PROCEEDINGS

of

The Sixty-First Annual Meeting

of the

AMERICAN SOCIETY OF BAKERY ENGINEERS
1985



MARCH 3-6, 1985 CHICAGO, ILLINOIS

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Chicago Marriott Hotel, Chicago, Illinois

We gratefully acknowledge the cooperation of the business papers in the baking and allied fields for generously contributing space to describe the activities of the Society during the year. Our special appreciation to those which gave careful coverage to our Annual Meeting.

We extend our sincere thanks to the members of the Bakers Courtesy Club of Chicago who served during the Annual Meeting as ushers, microphone monitors and maintained the information desk. On behalf of our members, the Society thanks the "ASK ME" men for serving.

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American Society of Bakery Engineers

ROBERT A. FISCHER, PRESIDENT

Room 1921, Riverside Plaza Bldg. 2 North Riverside Plaza CHICAGO, IL 60606

61st ANNUAL MEETING

CHICAGO MARRIOTT HOTEL March 3-6, 1985 Chicago, Illinois

Introduction to the 1985 PROCEEDINGS

This issue of the PROCEEDINGS—as was the case with all previous issues—is intended as more than a transcript of the program of the Annual Meeting; it is a valuable reference source for technical information on bakery production. All members of ASBE receive a single copy as a privilege of membership and most of them consider the PROCEEDINGS as an indispensible addition to their libraries.

As a technical reference book, this volume includes reproductions in complete form of all papers which were presented, transcripts of the discussions following each paper, reproductions of the slides shown during the presentation of the papers, as well as of the handout

material distributed. This volume also contains a Subject Index for the 1985 Program, a list of papers presented from 1975 to 1984, and lists of Technical Bulletins and EIS Reports issued since 1975.

Besides the technical data, there is a registration list for the 1985 Meeting and reports on (1) other ASBE activities at the time of the Annual Meeting, (2) functions held by other groups, and (3) services rendered by members of the Bakers Courtesy Club of Chicago. A handy Table of Contents has been provided for ease in locating specific papers, reports and sections.

Total registration for the 61st Annual Meeting was 1,059—not including ladies who accompanied registrants and who received complimentary badges.

MEETING
INDUSTRY CHANGES
WITH CREATIVE
SOLUTIONS

61st ANNUAL MEETING

FOR YOUR INFORMATION

For your convenience in locating the various rooms in the Chicago Marriott assigned for our use, we list the floors:

PROGRAM MEETING ROOMS

Salon II—Seventh Floor Monday A.M. Session Monday P.M. Session Tuesday A.M. Session Tuesday P.M. Session Wednesday A.M. Session

OTHER

Ohio State and Northwestern Rooms—Sixth Floor
Advisory Committee Meeting
Purdue and Wisconsin Rooms—Sixth Floor
Luncheon for Advisory Committee
Ohio State and Northwestern Rooms—Sixth Floor
Executive Committee Meeting (Sun.)
Salon II—Seventh Floor
Program Participants' Meeting
A.S.B.E. Office—Seventh Floor
Lincolnshire I—Sixth Floor—Property Room
Foyer—Seventh Floor—Registration
Chicago Ballrooms A, B, C & D—Fifth Floor
Bakery Foods Display
Ohio State and Northwestern Rooms—Sixth Floor
Executive Committee Meeting (Wed.)

FOR YOUR CONVENIENCE

Restaurants in Chicago Marriott
Allie's Bakery
La Plaza
Upper Avenue Lounge
J. W.'s

PRIZES ON DISPLAY

See the prizes for the Wednesday morning attendance drawings in the lobby window of the gift shop on the north side of the lobby.

REGISTRATION

Please register promptly on arrival to prevent delays during meeting hours.

Registration Hours

 Sunday
 12 Noon to 5:00 P.M.

 Monday
 8:00 A.M. to 5:00 P.M.

 Tuesday
 8:00 A.M. to 5:00 P.M.

 Wednesday
 8:00 A.M. to 10:00 A.M.

Registration Desk

Seventh Floor Foyer

Please cooperate by keeping escalator landings free of crowds, and avoid group conversations in front of registration desks.

Registration Fees at Meeting

Members \$60.00 Non-Members \$80.00

Registration includes Officers' Reception and Bakery Foods Display. Admittance to these events is limited to registrants—by badge only.

INTRODUCTION

TO YOUR

61st ANNUAL MEETING

Welcome to the 61st Annual Meeting of the American Society of Bakery Engineers.

In preparing this year's Program, every effort has been made to implement your ideas as identified by a review of Program Planning Questionnaires, Program Reaction Sheets and specific correspondence received from members.

The Program Committee, collectively alert to the advancement of the science of baking, has selected speakers who are eager to take their time and energy to share information and personal expertise with fellow Engineers. If this attitude rings familiar, it is an essential part of the Society's Creed found on page 23 of this booklet.

The ultimate success of this year's program requires that you also be guided by the spirit of the Creed, attend each session, participate in the question and answer periods and critique individual papers and functions by completing the Reaction Sheets.

We, the Program Committee, Officers, Session Chairmen and program participants are glad you chose to be with us in Chicago and we sincerely hope you enjoy the Meeting. Thanks for you on-going support!

William T. ME Curry

WILLIAM T. McCURRY PROGRAM CHAIRMAN

J. W. Hickenhottom

Many & Stakel

JOSEPH W. HICKENBOTTOM FIRST ASSISTANT PROGRAM CHAIRMAN NANCY G. STAHEL SECOND ASSISTANT PROGRAM CHAIRMAN

AMERICAN SOCIETY OF BAKERY ENGINEERS

ROOM 1921, RIVERSIDE PLAZA BLDG.
2 NORTH RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606

JOINING THE SOCIETY

A non-member who joins the Society before registering for the 61st Annual Meeting can register as a member.

The Membership Committee maintains a desk in the registration area during the registration hours. Committee members are on hand to explain the benefits of membership and to assist in signing up new members.

AN EXPLANATION OF BADGES AND RIBBONS

Badge Inserts

Green for all registrants
A colored dot denotes a new member
(who has joined since 9/1/84)
A receipt for registration fee is
stamped on back of insert

Ribbons

White for overseas visitors
Silver, coral, ruby & gold for members with 25
years or more of continuous membership
Blue for members on the program
Green for Committee Chairmen, Advisory Committee and Executive Committee members

OFFICERS 1984-1985



FRANK R. GOLEY Chairman



ANTHONY N. INZERILLO Second Vice-Chairman



BENJAMIN A. DelORIO First Vice-Chairman



NORMAN F. HIRT Third Vice-Chairman



ROBERT A. FISCHER
President
Acting Secretary-Treasurer

PROGRAM CHAIRMEN 1984-1985



JOSEPH W. HICKENBOTTOM First Assistant Chairman



WILLIAM T. McCURRY Program Chairman



NANCY G. STAHEL Second Assistant Chairman

OFFICERS OF AFFILIATES TO ASBE

BRITISH SOCIETY OF BAKING

Chairman ... Dr. Peter S. Wood First Vice-Chairman ... Peter S. Massey Second Vice-Chairman ... Albert Waterfield Third Vice-Chairman ... Anthony A. Hodges Secretary ... Terry O'Gorman Assistant Secretary ... Helen Jones Treasurer ... F. G. Kinton

AUSTRALIAN SOCIETY OF BAKING

Chairman	John G. Gibbs
First Vice-Chairman	Ron Avis
Second Vice-Chairman	Ian Mercer
Third Vice-Chairman .	Diana Williams
Secretary-Treasurer	Desmond Hennessy

PRE-MEETING SCHEDULE OF EVENTS

SUNDAY, MARCH 3, 1985

11:00 A.M.—ADVISORY COMMITTEE

MEETING

Ohio State and Northwestern Rooms

Sixth Floor

(Committee members only)

1:00 P.M.—ADVISORY COMMITTEE

LUNCHEON

Purdue and Wisconsin Rooms

Sixth Floor

(Committee members only)

2:00 P.M.—EXECUTIVE COMMITTEE

MEETING

Ohio State and Northwestern Rooms

Sixth Floor

(Committee members only)

2:30-4:30-LADIES' TEA

Great America I & II

Sixth Floor

4:00 P.M.—PROGRAM PARTICIPANTS' MEETING

Salon II

Seventh Floor

(Speakers, session chairmen

and meeting chairmen only)

POST-MEETING SCHEDULE OF EVENTS

WEDNESDAY, MARCH 6, 1985

7:30 A.M.—NEW MEMBER BREAKFAST

Salon A

Fifth Floor

(By invitation only)

2:00 P.M.—EXECUTIVE COMMITTEE

MEETING

Ohio State and Northwestern Rooms

Sixth Floor

(Committee members only)

THURSDAY, MARCH 7, 1985

8:00 A.M.—PROGRAM COMMITTEE

MEETING

Lincolnshire II

Sixth Floor

(Committee members only)

SCHEDULE OF LADIES' ACTIVITIES

SUNDAY, MARCH 3, 1985

2:30-4:30 P.M.-Ladies' Tea

Great America I & II

Sixth Floor

MONDAY, MARCH 4, 1985

5:30-7:00 P.M.—Officers' Reception

Salon I

Seventh Floor

TUESDAY, MARCH 5, 1985

9:30 A.M.-4:00 P.M.-Ladies' Tour

and Luncheon

MONDAY MORNING PROGRAM

March 4, 1985

SALON II (Seventh Floor)

9:30-Meeting Room Opens

9:45-Call to Assembly and Greetings

FREDERICK J. BOWER, Winston-Salem, NC Meeting Chairman

Introduction of Officers

FREDERICK I. BOWER

Meeting Chairman

—America The Beautiful

ANDREW MAIER, II, Reading, PA

—God Bless America

Audience led by Andrew Maier, II

-Invocation

BYRON R. BAIRD, Fort Worth, TX

-The Chairman Comments

FRANK R. GOLEY, Dallas, TX

-The President Reports

ROBERT A. FISCHER, Chicago, IL

-Program Preview

WILLIAM T. McCurry, Shawnee Mission, KS

-Annual Business Meeting

Conducted by Frank R. Goley, Chairman

-Knowing Your Society

Group Trip Committee

Chairman Lon D. ZIMMERMAN, St. Louis, MO

-Invitation to 1985 IBIE Show

CLAYTON C. DALEY, Berwick, PA

Chairman

Presentations and Introductions

Greetings from the Retail Bakers

of America

ROBERT W. HILLER, Janesville, WI

President

-Greetings from the American Bakers

Association

George M. Wilson, Medley, FL

Chairman

-Introduction of Speaker

ANTHONY N. INZERILLO, Chicago, IL

Opening Address

DAVID LEAVENWORTH, Dallas, TX

Announcements

FREDERICK J. BOWER

Meeting Chairman

-Adjournment

MONDAY AFTERNOON PROGRAM

March 4, 1985

SALON II (Seventh Floor)

1:15—Meeting Room Opens

1:20—Call to Assembly

Benjamin A. Delorio, Utica, NY Meeting Chairman

-Introduction to Technical Production Session

WINN V. HORN, Richmond, VA Session Chairman

-Control of Bakery Waste Water

Perry Fisher, Campbell Taggart, Inc., Dallas, TX Treatment of bakery waste water to avoid regulatory problems and reduce sewerage

charges.

—Discussion

-Preventive Maintenance

Parker Ward, Continental Baking Co., Rye, NY

How to establish and maintain good preventive techniques.

-Discussion

-Degassing and Texturizing Doughs

RATCLIFFE W. HARRIS, AMF—Bakery Systems Div., Richmond, VA Quality improvements resulting from pumping, degassing, and recent developments in texturizing.

-Discussion

-Fermentation Forum

Brief presentations covering five different types of fermentation processes—followed by a panel discussion.

Straight/No-Time Dough Process

ALBERT A. GEIGENBERGER, Fink Baking Corp., Long Island City, NY

Sponge-and-Dough Process

Charles B. Clark, Shipley Baking Co., Fort Smith, AR

Continuous Mixing Process

F. H. Watkins, Jr., F. Watkins Corp., West Caldwell, NJ

Flour Pre-Ferments

EDGAR T. FIELDS, Northeast Foods, Inc., Philadelphia, PA

Water Pre-Ferments

Daniel M. Stakley, West Baking Co., Fremont, IN

-Panel Discussion

-Adjournment

MONDAY EVENING PROGRAM

March 4, 1985

SALON I (Seventh Floor)

5:30-7:00-Officers' Reception

GEORGE E. LAURANCE, Minneapolis, MN
Reception Chairman
ASBE Chairman Goley and the other officers, with their ladies, look forward to meeting fellow members and guests at this annual social event. Chairman Laurance has planned this event with your enjoyment in mind.

TUESDAY MORNING PROGRAM

March 5, 1985

SALON II (Seventh Floor)

9:45—Meeting Room Opens

9:50-Call to Assembly

Anthony N. Inzerillo, Chicago, IL Meeting Chairman

—Introduction to Technical Production Session

J. WILMAM LONG, Odessa, FL Session Chairman

-New Wheat Varieties

THOMAS C. ROBERTS, Wheat Quality Council, Manhattan, KS Higher yields for the farmer and maintaining consistent flour quality for the

taining consistent flour quality for the baker.

-Discussion

-Fats and Oils

ROBERT J. BAEUERLEN, Bunge Edible Oil Corp., Kankakee, IL
Physical properties and functional characteristics of edible fats and oils, and recent innovation in the technology of hydrogenation.

-Discussion

-Sweeteners

James A. Boge, ADM Corn Sweeteners, Skokie, IL Review of commodity and specialty sweeteners.

-Discussion

—Anti-Staling Systems

DR. MORTON S. COLE, Decatur, IL Review of enzymes with emphasis on new enzyme/emulsifier system which extends shelf life.

-Discussion

-Adjournment

TUESDAY AFTERNOON PROGRAM

March 5, 1985

SALON II (Seventh Floor)

1:45-Meeting Room Opens

1:50-Call to Assembly

NORMAN F. HIRT, Indianapolis, IN Meeting Chairman

-Introduction to Technical Production Session

CANDIDA C. WARD, NOTCOSS, GA Session Chairman

-Tortilla Production

CHARLES O. SCHMIDT, Electra Food Machinery, Inc., El Monte, CA Production methods, formulation and equipment.

-Discussion

-Biscuits

ROGER W. POEHLMAN, The Pillsbury Co., Arcadia, CA Production methods, formulation and

equipment for today's biscuit industry.

-Discussion

-New Trends in Small Cake Production WAYNE D. FREIHOFER, Chas. Freihofer Bak-

ing Co., Albany, NY Band-baked and cut items, European-style pastry, and icings and glazes.

-Discussion

-Frozen Dough Manufacturing

STUART ROSENHOLTZ, Leon's Bakery, Inc., Hamden, CT

DONALD F. FUHRMANN, Leon's Bakery, Inc., Hamden, CT

The production process and a discussion of ingredients and formulation.

-Discussion

-Croissants

CHARLES S. Rowe, Rheon U.S.A., Paramus,

Formulation, varieties and problems.

-Discussion

-Adjournment

TUESDAY EVENING PROGRAM

March 5, 1985

CHICAGO BALLROOMS A, B, C AND D (Fifth Floor)

4:45-7:00 P.M. Bakery Foods Display

HAROLD D. FORTNER, Elmwood Park, IL Chairman ALAN R. DEE, Franklin Park, IL Assistant Chairman FRANK SBERNA. Pickerington, OH Regional Chairman-East GEORGE H. COIN, Rock Island, IL Regional Chairman—Mid-Central ROLAN E. FLETCHER, Norcross, GA Regional Chairman-South JAMES D. KNOX, Hayward, CA Regional Chairman-West TOM MACDONALD. Franklin Park, IL. Regional Chairman—Northwest GERARD A. DEGNAN, Whitefish Bay, WI Regional Chairman—Central

JIM B. CHINGAS, Kankakee, IL. WILLIAM I. CROWTHER. Westmont, IL WILLIAM A. HOFFMAN, Chicago, IL FRANK C. JONES, Milford Square, PA GEORGE J. KIEFER, Huron, SD RICHARD L. KOENIG, Franklin Park, IL MELVIN W. MUELLER, Mt. Prospect, IL. VERNON T. E. PEARSON, Northbrook, IL ROBERT C. RADUENZ, Manitowoc, WI RONALD W. SAUL, Franklin Park, IL SHARRANN E. SIMMONS, Kankakee, IL ROGER W. STRAND, Minneapolis, MN

The Bakery Foods Display covers the widest possible variety of bakery foods from all corners of our country and from all over the world. It has practical significance in acquainting us with progress in our specialized field of production. It also instills in us the pride in the achievement of our industry and its contribution to human nutrition.

The Display opens at 4:45 P.M. Tuesday, March 5, 1985. ADMISSION BY BADGE ONLY. Samples in the general display area are to be VIEWED ONLY and may not be opened. Samples in the "tear-apart room" are open and can be examined closely. At 7:00 P.M. when the display closes, all samples will be turned over to the Salvation Army for local consumption.

We acknowledge with grateful appreciation the cooperation of our friends in the allied trades, who collected most of the bakery products for this Display. We also thank the donors of this merchandise. Their help makes this Display possible. Our thanks to our members who sent in the samples of their products.

WEDNESDAY MORNING PROGRAM

March 6, 1985

SALON II (Seventh Floor)

9:00-Meeting Room Opens

9:05-Call to Assembly

FRANK R. GOLEY, Dallas, TX Meeting Chairman

-Introduction to Technical Production

JACK F. B. BURRIS, III, Greensboro, NC Session Chairman

-Robotics

THOMAS F. SPOONER, Spooner Associates,

Current and potential use of robotics in the baking industry.

-Discussion

-Attendance Prize Drawing

-Programmable Controllers Symposium A three-part presentation followed by a panel discussion.

Introduction to Programmable

Controllers

GEORGE Y. JONES, Norand Corp., Cedar Rapids, IA

Definition of terms and discussion of industry status.

Programmable Controllers and Energy

STANLEY C. WALULEK, Drake Bakeries Div. Borden, Inc., Wayne, NJ

Uses of programmable controllers with ancillary equipment for energy conservation.

Programmable Controllers and Existing Equipment

Neil A. Bailey, Stroehmann Bros. Co., Norristown, PA

Uses of programmable controllers to retrofit existing equipment.

- -Panel Discussion
- -Attendance Prize Drawings
- -Maximizing Productivity

Dr. Darrell D. Brensing, American Institute of Baking, Manhattan, KS

Increasing productivity through training and communication

- -Discussion
- -Attendance Prize Drawing
- -Installation of Officers
- -Chairman's Comments and Appointments
- -Attendance Prize Drawing
- —The Lord's Prayer
 Andrew Maier. II, Reading, PA
- -Final Adjournment

SCHEDULE OF NON-A.S.B.E-MEETING FUNCTIONS

MONDAY, MARCH 4, 1985

American Institute of Baking Alumni Association Breakfast

7:30 A.M.—Indiana and Iowa Rooms—Sixth Floor James A. Boge, Chairman

KSU-FSU Bakery Science and Management Alumni Association Breakfast

7:30 A.M.—Denver and Houston Rooms—Fifth Floor Ross Holton, Chairman

TUESDAY, MARCH 5, 1985

Allied Trades of the Baking Industry, Inc. Early Bird Breakfast

8:00 A.M.—Salon III—Seventh Floor Thomas J. Degnan, Jr., Chairman

> Canadian Members Luncheon

11:45 A.M.—Denver and Houston Rooms—Fifth Floor Ed Warbeck and Sidney R. Rowell Chairmen

> Ohio Valley Bakers Club Luncheon

> > (Will not be held)

A.S.B.E. POLICIES AND GENERAL INFORMATION

COMMERCIALISM POLICY

If you have a question to ask or a statement to make during the sessions, request a microphone, rise, state, your name, city, and state, and then proceed. It is the FIRM POLICY of the Society that everyone appears as an individual and not as the representative of any commercial organization; hence, there shall be no commercial exploitation of any product, machine, equipment, brand name, firm name, patent, publication or service from either the speakers' platform or the floor.

ALLIED ACTIVITIES

All hospitality rooms are to be closed during all business sessions. It is also expected that commercial promotion of company or brand names will not be indulged in through such media as signs, room displays, motion pictures, general distribution of printed literature, samples, or advertising novelties. The usual cooperation of all allied firms in this policy which has been such an important factor in the success of our Meetings in past years is anticipated again this year.

BAKERY FOODS DISPLAY

Under no circumstances is anyone permitted to remove any bakery products from the display area either while the Display is open or after it closes.

JOINING THE SOCIETY

This is an excellent time to join the Society. Application blanks are available at the Membership Desk and signed applications will be accepted. A temporary receipt will be provided. Your official dues card, membership certificate and printed material will be mailed after the Meeting.

Also page 30 of this Program is a membership application form for your convenience.

PAYMENT OF DUES

Those desiring to pay dues during the Annual Meeting may do so at the Special A.S.B.E. Office located conveniently on the Seventh Floor. A.S.B.E. personnel will be on duty, and will give you a temporary receipt. Your dues card and membership certificate will be mailed to you after the Meeting.

WEAR YOUR BADGE!

You will be admitted to the Meeting ONLY if you are wearing your badge. Wear it proudly on your right lapel; it is your identification that you have registered for the 61st Annual Meeting.

COMMITTEES 1984-1985 EXECUTIVE COMMITTEE

Frank R. Goley, Dallas, TX Benjamin A. Delorio, Utica, NY Anthony N. Inzerillo, Chicago, IL Norman F. Hirt, Indianapolis, IN Robert A. Fischer, Chicago, IL Frederick J. Bower, Winston-Salem, NC Edward A. Stigler, LaPorte, IN Frank Bernard Evers, III, Nashville, TN Thomas J. Mato, Auburn, ME Patricia Antoni, Wheeling, IL Christopher V. Cipriani, Raleigh, NC John P. Del Campo, Wilmington, DE Loyal J. Jensen, Rye, NY Louis D. Fontana, Brooklyn, NY Jerry J. Janson, Olathe, KS Thomas F. Cable, Denver, CO Richard T. Richter, San Antonio, TX Bernard M. Russ, Minneapolis, MN J. Bowman Williams, Jr., Dallas, TX

STANDING COMMITTEES

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BAKERS COURTESY CLUB

The members of this very fine group of Chicago Allied Men and Women volunteer their services for our Meeting each year. They contribute greatly to the conduct and success of the Annual Meeting and we are pleased to publicly acknowledge their outstanding help again this year.

These individuals are identified by the familiar "ASK ME" badges. Please cooperate with them.

In addition to ushering during all regularly scheduled functions, they render valuable assistance in many other ways, namely:

- ... See that everyone is promptly seated.
- ... Prevent congestion at the door at all times.
- ... Man the microphones in the meeting room when you have a question to ask or a statement to make.
- . . . Assist where possible in providing information about the Meeting.
- ... Maintain an Information Desk in the fover. A courteous attendant is on duty at all times between and during sessions ready to be of service.
- ... Have a supply of Meeting registration lists available for those in attendance.
- . . . Receive telephone calls and personal messages which reach the hotel for those attending our Meeting. Interruptions to page are not permitted except in extreme emergencies.
- . . . Post notices of calls or messages on Message Board. By checking this board occasionally you can help them in their service to you.
- ... Distribute session material such as handout materials, etc.

This outstanding organization has long been of real service to us and to the industry of which we are all a part. May they continue to grow and prosper.

PAST PRESIDENTS

(Year of election shown)

1924-Richard Wahl, Palm Bay, FL 1925—C. J. Patterson (deceased) 1926 & 1927-E. B. Price (deceased) 1928—George W. Tassie (deceased) 1929—Gordon H. Darnell (deceased) 1930-Louis E. Caster (deceased) 1931-Ross E. Anderson (deceased) 1931—Ross E. Anderson (deceased) 1932—Robert L. Gerdes (deceased) 1933—Carl S. Pickering, San Diego, CA 1934—Edward M. Joy, Clearwater, FL 1935—F. B. Evers, Sr., Nashville, TN 1936—W. J. Ocken (deceased) 1937-John Roberts, Beaumont, TX 1938—Roger Brandenburg (deceased) 1939-William Hauck (deceased) 1940-Walter T. Molloy (deceased) 1941—Cecil C. Cadwell (deceased) 1942—Wm. F. Gossadge, Lee's Summit, MO 1943—Willard H. Geller (deceased) 1944-1945—Albert J. Faulhaber, Longboat Key, FL 1946—Guy T. Shiverdecker, Kettering, OH 1947-Jake M. Albright (deceased) 1948—Otto Richter, San Antonio, TX 1949—Harold T. Moody, (deceased) 1950-Don F. Copell (deceased) 1951-Earl B. Cox (deceased) 1952-Fred Weberpals, Queens Village, NY 1953-M. J. Swortfiguer (deceased) 1954—Wallace K. Swanson, Atlanta, GA 1955—Martin Eisenstaedt, Havertown, PA 1956—Arthur G. Hackett, Venice, FL 1957—Harold M. Freund, Beverly Hills, CA 1958—Andreas F. Reising, New Orleans, LA 1959—H. Alvin Meyer, Jackson, MS 1960-Clayton C. Daley, Berwick, PA 1961—Robert Nicolait, Santa Barbara, CA 1962—Robert G. Dibble, Bradenton, FL 1963—John A. Wagner, Sarasota, FL 1964—Walter T. Gase (deceased) 1965—Irwin O. Rohrbach, Reading, PA 1966—George H. Gugler, Sun Valley, CA 1967—Lawrence E. Pile (deceased) 1968—William C. Kollman, Wilton, CT 1969-William H. Ziemke, San Jose, CA 1970—Carl C. Hauswald, Jr., Baltimore, MD 1971—Robert C. Brink, Villa Hills, KY 1972-Louis J. Richter, San Antonio, TX 1973—Paul W. Kamman, Park Ridge, IL 1974—Charles B. Clark, Fort Smith, AR 1975-Eugene D. Swenson, Winter Haven, FL 1976-Donald S. Noot, Hazelwood, MO 1977-John L. DeKeizer, Deerfield, IL 1978-Byron R. Baird, Fort Worth, TX 1979—Frank H. Otway, Springfield, OH 1980—R. Richard Schlipf, LaCrosse, WI 1981—Ernest T. Stevens, Birmingham, AL

PAST CHAIRMEN

1982—Francis M. Covey, Hot Springs Village, AR 1983—Frederick J. Bower, Winston-Salem, NC

BE A BOOSTER MEMBER

To our members—if you have an associate or acquaintance who would benefit from membership in the Society—pass the application form in this book along to him.

PAST PROGRAM COMMITTEE CHAIRMEN

(Year of program shown)

1929-E. B. Nicolait (deceased) 1930-G. Cullen Thomas (deceased) 1931—Peter G. Pirrie (deceased) 1932-W. E. Doty (deceased) 1933-C. A. McDuffee (deceased) 1934-Ross E. Anderson (deceased) 1935—Charles P. Oliver (deceased) 1936-R. W. Brooks (deceased) 1937-W. E. Doty (deceased) 1938—Harold Hall, Port Angeles, WA 1939-O. S. Otting, New Smyrna Beach, FL 1940-George T. Carlin, Furman, AL 1941-G. Richard Ludlow (deceased) 1942-F. J. Coughlin, Cincinnati, OH 1943—Arthur E. Grawert (deceased) 1944—Henry P. Montminy (deceased) 1945-1946—Carl W. Steinhauer (deceased) 1947-J. H. Debs, Chicago, IL 1948-Tyler R. Stevens, Essex Junction, VT 1949-Glenn E. Hargrave (deceased) 1950—Charles E. Riley (deceased) 1951-Jack S. Devanny, Lincoln, IL 1952-Len P. Kenney (deceased) 1953-Elmer F. Glabe, Chicago, IL 1954—Jones E. Mapes (deceased) 1955-T. E. Lauder (deceased) 1956—Len Franzen (deceased) 1957-Ray Thelen, San Diego, CA 1958-Clifton R. Scarborough, Shawmut, AL 1959—Lewis P. MacAdams (deceased) 1960-Irwin O. Rohrbach, Reading, PA 1961-James M. Doty (deceased) 1962-Harry D. Gardner, Albion, MI 1963—Ralph E. Manewal (deceased) 1964—Lloyd L. Fisher, Sun City Center, FL 1965-Zenas Block, Jessup, MD 1966-William F. Schroeder (deceased) 1967-Frank R. Schwain (deceased) 1968—Philip W. Orth, Jr., Oak Creek, WI 1969—G. N. Bollenback, Washington, DC 1970—Gerald Reed, Milwaukee, WI 1971-Donald K. Dubois, Manhattan, KS 1972—Herman Saussele, Jr., St. Louis, MO 1973—Richard M. Beaverson, Dallas, TX 1974-Ernest O. Cain, Dallas, TX 1975-Frank E. Johnson, Oak Creek, WI 1976-Lyle C. Woods, Olathe, KS 1977—Armand P. Cicciu, Schenectady, NY 1978-Frank J. Fischer, Carrollton, TX 1979-J. W. Doty, North Kansas City, MO 1980-A. Charles Roland, III, St. Louis, MO 1981-F. Robt. Grant, St. Louis, MO 1982-A. G. Oszlanyi, Charlotte, NC 1983-Edward A. Stigler, LaPorte, IN 1984-Anthony N. Inzerillo, Chicago, IL

GROW WITH US

If you attended our Meeting as a Non-Member and feel you will benefit by membership in the Society, just fill in the form and mail to our office with 65.00 (\$5.00 is for initiation fee and \$60.00 dues for the fiscal year). This entitles you to all the publications issued during this period INCLUDING the complete transcript of the Annual Meeting PROCEEDINGS which alone is worth your initial investment.