



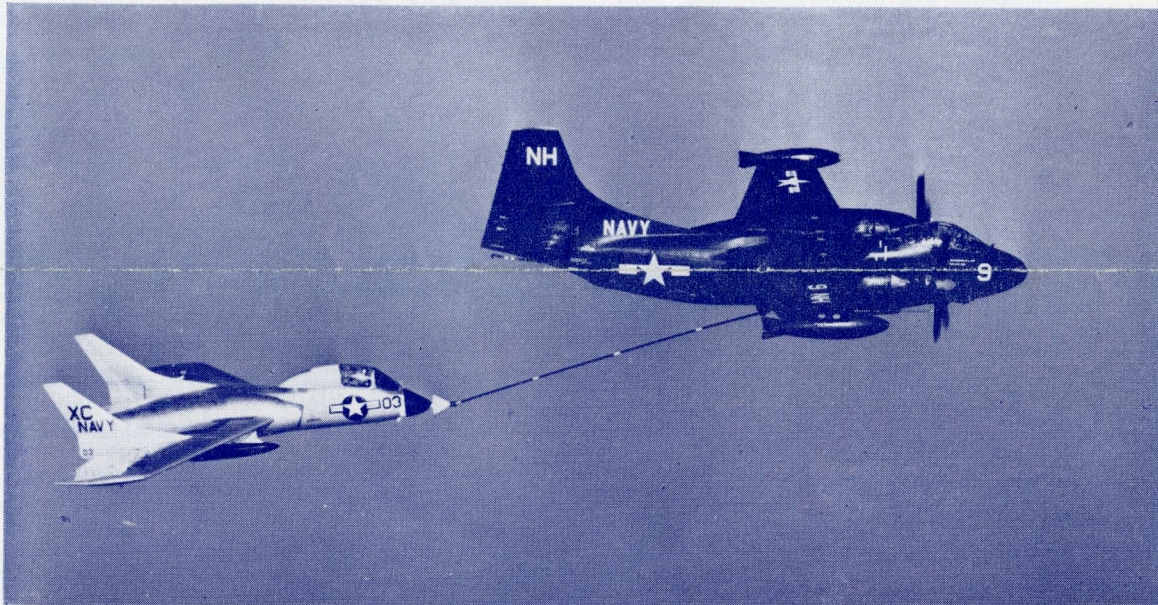
SOUTH WEST DISTRICT MEETING

April 2 - 4, 1956

Dallas, Texas

Headquarters:

Baker Hotel



Navy Vought F7U-3 Cutlass Receiving Fuel from an AJ-2 Tanker Plane *Official U. S. Navy Photo*

"ELECTRICITY IN AIRCRAFT"

Dallas and its sister city Fort Worth will be hosts to the South West District Meeting, April 2, 3 and 4, 1956. Since the Dallas-Fort Worth area is the second largest aircraft producing area in the United States, it is particularly fitting that "Electricity in Aircraft" be the theme of the Dallas meeting.

Dallas, with a population of 750,000, is a man-made city, the product of aggressive citizenship and engineering ingenuity. Dallas boasts many firsts, among them being the number one fashion and apparel manufacturing center of the South West, more bank deposits than any city in the South or South West, and the number one wholesale distribution center of the South West. But the vigorous, enthusiastic, young city admits one problem "Nothing in Dallas," said the late G. B. Dealey, "was ever built big enough."

MEETING FEATURES

Program—An outstanding, varied program has been arranged offering a wide choice of sessions on aircraft and aircraft applications, power generation, transmission and distribution, communications, management, and industry applications.

For the engineer interested in aircraft, there will be a complete schedule of aircraft technical sessions. Of special interest will be sixty exhibit booths by forty-four different exhibitors displaying the latest airborne electrical apparatus, components and support items. This is the first time in the history of the AIEE that exhibits have been an attraction at a district meeting.

For the electric utility engineer, the power generation technical sessions will place emphasis on new developments and new innovations in nuclear power and turbine and generator designs. The transmission and distribution sessions will place emphasis on insulation coordination and lightning arrester characteristics. The industrial groups will place their emphasis on electrical inspection and planned electrical expansion.

A special feature of the program will be a full session devoted to management. One of the South West's outstanding electric utility executives will present a panel of three industry presidents who will discuss this timely subject.

The number of papers per technical session has been limited so that each author may present his paper in full, yet allow some time for discussion.

Entertainment—An entertainment program has been arranged that will be thoroughly enjoyed by both the men and women.

Tuesday evening at 7 P.M. there will be an informal dinner dance in the beautiful Terrace Room of the Baker Hotel. A gala affair is planned with an outstanding name orchestra, and a floor show of the best in top flight entertainers. Tickets for this event are \$5.00.

"Cinerama Holiday" and Theater '56 will be playing during the meeting. The Republic National Bank of Dallas, the tallest building in the South West, may be visited during the spare time of our visitors.

Ladies' Entertainment—A suite for informal gatherings of the ladies will be available during the entire meeting at the Baker Hotel. Coffee will be served each morning at which time a door prize will be given. Cards and tables will be provided for bridge and canasta. The ladies are cordially invited to use these facilities throughout the meeting. Hostesses will be available to help arrange sight-seeing and shopping tours, or other activities.

Monday morning at 9:30 A.M. the ladies will be entertained at a "Get Acquainted Coffee" in one of the glamorous ballrooms of the new Statler Hilton Hotel. A door prize will be given to the lucky lady. There is no charge for this activity.

At ten o'clock Tuesday morning a brunch and fashion show is planned in the beautiful Zodiac Room at Neiman-Marcus. Door prizes will be given away to the lucky ticket holders. Price \$1.75.

Wednesday morning at 9:30 A.M. the ladies will board buses at the Baker Hotel and travel to the Dallas Athletic Country Club for a book review and luncheon. Door prizes will be given at this function, and exciting individual favors will be given to each lady. After the luncheon the chartered buses will take the ladies on a tour of Dallas. The price of the luncheon is \$2.75 and the charge for the round trip bus to the Dallas Athletic Country Club and the tour of Dallas is \$1.25.

Please indicate on the advanced registration card which activities you would like to attend.

Sports—For those who desire, arrangements will be made to play golf at any one of the beautiful Country Clubs in the vicinity of Dallas. Be sure to indicate on the advanced registration card your desire to play golf during the meeting. *Continued on page 4*

AIEE SOUTH WEST DISTRICT MEETING — PROGRAM — Dallas, Texas, April 2-4, 1956

ADVANCE COPIES OF PAPERS

Members may obtain preprints of Numbered Papers at the uniform price of 40¢ each (80¢ each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$10 denominations are available for those who wish to avoid remittance by check or otherwise. The Transaction Papers will also be published in the bimonthly publications.

NOTE: Unnumbered District papers (DP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the Transactions and are not presently scheduled for reproduction in any form by the Institute.

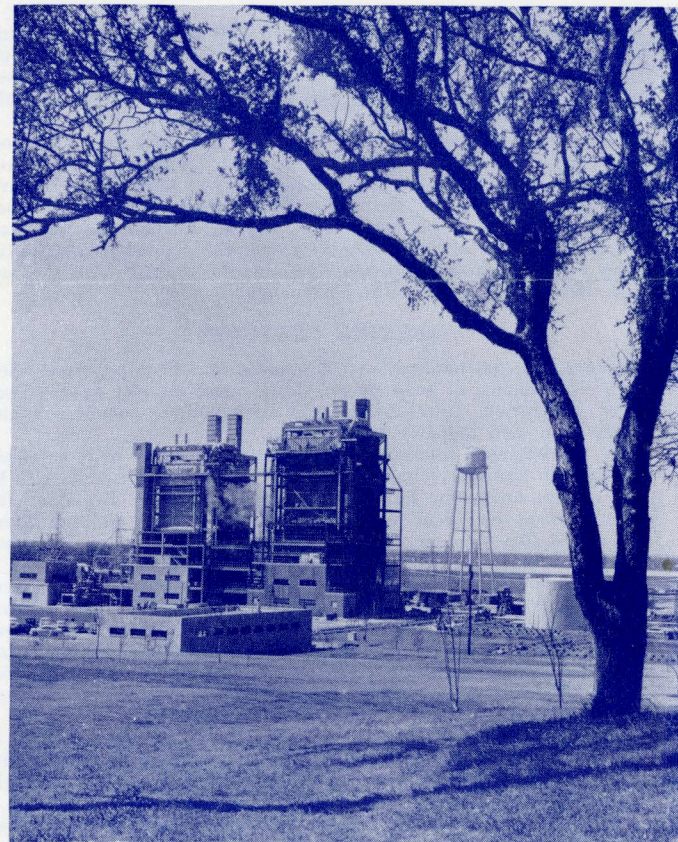
Monday, April 2

- 8:00 A.M.—Registration**
Mezzanine, Baker Hotel
- 10:00 A.M.—Transmission**
English Room, Baker Hotel
PAUL S. NEBLETT, Presiding
- DP.* Lightning Protection of H-frame Transmission Lines Using One Expulsion Protector Tube per Structure. J. F. Longley, West Texas Utilities Company.
- DP.* A Unique Design for 230 kv Wood Pole Transmission Line. Cedric W. Gragg and Harold N. Wright, Southwestern Public Service Company.
- DP56-433. Mutual Sequence Impedances of Parallel Transmission Lines. W. J. McKune, Georgia Institute of Technology.
- 10:00 A.M.—Distribution**
Room 5, Baker Hotel
JOHN HUTCHINSON, Presiding
- DP.* Use of Synthetic Resin in Splicing and Terminating Power Cables. Wayne A. Parker, Oklahoma Gas & Electric Company.
- DP.* Capacitor Switching to Control System Reactive. V. D. Weber, Oklahoma Gas & Electric Company.
- 10:00 A.M.—Industrial**
Camellia Room, Baker Hotel
FELIX S. GLAZA, Presiding
- CP56-14. Electrical Inspection of Petrochemical Plant Construction. N. D. Casdorff and J. H. Wieting, Carbide and Carbon Chemicals Company.
- DP.* A Planned Electrical Expansion. E. G. Parrish, Crossett Paper Mill, J. R. Scohy, Westinghouse Electric Corporation.
- 10:00 A.M.—Student Session**
Danish Room, Adolphus Hotel
- 10:00 A.M.—Aircraft Technical Session—Power Generation**
Texas Room, Baker Hotel
FRANK K. DOBBINS, JR., Presiding
- 56-434. Development of Definitions for Voltage Modulation Characteristics in 380 to 420 CPS Aircraft Electric Systems. Oscar Markowitz, U. S. Naval Air Development Center.
- DP56-462. An Automatic A-C Generating System for Aircraft. L. R. Oman, Boeing Airplane Company.
- 56-435. Parallel Operation of Aircraft A-C Generators: Reactive Load Division and Selective Protection. H. A. Kahle, Jack & Heintz, Inc.
- 56-436. Frequency Modulation and Load-Division Instability in Parallel Alternator 400-Cycle Aircraft Electric Systems. Henry Oman, Boeing Airplane Company.
- 12:15 P.M.—Luncheon**
Terrace Room, Baker Hotel
ELGIN B. ROBERTSON, Presiding
Hon. Donald A. Quarles, Secretary of The Air Force.
- 2:00 P.M.—General Session**
Terrace Room, Baker Hotel
SAM M. SHARP, Vice President District 7, Presiding
Address. C. J. McCarthy, Chairman of the Board of Chance Vought Aircraft, Inc.
- 7:00 P.M.—Power Systems**
English Room, Baker Hotel
JOHN B. ROBUCK, Presiding
- DP56-437. Automatic Load Frequency Control—Houston Lighting & Power Co. W. C. Gierisch and D. E. Simmons, Houston Lighting & Power Company.
- DP.* Reserve Capacity in Electrical Power Systems Requirements and Supplies. Arnold Rich, Federal Power Commission.
- 7:00 P.M.—Aircraft Technical Session—Transistor Applications**
Terrace Room, Baker Hotel
T. H. McNARY, Presiding
- DP56-458 Silicon Transistor Circuits for Aircraft Electrical Equipment. C. R. Rutherford, Temco Aircraft, Inc.

- DP.* Transistor Aircraft Interphone Amplifier Systems. Guy S. Rambie, Jr., Texas Instruments.
- DP56-463. A Transistorized Thermocouple Temperature Indicating System. George H. Cole, Minneapolis-Honeywell Regulator Co.
- DP.* Electrical Engineering Role in Nucleonics. W. J. Graff.

Tuesday, April 3

- 9:00 A.M.—Power Generation**
Roof Garden, Adolphus Hotel
LEE E. COOK, Presiding
- DP.* Nuclear Power Plant Development. R. W. Klecker, Allis-Chalmers Company.
- DP.* Progress in Nuclear Power Generation. A. G. Mellor, General Electric Company.
- DP56-460. Recent Advances in Turbine and Generator Designs. D. W. R. Morgan, Jr., and J. C. Cunningham, Westinghouse Electric Corporation.
- DP.* Trend and Development in Large Turbine Generators. J. A. Zimmerman, Allis-Chalmers Company.
- 9:00 A.M.—Transmission and Distribution**
Room 5, Baker Hotel
JOHN HUTCHINSON, Presiding
- DP.* Load Characteristics and Their Effects on Distribution System Design. H. E. Campbell, General Electric Company.
- 56-438. Connector Performance by Types. O. A. Boyer, Central Power & Light Company and Emerson Korges, Texas College of Arts and Industries.
- DP.* Fuse Protection of High Voltage Transformers. Ray Lerner, Texas Electric Service Company.
- 9:00 A.M.—Aircraft Technical Session—Protective Devices, Tests**
Texas Room, Baker Hotel
W. H. CROW, Presiding
- DP56-439. High-Phase Voltage Regulation on Aircraft Power Systems. R. J. Leppla, Jack & Heintz, Inc. and H. M. McConnell, Carnegie Inst. of Technology.
- 56-440. Negative Sequence Voltage Detection on Aircraft A-C Systems. R. D. Jesse and P. F. Boggess, Westinghouse Electric Corporation.
- 56-441. High Potential Testing of Aircraft Equipment Electrical Insulation. L. B. Kilman and J. P. Dallas, Hughes Tool Co.



Parkdale Steam Electric Station—Dallas Power and Light Company



Texas Instruments Company, Dallas

- DP.* A New Solution to the Aircraft Boresighting Problem. C. W. Clements, Convair.
- DP56-442. Recent Novel "Positive Action" Switch Designs. Howard F. Mason, Mason Electric Corp.
- 9:00 A.M.—Aircraft Technical Session—Electronic Applications**
English Room, Baker Hotel
C. W. MACUNE, Presiding
- DP56-465. Considerations in the Design of Aircraft Integrated Electronics Systems. Robert Olson, Collins Radio Co.
- DP.* Electronic Power Supplies in Aircraft. Henry T. Lowell, Sorensen and Company.
- DP56-461. Cold Cathode Triodes in Timing Circuits. H. Dean Gulnac, Los Alamos Scientific Laboratory.
- DP.* The Application of Wired Television to Augment and Extend Human Vision. Richard T. Silberman, Kay Lab., Inc.
- 9:00 A.M.—Chemical Session**
Tally-Ho Room, Baker Hotel
W. E. SILVUS, Presiding
- DP.* Problems of the Utilities Furnishing Power to Chemical Plants. M. T. Robbin, Houston Lighting & Power Co.
- DP.* Chemical Plants Considerations in the Use of Purchased Power. W. S. Miller, Diamonds Alkali Co. and J. H. Valcik, Shell Chemical Corp.
- DP.* Expansion of Electrical Facilities in Chemical Plants. H. N. Hickok, General Electric Co.
- DP.* Overall Aspects of Motor Control in Chemical Plants. H. E. McConnell, Consulting Engineer.
- 9:00 A.M.—Student Session**
Danish Room, Adolphus Hotel
- 12:15 P.M.—Luncheon—Honoring AIEE Board of Directors**
Grand Ball Room, Adolphus Hotel
P. G. WALLACE, Presiding
- 2:00 P.M.—Management Panel**
Roof Garden, Adolphus Hotel
R. D. LEDBETTER, Presiding
Panel Discussion by Leaders of Industry and Finance.
- 2:00 P.M.—Aircraft Technical Session—Environmental Design**
Texas Room, Baker Hotel
HAROLD FELIX, Presiding
- DP.* Electronic Equipment Design Considerations Relative to Vibration and Shock. B. L. Powell, Chance Vought Aircraft.
- DP.* Design of Electronic Equipment to Resist Shock and Vibration. Kenneth C. York, Convair.
- DP56-443. Electronic Equipment Environmental Control in High Performance Aircraft. H. R. Wesson, Convair.
- DP56-444. An Effective Method of Forced Air Cooling Airborne Electronic Equipment. H. H. Thompson, Melpar, Inc.
- 2:00 P.M.—Chemical Session**
Tally-Ho Room, Baker Hotel
J. E. PARKER, Presiding
- DP.* High Voltage D-C Testing of Cables and Cable Fault Locations. B. J. Nankervis, Dow Chemical Co.
- DP.* Corona in Metal-Clad Switchgear. H. O. Borque, Ethyl Corp.

- DP.* Problems and Limitations of Electrical Installations in Class I, Groups A & B, Hazardous Locations. Dick Scott, Crouse-Hinds Co.
- DP.* Motor Insulation Developments in the Chemical Industry—Now and Tomorrow. Jack T. Wilson, Louis Allis Co.
- 7:30 P.M.—Dinner Dance—Entertainment**
Terrace Room, Baker Hotel
GEORGE SMITH, Presiding

Wednesday, April 4

- 9:00 A.M.—Distribution and Substation**
Texas Room, Baker Hotel
Distribution Lightning Arrester Panel Debate.
B. M. Galleher, Presiding, Texas Electric Service Company.
G. R. Coffman, Moderator, Texas Power & Light Company.
N. C. Spencer, Gulf States Utilities.
D. P. Wooldridge, Dallas Power & Light Company.
Ed Allen, General Electric Company.
A. M. Opsahl, Westinghouse Electric Corporation.
J. H. Wilcox, Joslyn Company.
H. O. Stoelting, Line Material Company.
- DP.* Insulation Coordination as Affected by New Arrester Characteristics. A. M. Opsahl, Westinghouse Electric Corporation.
- 9:00 A.M.—Aircraft Technical Session—Power Supplies**
Camellia Room, Baker Hotel
E. L. CLARK, Presiding
- DP.* An Evaluation of Lightweight Storage Batteries. Ward Carter, Bell Aircraft Corporation.
- 56-445. Recent Trends in Aircraft Ground Power Electrical Equipment. H. S. Sechrist, M. Rosenblatt and C. M. Bryant, General Electric Co.
- DP56-446. Development of a Precisely Controlled Ground Power Unit. H. A. Slingsby, Beech Aircraft Corp.
- DP.* Integration of D-C Power Supplies for Airborne Electronic Equipment. J. M. Murphy and H. D. Stevens, Convair.
- DP56-447. Design and Development of New Silicon Rectifier D-C Power Supply. H. B. James, Westinghouse Electric Corporation.
- 9:00 A.M.—Aircraft Technical Session—Feedback Control**
English Room, Baker Hotel
A. R. TEASDALE, Presiding
- DP.* Spurious Signals in Missile Autopilot Systems. Ken Day, Chance Vought Aircraft.
- DP56-466. Hydraulic Servomechanisms for Aircraft Stability Augmentation. S. E. Asendorf and A. P. Rasmussen, Westinghouse Electric Corporation.
- DP56-468. Analysis of Sampled Data Servomechanisms by the Root Locus Method. Donald F. Sellers, Chance Vought Aircraft.
- DP56-448. Airborne Analog Computer Plots Aircrafts Own Position on a Mercator Chart. T. A. Westover, Servo Corporation of America.
- 56-449. Important Factors Influencing the Choice between a Synchro and a Potentiometer as an Angular Position Pickoff. H. A. Dinter, Jr., Minneapolis-Honeywell Regulator Co.
- 2:00 P.M.—Switchgear**
Texas Room, Baker Hotel
O. A. BOYER, Presiding
- 56-225. Vacuum Switches for Power Systems. J. E. Jennings, H. C. Ross, Jennings Radio Mfg. Co. and A. C. Schwager, Schwager-Wood Corp.
- DP.* New Braided Side-Break Switches. S. C. Killian and Robert Kleb, Delta-Star Electric Company.
- 2:00 P.M.—Aircraft Technical Session—Reliability, Testing**
Cactus Room, Adolphus Hotel
R. S. OLSON, Presiding
- DP56-467. Flight Safety Aspects of Electrical Design. W. F. Funk, Convair.
- DP56-459. Testing Aircraft Electrical Equipment for Specification Compliance. B. B. Shuffler, Convair.
- DP56-464. Production Testing A-C Power Systems after Aircraft Installation. R. A. Klotz, Douglas Aircraft Co., Inc.
- 56-450. Analyzing Missile Electrical System Reliability. B. J. Wilson, Naval Research Lab.
- 2:00 P.M.—Communications and Supervisory Control**
Camellia Room, Baker Hotel
GIBBS DYER, Presiding
- DP.* A Portable VHF Radio System with Three Multiplex Channels for Emergency Communications. C. F. Crandell and B. Bartel.
- DP56-457. Remote Controlled Unattended Pump Stations Utilized by Great Lakes Pipe Line Company. P. R. Madden, Great Lakes Pipe Line Co. and A. P. Riehl, Westinghouse Electric Corporation.
- DP.* Simplify Utility Radio Communications. F. Vinton Long.

*District Paper

Meeting of Board of Directors—A meeting of the Board of Directors of the Institute will be held Tuesday, April 3rd. There will be a luncheon that day in the Grand Ball Room of the Adolphus Hotel honoring the Board. All members in attendance at the meeting are most cordially invited to this luncheon.

Student Program—The student program will consist of the District 7 Student Branch Paper Competition which will be held on Monday from 9:00 A.M. to 5:00 P.M. and on Tuesday from 9:00 A.M. to 3:00 P.M.

Of special interest to the students will be a Tea Dance in the Student Center on the S.M.U. Campus from 3:30 P.M. to 6:00 P.M. on Tuesday.

Special arrangements have been made with the Baker and Adolphus Hotels for the housing of students, minimum four to five to a room at a rate of \$3.00 per day for students. If you have not made your reservations with your Student Councilor, please make hotel arrangements promptly, direct with the hotel preferred, specifically referring to the AIEE meeting.

Inspection Trips—Inspection trips have been arranged which will be of considerable interest to all of our visitors. These trips are as follows:

Tuesday Morning—April 3, 1956

8:30 A.M.—Bell Aircraft Corporation

9:00 A.M.—Southwestern Bell Telephone Company
Haskell Avenue Toll Center

Tuesday Afternoon—April 3, 1956

1:30 P.M.—Chance Vought Aircraft, Inc.

2:00 P.M.—Republic National Bank Building

Wednesday Morning—April 4, 1956

9:00 A.M.—Texas Instruments, Inc.

9:00 A.M.—Dallas Power & Light Company
Parkdale Power Plant

At Bell Aircraft the most famous of the models is the Model 47 Helicopter used extensively by all branches of our armed services.

The nine-story Southwestern Bell Toll Center is the second largest long distance switching center in the United States.

The latest jet news concerning the Chance Vought Aircraft Company concerns the Navy's granting of a \$100,000,000 contract to produce the F8U-1 jet Crusader which company officials describe as the world's fastest Navy fighter.

Texas Instruments is well known in the electronic industry for its progress in the development and production of transistors, tiny and durable substitutes for vacuum tubes. This company is also an important producer of electronic components such as transformers, resistors, capacitors, and delay lines.

The Dallas Power & Light Company Parkdale Power Plant is a modern outdoor type plant with two units in service with a generating capability of 202,000 kilowatts. Construction of a third unit which will be capable of producing 125,000 kilowatts is well under way and will go on the line in 1957.

Transportation for the inspection trips will be \$1.00 per person for each trip taken with the exception of the Republic National Bank which is within walking distance of the meeting.

Please indicate on the advanced registration card the inspection trips you will attend. If insufficient interest in one or more of the

trips is indicated by advanced registration, the trips will be cancelled.

Hotel Reservations—Reservations are to be made directly with the hotels, pointing out attendance at the AIEE meeting. Please do not write to more than one hotel. Ask the hotel to confirm your reservation. If your request cannot be filled, the hotel will automatically refer your request to the Chairman, Hotels Committee, who will obtain a similar reservation at another of the hotels. Reservations will be confirmed to you directly.

The Baker Hotel has been designated as Headquarters for the Meeting. However, some of the activities will take place at the Adolphus Hotel located across the street. Blocks of rooms have been set aside at the following hotels with rates as indicated.

Baker Hotel

Single Rooms for 1—\$5.00, \$5.50, \$6.00, \$6.50, \$7.00, \$8.50, \$9.50, \$10.00, \$11.00

Double Rooms for 2—\$7.00, \$7.50, \$8.00, \$8.50, \$9.00, \$10.50, (Double Bed) \$11.50

Twin Bedrooms for 2—\$8.50, \$9.00, \$9.50, \$11.50, \$12.00, \$13.00, \$14.00

Parlor Suites—\$23.00, \$32.50 and up.

Adolphus Hotel

Single Rooms for 1—\$5.00, \$6.00, \$7.00, \$10.00

Double Rooms for 2—\$8.00, \$8.50, \$10.00, \$12.00, \$13.00 (Double Bed)

Twin Bedrooms for 2—\$8.00, \$10.00, \$12.00, \$13.00

Parlor Suites—\$20.00, \$22.00, \$25.00

Statler Hilton Hotel

Single Rooms for 1—\$7.00, \$8.50, \$13.00

Double Rooms for 2—\$10.50 and up (Double Bed)

Twin Bedrooms for 2—\$12.00 and up

Parlor Suites—\$20.00 and up

For members attending this meeting who prefer to stay at a motel, a few are listed as follows:

Belmont Motor Hotel, 901 Forth Worth Avenue

Dallasite Motor Hotel, 4126 N. Central Expressway

Eastern Hills Motel, 3422 Samuells Blvd.

Lido Hotel Courts, Highways 67 and 80, near Loop 12

Tower Hotel Courts, 10108 Harry Hines Blvd.

No rooms at the motels have been set aside for this meeting.

Registration Fees

Members \$3.00

Non-Members \$5.00

Student Members None

Families of Members None

The difference between member and non-member registration fees will be rebated to non-member registrants who file applications within thirty days after the meeting, provided the applications are accepted.

The Members of the District Meeting Committee are: S. M. Sharp—Vice President District 7; George A. Smith, Jr.—General Chairman; Paul S. Neblatt—Vice Chairman; O. S. Hockaday—Vice Chairman; John Hutchison—Vice Chairman; Elgin B. Robertson—Vice Chairman; C. A. Maas—Vice Chairman; John B. Robuck—Secretary; John L. Pratt—Chairman, Finance Committee; P. G. Wallace—Chairman, Program Committee; Felix Quirino—Vice Program Chairman, Aircraft; Gibbs A. Dyer—Vice Program Chairman, Communications; Wendell Fowler—Vice Program Chairman, Utilities; R. D. Ledbetter—Vice Program Chairman Utilities; J. R. Duff—Chairman, Exhibits; Jack C. Bibbs—Vice Chairman, Exhibits; H. L. Reynolds—Chairman, Hotels Committee; C. F. Crandall—Chairman, Registration Committee; E. C. Wise—Chairman, Transportation Committee; Curtis Musgrove—Chairman, Dinner Dance Committee; Lewis J. Blaize—Co-Chairman, Inspection Trips Committee; E. W. Rogers—Co-Chairman, Inspection Trips Committee; Mrs. Estes C. Thompson—Chairman, Ladies Committee; Robert T. Martin—Chairman, Publicity Committee; Finley W. Tatum—Chairman, Students Committee; Floyd McKenna—Chairman, Luncheon Committee; John Sandlin—Chairman, Sports Committee; George Pingree—Chairman, Reception Committee.

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Bell Aircraft Model 47G Helicopter