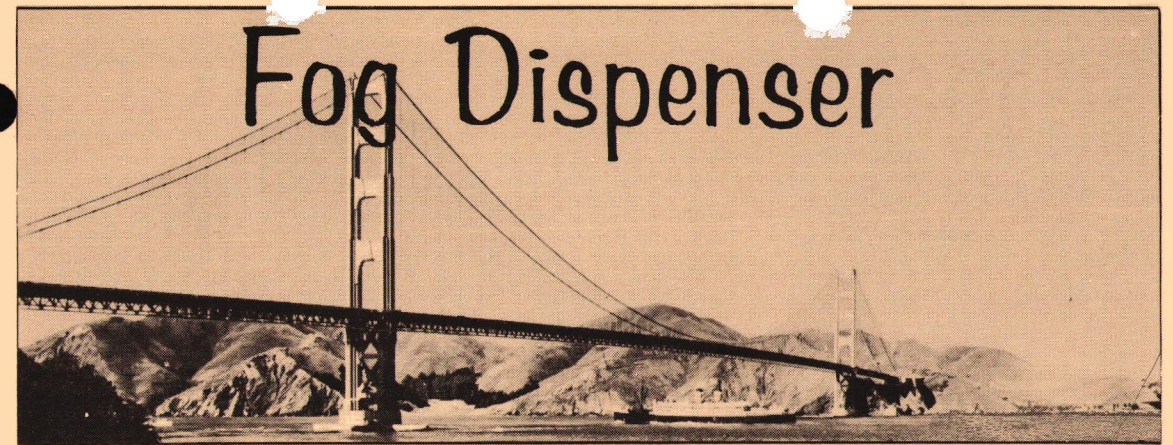
## GUESTS

Laurie Duggaves  
Don Kramer  
Dave Austin  
Bill Davidson  
Wayne Womer  
Bill Gebbie  
Frank Olsen  
Ron Johnson  
H.B. Richardson  
Rene Guillou  
William B. Milligan, Jr.  
Ben Tipay  
Philip Chien  
Steve Christian  
Sam Yamauchi  
Edw. A. Boyer  
Dan Marelich Jr.  
Bruck Steinwinter  
Walter Ross  
Milo Sands

Attendance Committee  
R. L. Herman

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Kasin, Guttman & Assoc.  
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Oakland School Dept.  
Burke & Co.  
Fulton Syphon  
Post Office Dept.  
Monterey Mech. Co.  
Tuttle & Bailey  
American Blower  
Air Filter Sales & Serv.  
Marelich Mfg. Co.  
Bentley Engineers  
Marelich Mfg. Co.  
R.B. Holland Co.  
Jos. E. Murray & Assoc.  
Engineered Air  
C. I. R. Co., Inc.  
RMK  
Trane Co.  
Complete Balance Eng.

Material Survey  
Charles & Braun  
Austin-Campbell  
Ray Winther Co.  
Westinghouse  
York Corp.  
Frank Olsen Co.  
Robert B. Holland Co.  
Univ. of Calif.  
Univ. of Calif. Davis  
Robertshaw Controls  
Robert B. Holland Co.  
Keller & Gannon  
Architect  
G.L. Gendler & Assoc.  
USAEC  
Marelich Mfg. Co.  
Harding Eng.  
Kaiser Eng.  
Kaiser Eng.



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XV No. 12

MARCH 1966

PROGRAM CHAIRMAN: BOB TUCK

The next Golden Gate Chapter meeting will be held at the Engineers Club, San Francisco, on Thursday, March 3, 1966, Social Hour - 5:30 to 6:30. Dinner promptly at 6:45 p.m.

## "INTEGRATED AIR DISTRIBUTION"

Mr. William Batchelor, Director of Engineering for Tuttle and Bailey, Division of Allied Thermal Corporation, will discuss integration of the air distribution system into building design.

The air distribution system is one of the many elements of air integrated ceiling design. The mechanical elements of the building, along with illumination, plumbing and communications, are inseparable elements of the total building construction, and must be integrated at the initial design concept to provide a functional, properly illuminated and acoustically comfortable, yet economically feasible building space.

Mr. Batchelor is an engineering graduate of Yale University. He is Director of Engineering, and has been associated with Tuttle & Bailey for the past eighteen years.

Mr. Batchelor is an active member of ASHRAE, and among his many activities are:

- Chairman - ASHRAE Guide and Data Book, 1967.
- Author - ASHRAE Guide, Chapter on Air Distribution Equipment.
- Member - ASHRAE committee on Sound Standard # 36-B.
- Member and Past Chairman - Air Diffusion Council, Engineering Committee.
- Member - I.B.R. Committee

MARCH ANGEL

WAGNER ELECTRIC CORP.

219 Shaw Road

South San Francisco, California

Phone: 761-0229



**PROMOTION OF ENGINEERS' WEEK con't.**  
latest in technical advancement to the benefit of the general public.

It was obvious that one of the largest engineering jobs in the country was the Bay Area Rapid Transit District and the District is cooperating fully in promoting the Engineers' Week theme.

Because this ultra-modern transportation system is getting closer and closer to operation, it was felt that the public will take a

great interest in how it is being developed. There is no type of engineering from ceramic to civil that is not somewhere involved.

The annual Engineers' Week banquet will be held February 24 at 8 P.M. at the Hilton Hotel. Tickets for the banquet, are priced at \$6.50 each.

The Bay Area Council is looking to our organization for support — **10 TICKETS MINIMUM!** Contact R.F. Chesebro immediately at MA 1-3868 for your tickets.

## ATTENDANCE AT JANUARY MEETING

### MEMBERS

Jack T. Chamberlain	Marelch Mfg. Co.
Gene W. Hughes	Scott Co.
Allan Ballard	Ballard Engr. Co.
Jerry Howarth	Kramer
C. E. McLaughlin	American Blower
Al West	Colan Heating
Ron Wilson	AAF
Jim Van Buskirk	A. O. Smith Corp.
Leo Dwyer	Ralston & Dwyer
Lewis Long	Wagner Elect.
Jos. E. Murray	J. E. Murray Assoc.
Tom White	American Blower
J. M. Nussbaum	Mfg. Rep.
Ken Mirov	Trane
Richard A. Charles	Charles & Braun
Robert H. Braun	Charles & Braun
Rudy Pribuss	Reichel Engr.
Jack Sprout	Ray Burner Co.
K. Guttman	Kasin & Guttman
Gene Valerio	E. B. Ward & Co.
Geo. N. Aronovsky	ITT Hayes
L. Shea	Shea Equip. Co.
Dick Friedman	Engineered Air
Robert Voelz	Skidmore Owings & Merrill
Gus Gendler	G. L. Gendler & Assoc.
Rod Kirkwood	John Graham & Co.
Arel W. Berrier	Berrier Sales
Donald Locke	C. B. Engineering
Dick Hamilton	Monterey Mech. Co.
John Brose	The Brose Co.
Walt Schneider	Kenward S. Oliphant
Jack A. Palmer	Calif. Hydronics Corp.
Jim Dana	G. M. Cooke Co.
Tom Campbell	Palmer Thermometers Inc.
C. Dombitsky	PBQ & D
Allan Gray	Dunham Bush
Wanda Berry	Marelch Mfg. Co.
Joe Beck	Atlas Heating
Per Sonander	Skidmore Owings & Merrill
Lew Pollack	Trane Co.
D. E. Keown	C. S. Hardeman Inc.
C. S. Hardeman	C. S. Hardeman Inc.
G. Yaffe	Tempco
H. Gaffney	C. S. Hardeman Inc.
Dave Rifkin	Cooling & Htg. Engrs.
Terry Scavone	A. R. Peterson
Don Campbell	Austin-Campbell Co.
John Lenihan	Burke & Co.
Richard E. Gee	Bayha, Weir & Finato
Bob Wistort	Boothe Radiant Heat.
Terry Purcell	Western Asbestos

### MEMBERS

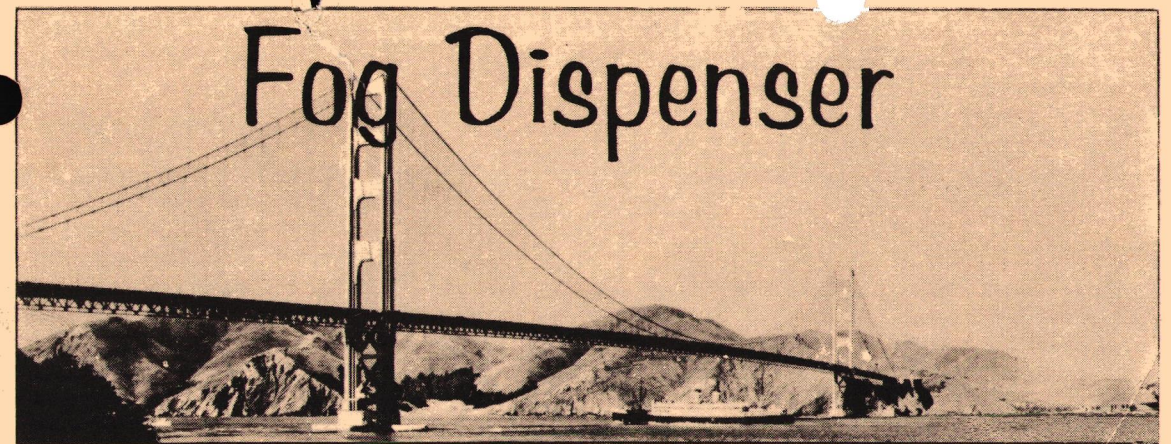
Karl Baldwin	Ramsey & Assoc. Ltd.
Jack Kniveton	Norman S. Wright & Co.
Bob Montgomery	Montgomery & Roberts
Jim Lazor	E. B. Ward & Co.
Rod Roberts	Montgomery & Roberts
Art Ciapponi	Pacific Pumping
Mike Reichlin	Pacific Pumping
Ray L. Heman	Calif. Pack.
John E. Werner	Trane Co.
Tom Gilbertson	Johnson Service
Dick Fujioka	GM & TR Simonson
Frank J. Mongraw	General Elect. Co.
Roger Chesebro	Fraser & Johnston
Bob Boyer	Honeywell
Peter Filios	Flame Air
Lou Gramaglia	Schlegel Mech.
John F. Dustin	J. F. Dustin Co.
Bob Swezey	Burke & Co.
Booth Thomas	Tuttle & Bailey
Bob Tuck	Tuttle & Bailey
Carl H. Jordan	Buonaccorsi & Assoc.
Ory Gruber	Buonaccorsi & Assoc.
Chuck Kopf	Robertshaw
Millar F. Clarke	GM & TR Simonson
Bill Barron	Wm. A. Barron Co.

### GUESTS

Frank A. Olsen	Frank A. Olsen Co.
Wayne Womer	Westinghouse
Wm. Milligan, Jr.	Robertshaw
Vic Bach	Western Plbg. & Htg.
Dan Marelch, Jr.	Marelch Mfg. Co.
Merlyn Doleman	Bank of America
Doug Abbott	Palmer Instruments
Duncan Kelly	G. M. Cooke Co.
Andy Feiner	Tempco
Carson Woo	Charles & Braun
Dan Kramer	Charles & Braun
Jim Emmons	C. S. Hardeman Inc.
Jim Witham	Fraser & Johnston Co.
Pay Geis	Engineered Air Systems
John Fumas	Hg. Elec. Vent. Co.
Don Huffine	Norman S. Wright & Co.
Ted VanDele	C. B. Engineering

### GUEST SPEAKERS

Bob Riedy  
Alvin Pelavin



GOLDEN GATE CHAPTER



ASHRAE

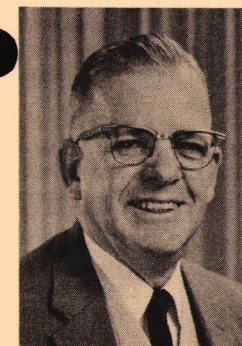
VOLUME XV No. 11

FEBRUARY 1966

PROGRAM CHAIRMAN: JERRY HOWARTH

The next Golden Gate Chapter meeting will be held at the Engineers Club, San Francisco, on Thursday, February 3, 1966, Social Hour — 5:30 to 6:30. Dinner promptly at 6:45 p.m.

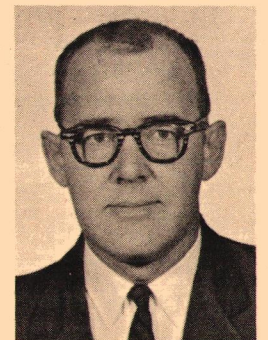
## "COLD STORAGE OF GRAPES AND TREE FRUITS IN CALIFORNIA"



Mr. H. B. Richardson

For many years the letters of our Society have indicated that refrigeration engineers are members and are active, but our Chapter has had very few meetings devoted to this field.

We feel fortunate in having the following speakers present a subject on Industrial refrigeration which should be of vital interest not only to the refrigeration engineers but to all members since agriculture plays such a prominent role in the economy of California.



Mr. Stuart Smith

The two men pictured, Mr. Stuart Smith of Sanger Ice and Cold Storage in Sanger, California; Mr. H. B. Richardson of the University of California at Davis, and Mr. Rene Guillo, not pictured, have had extensive experience in Cold Storage.

All members are urged to attend and bring as many guests as possible since this meeting should be of general interest to everyone.

FEBRUARY ANGEL

A. O. SMITH CORPORATION

2253 South Saybrook Avenue Los Angeles, California 90022 Phone: (213) 658-6770

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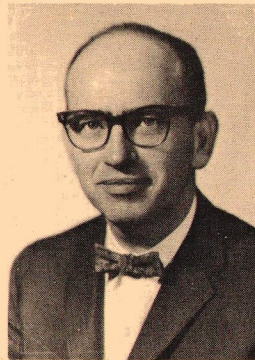
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### President's Corner

Gus Gendler



All of our committees are doing a fine job and deserve the support of the entire membership.

The National Research Fund is being actively promoted by our Joe Beck Jr., Bob Montgomery and Dick Charles. Bob reported at the last board meeting that the commit-

tee is preparing a list of local manufacturers, mechanical contractors, utility companies and consulting engineers; that is everyone whose livelihood is dependent on the research programs conducted by ASHRAE. You will soon be called on to assist the committee with their contact list or to contribute, on an annual basis, to the fund. At the January meeting Rod Kirkwood, Regional Director, made a sound case for your assistance to this worthy cause.

Carl Jordan chaired another very successful 'before the meeting' workshop on design and construction of duct work. Ken Mirov will lead the next discussion. Better come early to the February meeting so that you do not miss any of these very informative sessions.

Engineering Week Banquet at the San Francisco Hilton is coming soon (Thursday February 24th). Roger Chesebro is handling ticket sales. This meeting is very worth while, especially if you plan on taking a local high school student interested in science or engineering. Call Roger at MA 1-3868 for reservations.

Final Reminder: The fifth biennial Western Air Conditioning Exhibit and Conference takes place February 23 - 26th at the Shrine Exposition Hall, Los Angeles. Call Dick Friedman for information on program and tickets. A very full schedule of technical sessions has been arranged.

#### FEBRUARY WORKSHOP con't.

tem not working properly. Come one, come all and get in your two cents worth.

Please note on your attendance card if you plan to attend the **FEBRUARY WORKSHOP** meeting.

Ken Mirov

### ASHRAE - GOLDEN GATE CHAPTER MINUTES - JANUARY 6, 1966 ENGINEERS CLUB

The meeting was called to order at 7:40 P.M. with the introduction of members and guests.

The first order of business was the introduction of new members by Bob Tuck, Chairman of the Membership Committee. Dave Rifkin advised that the Roster would be published the following week and urged everyone to get their dues in. Bob Phillips advised that the Bay Area Engineers' Week Committee will use our guest speakers who were volunteered.

Carl Jordan stated that approximately 30 to 40 people had found seats at the Symposium Meeting and there were an additional 30 to 40 people standing around. The only essential thing that seemed to come out of it was that consulting engineers should have to pay for fire dampers which are not shown on job drawings.

Rod Kirkwood, Regional Director, was then introduced. Rod gave a briefing on the Research Fund and advised us of the forthcoming change in the Guide Data Books.

Under new business, a nominating committee was named. Carl Guttman, Karl Baldwin, Lewis Long and Lewis Pollock were voted to the committee.

Dick Friedman discussed the forthcoming Western Air Conditioning Show, February 23-26, 1966, to be held at the Shrine Auditorium in Los Angeles and urged members to attend. He also discussed briefly the semi-annual meeting in 1970. He stated further that the invoices for the Workshop would be mailed out in January or February and asked that we contribute generously.

Bob Voelz made a correction to the prior minutes to the effect that the meeting was held at the Engineers' Club in San Francisco, not in Sacramento.

Arel Berrier advised that the next meeting would pertain to cold storage and refrigeration. At 8:18 P.M. the break was made, at 8:30 P.M. Don Locke introduced the guest speakers. Mr. Doleman, Bank of America, Mr. Pelavin, on law, and Mr. Riedy, on insurance.

Mr. Doleman's talk was entitled "How You Look To Your Banker". He stated that the bankers are most interested in the method of financial reporting used, and be the basis cash, percentage of completion, or completed contracts. He then advised the audience on how they could look best to their banker and discussed techniques of financial planning.

Mr. Pelavin discussed lien rights, the benefits of corporate form of business organ-

#### MINUTES con't

ization, urged people to read contracts carefully before signing them, and that people should get insurance before they need it, not attempt to get it afterward.

Mr. Riedy then discussed what we could do to improve our bonding image. He related the background and sequence of operation of the decision making process and the issuance of bonds covering construction projects, capital requirements and ratios, financial statements, and gave us a bit of advice on what type of insurance programs to have.

The formal program was finished at 9:25 P.M. The speakers proved witty and quick on their feet and the question and answer period went on for another fifty minutes after the meeting.

The meeting was adjourned at 10:15 P.M.

Respectfully submitted,  
L. E. Shea - Secretary

Golden Gate Chapter - ASHRAE

#### January 17, 1966

WHY BAY AREA BUSINESS AND CIVIC LEADERS AND THE PRESS SHOULD SUPPORT - THE PROMOTION OF

ENGINEERS' WEEK, FEBRUARY 20 - 26

"Going to the moon is 85% engineering and 15% science".

A recent survey conducted by the U. S. Office of Education shows a steady drop since 1957 of engineering enrollment of total entering freshmen in United States colleges.

Engineers' Week for a number of years has been a promotion of the National Society of Professional Engineers to call to the attention of the American public the importance of engineering of all types to our society and its future. By so doing, it was hoped parents would be stimulated to encourage high school students to enter the field of engineering in college.

Working with the high schools themselves goes on the year 'round in the Bay Area. Scholarship committees work in some 80 high schools in counseling and in screening students to receive scholarship awards. Engineers' Week itself is aimed at parents, relatives and others who might influence college freshmen in entering the engineering profession.

To the present Bay Area Engineers' Week Committee, there has been a lack of widespread promotional activities to aid in obtaining its goal. So this year, their promotional effort is being increased.

In the planning stages for Engineers' Week, it was thought that a typical large engineering project in the Bay Area would help to point up how engineers apply the

## ATTENDANCE AT DECEMBER MEETING

## MEMBERS

Tom Gilbertson  
Clyde Wilson - Reid  
Charlie Butcher  
Gene Hughes  
Jim Curtin  
Don McLeod  
Bob Phillips  
Alexander Boome  
John A. Lord  
L. E. Long  
Pete Knezevich  
Leo Dwyer  
Gene DeWree  
J. E. Murray  
Al Scavino  
Clyde E. Wolters  
Ken Mirov  
Irving Alger  
Dick Fjuoica  
R. L. Herman  
Carl H. Jordan  
D. E. Keown  
H. Gaffney  
E. C. Leedom Jr.  
Lowell L. Young  
Sig. Kulka  
Fred Espey  
Mike Reichlin  
Al West  
Chuck McLaughlin  
Joe Beck  
George Aronovsky  
Dick Friedman  
L. Shea  
Robert Voelz  
Gus Gendler  
Charles Bailey  
A. W. Berrier  
R. E. Swezey  
Frank Gonden  
Don Campbell  
Bill Olson  
M. F. Clarke  
Ed. Collins  
Ted Skeels  
Fred Vann  
Ted Georgior

Johnson Service  
Clyde Equip. Co.  
Johnson  
Scott Co.  
Philco  
Simpson & Strata  
Kennedy Eng.  
A. B. Consulting Eng.  
Robertshaw  
Wagner Elect.  
Dyna - Mac Systems  
Ralston & Dwyer  
N. J. Haner  
Murray & Assoc.  
Murray & Assoc.  
San Francisco  
Trane  
GM & TR Simonson  
GM & TR Simonson  
Cal. Pack.  
Buonaccorsi & Assoc.  
C. S. Hardeman  
C. S. Hardeman  
Air Filter Sales  
Valley Sheet Metal  
Kulka Eng.  
I. L. G. Vent.  
Pacific Pumping Co.  
Colan Htg.  
American Blower  
Atlas Heating  
ITT Hayes  
Engineered Air  
Shea Equip.  
Skidmore Owings & Merrill  
G. L. Gendler & Assoc.  
Shell Dev.  
Berrier Sales  
Burke & Co.  
Bentley Eng.  
Austin - Campbell Co.  
G. L. Gendler & Assoc.  
Simonsons  
Safeway Stores  
Owens - Corning Fiberglass  
Vann Eng.  
Worthington

Earl Jacobs  
Karl Baldwin  
Gene Valerio  
Maurice Laks  
Miles Suda  
Peter S. Filios  
Sid Copland  
Art Ciapponi  
Dick Hamilton  
Howard Friesen  
Jim Van Buskirk  
Gerry Yaffe  
Tom Higashioka  
Walt Schneider  
John Capitulo  
Bob Beggs  
C. Dombitsky  
Jack A. Palmer  
H. Yahagi  
Steve Wei  
Ron Wilson

## GUESTS

Vic Bach  
Jim Hellwarth  
Earl Evans  
John Busch  
Karl Hanewald  
Charles Sanford  
Philip Chien  
Doug Angell  
W. Hanthorn  
H. Weihl  
Merwil Linsley  
R. J. Omania  
D. M. Kennedy  
John F. Duster  
Jack Chamberlain  
John Furnas  
P. Gujral  
Bill Hummel  
Dan Greenberg  
Terry Purcell  
Chuck McGriff  
R. V. Jones  
Pat Geis

Kennedy Eng.  
Ramsey Eng.  
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Barber - Colman  
A. O. Smith  
Tempco  
Higash Assoc.  
Kenward S. Oliphant  
Johns - Manville Sales  
P. W. Beggs & Son  
PBQ & D  
Cal. Hydraulics  
Bechtel  
Bechtel  
AAF

Western P & H  
Trane  
Air Filter Sales  
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Buonaccorsi & Assoc.  
Buonaccorsi & Assoc.  
Bentley Eng.  
Bentley Eng.  
Bentley Eng.  
Bentley Eng.  
J. F. Duster  
Marelch Mfg. Co.  
I. L. G. Vent.  
Bentley Eng.  
Owens - Coming Fiberglass  
Dow Chemical  
Western Asbestos  
J. E. Murray & Assoc.  
PBQ & D  
Engineered Air

## MAIL OR CALL NEWS TO:

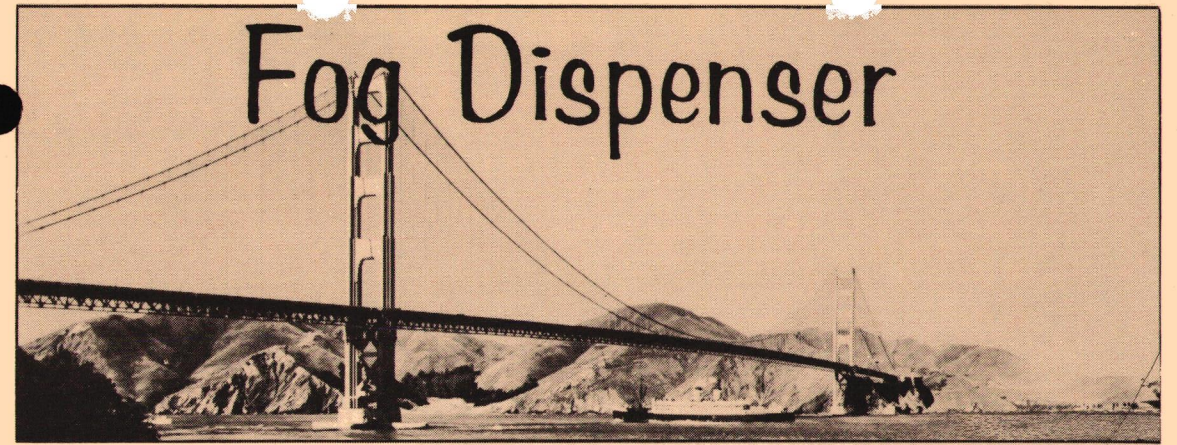
EDITOR, FOG DISPENSER

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R. F. MacDONALD - 850 MAHLER ROAD - BURLINGAME, CALIFORNIA

TELEPHONE: 697-0770

## Fog Dispenser



GOLDEN GATE CHAPTER



ASHRAE

VOLUME XV No. 10

JANUARY 1966

PROGRAM CHAIRMAN: DON LOCKE

The next Golden Gate Chapter meeting will be held at the Engineers Club, San Francisco, on Thursday, January 6, 1966, Social Hour - 5:30 to 6:30. Dinner promptly at 6:45 p.m.

HOW DO YOU LOOK TO:

YOUR BANKER  
YOUR INSURANCE MAN  
YOUR ATTORNEY

The January meeting will be of practical interest to all members and any of your guests who are in business. We feel that salesmen, manufacturer's representatives and all engineers should understand the basic principals and practical guide lines for conducting their everyday business. This meeting will, we hope, provide all members with the opportunity to ask any question pertaining to these subjects. All of our speakers are professional people with several years of background and experience in their field. Our Panel:

Mr. M. E. Doleman, Vice President (Banking)  
Corporate Finance Department  
Bank of America - Main Office  
300 Montgomery Street  
San Francisco, California

Mr. Alvin H. Pelavin (Attorney)  
Bacigalupi, Elkus, Salinger & Rosenberg  
300 Montgomery Street  
San Francisco, California

Mr. R. Riedy (Insurance)  
Costello and Riedy  
315 Montgomery Street  
San Francisco, California

Please invite your co-workers and your competitors. We will all learn how to better understand the practices of good business and thereby be of more value to ourselves, our employers and/or industry.

JANUARY ANGEL

CALIFORNIA HYDRONICS CORPORATION

640 Bryant Street

San Francisco, California

Phone: 397-2336



## THE SALESMAN



AND in those days, behold there came through the gates of the city a salesman from afar off, and it came to pass as the day went by he sold plenty.

And in that city were they that were the order takers and they that spent their days in adding to the alibi sheets. Mightily were they astonished. They said one to the other, "What the hell; how doth he getteth away with it?" And it came to pass that many were gathered in the back office and a soothsayer came among them. And he was one wise guy. And they spoke and questioned him saying, "How is it that this stranger accomplished the impossible?"

Whereupon the soothsayer made answer: "He of whom you speak is one hustler. He ariseth very early in the morning and goeth forth full of pep. He complaineth not, neither doth he know despair. He is arrayed in purple and fine linen, while ye go forth with pants unpressed.

"While ye gather here and say one to the other, 'Verily this is a terrible day to work', he is already abroad. And when the eleventh hour cometh, he needeth no alibis. He knoweth his line and they that would stave him off, they give him orders. Men say unto him, 'nay' when he cometh in, yet when he goeth forth he hath their names on the line that is dotted.

"He taketh with him the two angels, 'inspiration' and 'perspiration' and worketh to beat hell.

"Verily I say unto you, go and do likewise."

## Happy New Year

## NATIONAL ENGINEERS' WEEK

"Engineering . . . Creative Resource for Progress" has been selected as the theme for the 1966 National Engineers' Week, February 20-26, Jack T. Elmer, chairman of the Bay Area Engineers' Week Committee, announced today.

Mr. Elmer, who is with Kaiser Aluminum & Chemical Corporation Refractories Division, said the theme was based on the need "to call widespread public attention to the vital role played by science and technology in shaping the framework of our future technology and general way of life".

Engineers' Week is traditionally held during the week of the birthday of George Washington who was one of the country's great engineers as well as soldier, farmer and President.

In the San Francisco Bay Area, Engineers' Week is devoted to highlighting the engineering professions and, particularly, in finding and awarding scholarships to the outstanding high school senior science and mathematics students.

A special Engineers' Week scholarship committee divides the Bay Area into ten zones. Each school sends its outstanding science and math student to the zone competition, at which ten zone winners are selected.

The ten are further interviewed by a group of engineering professors, high school teachers, college deans and engineers from industry. One will be selected to receive the Engineers' Week scholarship of \$1000.00. Three others will receive scholarship of six to eight hundred dollars. Scholarship winners will be announced at the annual banquet at the Hilton Hotel, February 24, at 8:00 p.m.

Tickets for the banquet, which are priced at \$6.50 each, can be obtained from the following members of the Banquet Committee:

### BANQUET COMMITTEE

#### CHAIRMAN

Capt. John A. Clark 524-8087  
200 Willamette Avenue  
Berkeley, California 94708

#### CO-CHAIRMAN

Carl Kirker 362-7244  
111 New Montgomery Street  
San Francisco, California 94105

#### CO-CHAIRMAN

Ralph Fong 232-1514  
Standard Oil Co.  
of California Ext. 2352  
225 Bush Street  
San Francisco, California 94104

#### CO-CHAIRMAN

Baird Heffron 982-5674  
Heffron & Moulton  
Architects & Engineers  
717 Market Street  
San Francisco, California 94103

A Contact and Speakers Committee, headed by A. M. Thomson of Bechtel Corporation is available to give talks about Engineers' Week to any interested groups.

### DECEMBER WORKSHOP BIG SUCCESS

At the last ASHRAE Meeting the first session of the Workshop was held. Forty members were in attendance.

A number of opinions were set forth. It was felt that the use of splitter dampers in rectangular ductwork was desirable in preference to opposed blade or multi-blade volume dampers for handling branch air flows.

Some contractors said they prefer single line drawings and prefer that engineers show the CFM and static pressures desired at various branch points as well as outlets. It was felt that contractors could then design the ductwork according to the space available in a structure.

The question was raised as to whether or not a reducing elbow was less expensive than a full sized elbow with a reducer placed down stream of same. It was thought that the latter would be least expensive. It was also stated that short radius els with splitters were preferential to long radius elbows.

A number of members found that static pressure requirements were usually short of design and fans had to be speeded up. Others stated that static pressures on low velocity jobs tended to exceed that required. This is just an indication of the distance between theory and practice. In any event, it was felt that the fan suppliers should be responsible for the costs attendant upon changing belts and sheaves for changes in fan speeds. It was not readily determined who should be responsible if motors or electrical wiring had to be changed. Most members felt that statistically this is a relatively small problem, although an individual instance might be expensive.

Time ran out with much left to discuss. It is suggested that members invite engineers and contractors to the workshop. Those in attendance expressed very favorable comments. It was felt that while no conclusions are drawn on these things, communication of problems brings greater understanding and, ultimately, more desirable methods of doing things.

L. E. Shea