

SOCIETY OF AERONAUTICAL
WEIGHT ENGINEERS, INC.

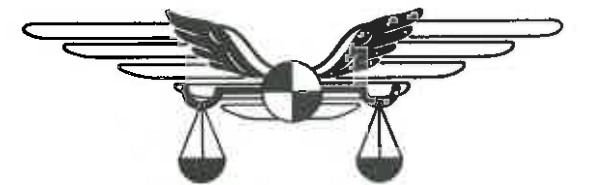


1943

Yearbook

VOLUME THREE · NUMBER ONE

SOCIETY OF AERONAUTICAL
WEIGHT ENGINEERS, INC.



1943

Yearbook

VOLUME THREE · NUMBER ONE



In Appreciation to
DONALD R. WATSON
Fleetwings, Inc.

The 1942 Members of the S. A. W. E. wish to dedicate this issue of the yearbook to you and your Company, to indicate, in a small way our appreciation for the Society's progress, made possible by your persevering endeavor and the gracious cooperation of Fleetwings, Incorporated.

Please accept our sincere thanks.

1942 MEMBERS

Foreword

The Yearbook of the Society of Aeronautical Weight Engineers, Incorporated, is a regular annual publication of the Society, and is issued the first of every year to all members in good standing. It consists of the Society By-Laws, the Roster for the preceding year, summaries of meetings and business transacted, accomplishments, proposed program for the following year, and items of general interest to all members and persons interested in the activities of the Society. In short, it will be a complete summary of the activities of the Society for the year just completed.

It is hoped that the S. A. W. E. Yearbook will draw the interest of companies and organizations not participating in the projects of the Society until the the entire Aviation Industry is engaged in the activities that the S. A. W. E. launches in the interest of both more efficient weight control and more economical weight control procedure. In order that we may produce and operate the most efficient airplanes in the world, full cooperation with weight control projects should be realized.

THE YEARBOOK COMMITTEE

SOCIETY OF AERONAUTICAL

WEIGHT ENGINEERS, INC. * *Year Book 1943*

*5 service points
speed ADEL'S war deliveries*



The zooming aircraft production picture with tremendous inland branch plants plus the world-famous productive genius of the now converted automotive industry finds ADEL keeping pace with new sources of supply and engineering counsel. With 3,000 types and sizes of line support, hydraulic and anti-icing equipment in mass production and deliveries up several hundred per cent, we are proud to be doing our share to speed the day that more and more T.N.T. blasts Tokyo!

ADEL
BURBANK, CALIF.

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Year Book 1943

FIRST OFFICERS OF THE S. A. W. E.
(Elected as Acting Officers for 1939)

<i>Chairman</i>	Lyle R. Hackney	Lockheed Aircraft Corporation
<i>Secretary</i>	Edward S. Fife	Vultee Aircraft, Incorporated

OFFICERS OF THE S. A. W. E. DURING 1940

<i>Chairman</i>	Lyle R. Hackney	Lockheed Aircraft Corporation
<i>Vice-Chairman</i>	Edward S. Fife	Vultee Aircraft, Incorporated
<i>Secretary-Treasurer</i>	Mel Huber	Douglas Aircraft Company, Inc.
<i>Recording Secretary</i>	Lee S. Hamilton	Lockheed Aircraft Corporation
<i>Chairman—Eastern Division</i>	Donald R. Watson	Fleetwings, Incorporated

EXECUTIVE COMMITTEE MEMBERS FOR 1940

O. S. Limbaugh	Douglas Aircraft Co., Inc.	G. Victor Johnson	North American Aviation
Harold J. Anderson	Douglas—El Segundo Div.	Ed L. Payne	North American Aviation
Lloyd Kernkamp	Douglas—El Segundo Div.	Fred J. Baum	Northrop Aircraft, Inc.
Donald R. Watson	Fleetwings, Incorporated	Frank J. Meyer	Northrop Aircraft, Inc.
Kingo Takasugi	Harlow Aircraft Company	John E. Ayers, Sr.	Vega Airplane Company
Walter A. Semion	Hughes Aircraft Company	Vincent H. Trotter	Vega Airplane Company
Karl D. Schwendener	Librascope, Incorporated	O. Edward Hopler, Jr.	Vultee Aircraft, Inc.
Ed J. Marsh	Lockheed Aircraft Corp.	Martin Boe	Vultee Aircraft, Inc.

CHARTER MEMBERS OF THE S. A. W. E.

Members of the Society of Aeronautical Weight Engineers who attended any meeting of the Society during the year of 1939, and were thereby members of that group that contributed so much to the planning and the founding of the Society, have been given the distinction of Charter Membership. Although this membership rating is not covered in the By-laws of the Society, this honor was voted to the following members in one of the early meetings of the year of 1940:

Harold J. Anderson	A. W. Courtial	Lyle R. Hackney	O. S. Limbaugh	J. V. Rich
John R. Anderson	James A. Crabtree	Lee S. Hamilton	Ed J. Marsh	Charles H. Richart
John E. Ayers, Sr.	E. Davis	Casper J. Henkel	William A. Martin	D. Rose
Bruce F. Bauer	Walton H. Decker	R. W. Hill	Robert A. Mundhenk	E. A. Rossman
Lyle C. Bjorn	William R. Downs	O. Edward Hopler, Jr.	C. T. Mulcher, Jr.	Walter A. Semion
Martin Boe	Edwin T. Fahlen	Mel Huber	William Nagy	Carl H. Schramm
R. D. Bond	Edward S. Fife	Milton D. Hunnex	Ed Nash	Harold W. Strand
J. Emerick Brown	Frederick A. Ford	G. Victor Johnson	Ed L. Payne	Vincent H. Trotter
Raymond O. Clark	Reginald E. Foster	Lloyd F. Kernkamp	Allen A. Pierce	Stanley Vye
	J. Henry Gunning	Theodore R. Kugler	John C. Reams	

NATIONAL OFFICERS FOR 1941

<i>Chairman</i>	John E. Ayers, Sr.	Vega Aircraft Corporation
<i>Vice-Chairman</i>	Frank J. Meyer	Northrop Aircraft, Incorporated
<i>Secretary-Treasurer</i>	Walter A. Semion	Hughes Aircraft Company

EASTERN DIVISION OFFICERS FOR 1941

<i>Chairman</i>	Donald R. Watson	Fleetwings, Incorporated
<i>Vice-Chairman</i>	Paul J. Dillon	Grumman Aircraft Engineering Corp.
<i>Secretary-Treasurer</i>	Louis C. Miller	Brewster Aeronautical Corporation
<i>Recording Secretary</i>	William H. Downs	Republic Aviation Corporation

LAKES DIVISION OFFICERS FOR 1941

<i>Chairman</i>	Stanley R. Huls	Materiel Division, Air Corps
<i>Vice-Chairman</i>	Seymour W. Dunham	Materiel Division, Air Corps
<i>Secretary-Treasurer</i>	Wayne B. Withers	Materiel Division, Air Corps

PLAINS DIVISION OFFICERS FOR 1941

<i>Chairman</i>	C. Ray McWhorter	Curtiss-Wright, St. Louis Plant
<i>Secretary-Treasurer</i>	Hugh A. Ferry	Curtiss-Wright, St. Louis Plant

WESTERN DIVISION OFFICERS FOR 1941

<i>Chairman</i>	John E. Ayers, Sr.	Vega Aircraft Corporation
<i>Vice-Chairman</i>	Frank J. Meyer	Northrop Aircraft, Incorporated
<i>Secretary-Treasurer</i>	Walter A. Semion	Hughes Aircraft Company
<i>Recording Secretary</i>	Robert A. Mundhenk	Lockheed Aircraft Corporation

BOARD OF DIRECTORS FOR 1941

J. Henry Gunning	Douglas Aircraft Company, Inc.
Harold J. Anderson	Douglas—El Segundo Plant
Walter A. Semion	Hughes Aircraft Company
Lyle R. Hackney	Lockheed Aircraft Corporation
Frank J. Meyer	Northrop Aircraft, Incorporated
G. Victor Johnson	North American Aviation, Inc.
John E. Ayers, Sr.	Vega Aircraft Corporation
Edward S. Fife	Vultee Aircraft, Incorporated

EXECUTIVE COMMITTEE MEMBERS FOR 1941

J. T. Gray	Aeronautical Chamber of Commerce
Marshall S. Finch	Allied Aviation Corporation
E. L. McMillan	American Airlines, Incorporated
Frank J. Skach	Beech Aircraft Corporation
Fred C. Geiselhart	Bell Aircraft Corporation
Sidney Siggia	Bellanca Aircraft Corporation
Berger Anderson	Boeing Aircraft Company—Washington
Albert D. Kipfer	Boeing Aircraft Company—Kansas
George D. Evans	Brewster Aeronautical Corporation
William Z. Frizbie	Bureau of Aeronautics
William I. Stieglitz	Central Aircraft Corporation
Edwin M. Skinner	Cessna Aircraft Corporation
Sidney H. Avery	Consolidated Aircraft Corporation
Allen Lee	Culver Aircraft Corporation
Richard G. Buzby	Curtiss-Wright Corporation, New York
W. G. Pendergast	Curtiss-Wright Corporation, Ohio
Walter W. Holtz	Douglas Aircraft Company, California
Firmin D. Porter	Douglas Aircraft Company, California
C. Jackson Libby	Edo Aircraft Corporation
Martin J. Clune	Engineering and Research Corporation
C. Fred Comstock	Fairchild Aircraft Division
Ulrich Haupt	Fletcher Aviation Corporation
William A. Rowlands	Ford Motor Company
J. Richard Huber	G. & A. Aviation Corporation
John Lentini	Grumman Aircraft Engineering Corporation
Kingo Takasugi	Harlow Aircraft Company
John C. Reams	Interstate Engineering & Aircraft Corp.
James P. Rigby	Kellett Autogiro Corporation
Lloyd F. Kernkamp	Librascope, Incorporated
R. V. Patterson	Luscombe Airplane Corporation
David McCalla	McDonnell Aircraft Corporation
Paul A. Piper	The Glenn L. Martin Company
Raymond J. Reger	Materiel Center, Army Air Forces
Henry Gledhill, Jr.	National Aircraft Standards Committee
Sidney Apfelbaum	Naval Aircraft Factory
Carl E. Stryker	War Production Board
Donald Lampland	Pan American Airways, Atlantic Division
Stanley Moy	Pan American Airways, Transpacific Division
Fred C. Strickland, Jr.	Piper Aircraft Corporation
Harry Zuckerberg	Platt-Le Page Aircraft Company
Thomas P. Hearne	Ryan Aeronautical Corporation
Clarence Dorsett	Stinson Aircraft Division
Roland L. Brower	Timm Aircraft Corporation
J. F. Roche	Transcontinental Western Air, Inc.
George Darracott	Vought-Sikorsky Aircraft Division
Edward E. Roberts	Vultee Aircraft, Incorporated
Martin Boe	Vultee Field Division
Ralph E. Warner	Waco Aircraft Company
Frank H. Copeland	Wallace-Martin Aircraft Corporation

NOTE: National Officers, Divisional Officers and Members of the Board of Directors are also Members of the Executive Committee, but are not shown above. The above list shows aviation companies and controlling agencies represented at business sessions of the S. A. W. E. during the year 1941.

NATIONAL OFFICERS FOR 1942

Chairman Donald R. Watson Fleetwings, Incorporated
Secretary William H. Downs Republic Aviation Corporation
Treasurer C. Fred Comstock Fairchild Aircraft Division

EASTERN DIVISION OFFICERS FOR 1942

Chairman Frank K. Kriz The Glenn L. Martin Company
Secretary Russell C. Walters The Glenn L. Martin Company
Treasurer Marshall S. Finch Allied Aviation Corporation

GULF DIVISION OFFICERS FOR 1942

Chairman (Acting) William F. Nicol Braniff Airways, Incorporated

LAKES DIVISION OFFICERS FOR 1942

Chairman Seymour W. Dunham Materiel Division, Air Corps
Secretary-Treasurer Wayne B. Withers Materiel Division, Air Corps

PLAINS DIVISION OFFICERS FOR 1942

Chairman Warren D. Mateer Curtiss-Wright, Missouri Plant
Secretary-Treasurer David McCalla McDonnell Aircraft Corporation

WESTERN DIVISION OFFICERS FOR 1942

Chairman Frank J. Meyer Northrop Aircraft, Incorporated
Secretary James A. Crabtree Hughes Aircraft Company
Treasurer Ed L. Payne North American Aviation, Inc.

BOARD OF DIRECTORS FOR 1942

William F. Nicol	Braniff Airways, Inc.	Frank K. Kriz	The Glenn L. Martin Company
Warren D. Mateer	Curtiss-Wright Corp.	Seymour W. Dunham	Materiel Division, Air Corps
C. Fred Comstock	Fairchild Aircraft Div.	Frank J. Meyer	Northrop Aircraft, Incorporated
Donald R. Watson	Fleetwings, Incorporated	William H. Downs	Republic Aviation Corporation

ACTING DIRECTOR OF PUBLICITY

Raymond R. Wiese Fleetwings, Incorporated



TECHNICAL COMMITTEE MEMBERS FOR 1942

J. T. Gray	Aeronautical Chamber of Commerce	James P. Rigby	Kellett Autogiro Corporation
Marshall S. Finch	Allied Aviation Corporation	Lloyd F. Kernkamp	Librascope, Incorporated
E. L. McMillan	American Airlines, Incorporated	L. R. Hackney	Lockheed Aircraft Corporation
George A. Bishoff	American Airlines, Incorporated	R. E. Edie	Luscombe Airplane Corporation
Frank J. Skach	Beech Aircraft Corporation	David McCalla	McDonnell Aircraft Corporation
Fred C. Geiselhart	Bell Aircraft Corporation	Paul A. Piper	The Glenn L. Martin Company
Sidney Siggia	Bellanca Aircraft Corporation	Wayne B. Withers	Materiel Center, Army Air Forces
Felix Martinez	Bendix Aviation, Limited	John F. Cramer	National Aircraft Standards Committee
Berger Anderson	Boeing Aircraft Company, Washington	Sidney Appelbaum	Naval Aircraft Factory
Albert D. Kipfer	Boeing Aircraft Company, Kansas	E. J. Splaine	Northeast Airlines, Incorporated
George D. Evans	Brewster Aeronautical Corporation	Howard L. Prieve	Northwest Airlines, Incorporated
Frank H. Copeland	Brewster Aeronautical Corporation	Don O. Q. Lampland	Pan American Airways—Atlantic Division
George Rounds	Briegleb Sailplane Corporation	P. E. Everett	Pan American Airways—Eastern Division
Russell T. Firth	Bristol Aeronautical Corporation	Stanley Moy	Pan American Airways—Trans-Pacific Division
Donald M. Sullivan	Edward G. Budd Manufacturing Company	J. F. Wiechers	Pan American Airways, Western Division
Edwin M. Skinner	Cessna Aircraft Corporation	William Wink	Piper Aircraft Corporation
Harold Hoekstra	Civil Aeronautics Administration	H. F. Stantek	Platt-LePage Aircraft Company
Edward W. Keeler	Civil Aeronautics Administration	Andrew J. Havrilla	Pratt, Read and Company, Incorporated
N. L. Weis	Colonial Airlines, Inc.	Edward C. Strutt	Rearwin Aircraft and Engines, Incorporated
Sidney H. Avery	Consolidated Aircraft Corporation	Edgar H. Spicer	Ryan Aeronautical Corporation
John E. Ayers	Cox and Stevens Aircraft Corporation	Orin Moe	Southern Aircraft Corporation
Allen Lee	Culver Aircraft Corporation	M. V. Morley	Spartan Aircraft Company
Richard G. Buzby	Curtiss-Wright Corporation, New York	R. H. Wendt	Taylorcraft Aviation Corporation
C. Ray McWhorter	Curtiss-Wright Corporation, Missouri	Jack B. Mehlman	Timm Aircraft Corporation
Webster G. Pendergaast	Curtiss-Wright Corporation, Ohio	K. C. Raynesford	Transcontinental and Western Air, Incorporated
Finnia D. Porter	Douglas Aircraft Company, California, Plant No. 1	Joseph Martin	United Airlines Transport Corporation
Walter J. Anderson	Douglas Aircraft Company, California, Plant No. 2	Howard W. Vick	Vega Aircraft Corporation
Walter H. Holtz	Douglas Aircraft Company, California, Plant No. 3	George Darracott	Vought-Sikorsky Aircraft Division
Charles E. Froesch	Eastern Airlines, Incorporated	Michael L. Staryzk	Vought-Sikorsky Aircraft Division
C. Jackson Libby	Edo Aircraft Corporation	Edward E. Roberts	Vultee Aircraft, Incorporated
Charles O'Hara	Fletcher Aviation Corporation	Martin Boe	Vultee Aircraft, Incorporated—Vultee Field Division
William A. Rowlands	Ford Motor Company	J. Russell Johnson	Vultee Aircraft, Incorporated—Nashville Division
Thomas Allen	General Motors Corporation—Eastern Aircraft Division	A. V. Dicaire	Vultee Aircraft, Incorporated—Stinson Division
N. E. Graeber	General Motors Corporation—Eastern Aircraft Division	Ralph E. Warner	Waco Aircraft Company
John Lentini	Grumman Aircraft Engineering Corporation	Dale Hamilton	White Aircraft Company
Jack J. Waldman	Goodyear Aircraft Corporation	L. C. Miller	Wright Aeronautical Corporation
John C. Reams	Interstate Engineering and Aircraft Corporation	Alexander B. Peters	York Aircraft Corporation

NOTE: National Officers, Divisional Officers and Members of the Board of Directors are also Members of the Technical Committee, but are not shown above. The above list shows companies engaged in the Aeronautical Industry and Controlling Agencies represented at business sessions of the S. A. W. E. during 1942.

NATIONAL OFFICERS FOR 1943

Chairman Howard W. Barlow Agricultural and Mechanical College of Texas
Secretary William O. Boyd Lockheed Aircraft Corp., Texas
Treasurer James B. Childers North American Aviation, Texas

EASTERN DIVISION OFFICERS FOR 1943

Chairman George D. J. Ormsbee Toledo Scale Company
Secretary Don O. Q. Lampland Pan American Airways, Inc.
Treasurer Robert H. Ireland Vought-Sikorsky Aircraft Division

GULF DIVISION OFFICERS FOR 1943

Chairman Horace E. Burrier North American Aviation, Texas
Secretary W. R. Nason General Controls Company, Texas
Treasurer Robert C. Pote Lockheed Aircraft Corporation, Texas

LAKES DIVISION OFFICERS FOR 1943

Chairman To be Elected
Secretary-Treasurer To be Elected

PLAINS DIVISION OFFICERS FOR 1943

Chairman Edward A. Langleben Emerson Electric Manufacturing Co.
Secretary-Treasurer Bradley G. Kohr McDonnell Aircraft Corporation

WESTERN DIVISION OFFICERS FOR 1943

Chairman Martin Boe Vultee Aircraft, Incorporated
Secretary Channing R. Engleby Lockheed Aircraft Corporation
Treasurer Charles F. Hoppe, Jr. Douglas Aircraft, Incorporated

BOARD OF DIRECTORS FOR 1943

Howard W. Barlow	Agricultural and Mechanical College of Texas
Edward A. Langleben	Emerson Electric Manufacturing Co.
William O. Boyd	Lockheed Aircraft Corporation
Horace E. Burrier	North American Aviation, Inc.
James B. Childers	North American Aviation, Inc.
George D. J. Ormsbee	Toledo Scale Company
Martin Boe	Vultee Aircraft, Incorporated

NOTE: Lakes Division member of Board to be announced early in 1943 after Divisional elections.

FLEETWINGS

Headquarters for Hydraulic Equipment

No matter what your need may be in the way of a hydraulic valve or jack, you can fill it at Fleetwings—either from our large line of standardized designs or by a special design made up to fit your particular requirements.

The valves shown below are but a few of the many sturdy, efficient, Fleetwings-designed, piston-type hydraulic valves available for actuating gun turrets, bomb doors, landing gear, engine controls, wing flaps, etc.

For complete details about any of this equipment, write to Fleetwings, Inc., Hydraulics Division, Bristol, Pa.



B-2-J Gun Turret Valve

This special valve combines the lateral and elevating controls in one unit, thus requiring only one valve per turret. It provides the means of operating a turret at a variable speed in order to enable gunners to maintain continued fire on moving targets.



B-I-G Hydraulic Selector Valve

This valve was designed especially for landing gear retraction systems. An electric interlocking device, incorporated in the valve keeps it from operating before the plane is off the ground. This same mechanism is also connected with the flaps in such a way as to prevent the flaps from operating, thus warning the pilot that the landing gear is retracted.



B-2-F-I Hydraulic Selector Valve

This double unit valve was originally designed to operate landing gear retraction system and wing flaps. However, it may also be used on any other similar 2-unit combination requiring intermittent operation.



B-I-M Hydraulic Selector Valve

This 2-position valve with automatic return was developed to give pilots a quicker get-away after releasing bomb loads. An electric latching mechanism automatically closes bomb doors as soon as bombs have been released.

FLEETWINGS

BRISTOL

Incorporated

PENNSYLVANIA

INTRODUCTION

are interested in weight and balance problems—the Society of Aeronautical Weight Engineers is organized for your benefit and participation.

CHAPTERS

The Society has organized eight Chapters throughout the country to carry out its national activities, and will organize more Chapters as growth continues.

Local Chapters are already operating in the following localities:

Baltimore	Los Angeles
Buffalo	Philadelphia
Dallas-Ft. Worth	St. Louis
Dayton	Wichita
Long Island	

Chapter organization has been proposed in the following localities:

Chicago	San Diego
Detroit	Seattle
Kansas City	Tulsa
Miami	

BENEFITS OF MEMBERSHIP

Development of contacts of value to both the individual and to his company. Prestige in the field of Weight Control Engineering. Association with the leaders in the industry's field.

Benefits of Publications:

1. S. A. W. E. Technical Papers
2. S. A. W. E. Weight Handbooks
3. S. A. W. E. Yearbook and Roster
4. Minutes of Technical Committee

An opportunity to take an active part in the research, standardization and other work of the Society.

CONCLUSION

Through the foregoing, the Society is providing for you and for the industry a technical organization that is comparable to other societies which have had such a beneficial influence on the industrial progress of the country.

APPLICATION FOR MEMBERSHIP

Application forms for membership may be secured from any member of the Society or by requesting them from the Treasurer.

Applicants should read the application form carefully and should give all information that may be useful to the Social Committee in recommending the membership grade, or to the Technical Committee in deriving the greatest advantage from the talents of the members of the Society.

WHAT IS THE S. A. W. E.?

The Society of Aeronautical Weight Engineers is incorporated as a non-profit organization in the State of California as of March 19, 1941. The purpose of the Society as stated in its Charter is as follows:

"To promote recognition of Weight Control as a specialized branch of Aeronautical Engineering, to exchange weight information for mutual benefit, to combine effort in reducing the weight of purchased equipment, and to promote a better understanding among Weight Engineers, thereby fostering a higher degree of efficiency in weight control procedure and a better informed and more cooperative personnel."

CREED

The Society believes that the future development of aircraft depends to a high degree upon the application of research to weight control and to estimating procedures. By including in its membership the leading weight control specialists of the industry, an interchange of ideas and data on the latest developments is made available to you.

MEETINGS

Meetings, presenting a cross-section of the best and latest in weight problems and research, are held periodically by the various Chapters and Divisions. During the year some fifty such meetings are held. An annual National Meeting is held early in each year.

TECHNICAL TRANSACTIONS

The minutes of the meetings of the Technical Committees are reproduced and distributed to all interested and affected parties for further study and comment on the projects of the Society.

GENERAL PUBLICATIONS

The lectures given at the various meetings of the Society are recorded and furnish information not available elsewhere. These are presented as Society Papers.

The Weight Handbook, consisting of two Volumes, and issued by the Society, includes weights of standard parts and purchased equipment, and is used as the standard for weight control engineering throughout North America.

Each year, the Society publishes its Yearbook which is a summary of all activities and accomplishments of the past year and of the anticipated projects of the coming year. Also included is a complete Membership Roster.

THE S. A. W. E. IS ORGANIZED FOR YOU

If you are a Weight Engineer in any branch of the aircraft industry—or if in any associated capacity you

THE OUTGOING CHAIRMAN'S MESSAGE

To the Members of the S.A.W.E.:

The Society of Aeronautical Weight Engineers, Incorporated, has progressed in 1942 despite the additional burden of war work placed upon the members. This progress can be attributed to the interest, untiring efforts and team work of the members in Society activities. I want to take this opportunity to thank those of you who helped in this work. I know my successor can depend upon your continued cooperation.

It has been essential to forego some of our projects in the interest of National Security. Such projects could aid the War Effort if a satisfactory plan could be arranged for their development. Such arrangements require a great amount of time for study and consultation. In 1942 there was no time available for this work. It is questionable whether such time will be available in 1943.

New problems have confronted the members due to the War. We congratulate the members who have cooperated with the Army Air Forces to help them solve their Weight and Balance problems. This work has been an outstanding contribution to the war effort.

The Society has received International recognition. Its future is well established. To assure continued success we must pray for Divine guidance and we must support those men we select to direct future activities.

The establishment of permanent National Headquarters should be given future consideration. Such a central office would contribute to a marked degree to the cementing of the organization into a clearing house for Weight and Balance problems. Furthermore, the operation of the National Headquarters is fast becoming a full time job.

It was a pleasure, though, a bit difficult, to serve two jobs. It has been extremely gratifying to receive the unstinted support and enthusiasm of my Company. This kind consideration has been an exemplification and a reiteration of the faith of its predecessors in the importance of Aircraft Weight Control.

In closing permit me again to thank you for the honor you have bestowed upon me.

DONALD R. WATSON
National Chairman for 1942

THE INCOMING CHAIRMAN'S MESSAGE

TO S.A.W.E.

The part which our Society is playing in the war program is a greater one than any of us could have foreseen at the time of its inception, and I feel deeply honored at having the opportunity of serving as chairman for 1943. All of our efforts should be devoted to the successful prosecution of the present conflict and every means taken to coordinate our efforts to the end of producing more airplanes and insuring their effective operation.

The recognition of the work of our Society by the Armed Services attests to the importance of weight control. The comprehensive program of projects adopted by the Society at its last meeting will, if successfully carried out, be of great assistance in the achievement of the goal to which we are all working. The broad nature of these projects is such that they will contribute materially to the advancement of the aeronautical industry in the post-war period.

I am grateful for the honor of being elected to the chairmanship, and to have the privilege of working with the members of the Society for the coming year.

HOWARD W. BARLOW
Chairman-Elect for 1943

HISTORY OF THE GROWTH OF THE SOCIETY

In Southern California considerable early thought was given by L. R. Hackney of Lockheed and E. S. Fife, then of Vultee, to the organizing of weight control engineers. Probably the possibilities of such an organization were studied elsewhere, but due to the advantage of several large aircraft manufacturers being located in a relatively small area, the first formation of the S. A. W. E. was begun in Los Angeles in 1939.

The first official meeting of the Society of Aeronautical Weight Engineers was held in Hollywood, California, on July 14, 1939. Five companies were represented at this meeting by nineteen weight control engineers. There were three more Society Meetings held in the remainder of 1939, and in 1940 twelve meetings were held. Since the first meeting the attendance has grown until there have been 127, representing sixteen companies, in attendance at a Chapter Meeting.

Until the year of 1941 there were no official S. A. W. E. Meetings held outside of Los Angeles County, however during 1940 there were twenty-one Society Members from outside that territory representing Beech, Boeing, Curtiss-Wright, Fleetwings, and the Materiel Division at Wright Field. These members and the interest developed outside of Los Angeles County were due to the activities of the Society's first Chairman, L. R. Hackney of Lockheed, who spent his 1940 vacation contacting weight control engineers and government officials from coast to coast.

During 1941 seven other Chapters of the Society were organized, and a National Structure of five Society Divisions was set up to include eight other proposed Chapters, making a total of sixteen Chapters covering the aviation centers of this country. Also several Canadian companies, an airline in South America, The Civil Aviation Office in Australia, and the Royal Aeronautical Society have shown an interest in the activities of the S. A. W. E. Thus a start has been made toward expanding the Society into an international organization.

The organization of the Society on the East Coast is largely due to the enthusiasm and the energy of D. R. Watson of Fleetwings, who was the National Chairman for 1942. The St. Louis Chapter was organized by Ray McWhorter of Curtiss-Wright, and Frank Skach of Beech is largely responsible for the activities of the Wichita Chapter. The Dayton Chapter at Dayton has thrived under the leadership of Stanley Huls and Seymour Dunham. William Nicol, lately of Braniff Airways, organized the Dallas-Fort Worth Chapter and represented the Society in the Gulf Division during 1942.

The Society met its 1942 goal, as there are 618 members of all grades registered. It is believed that the future activities of the Society will surely attract many new members.

At the end of 1942 nine major projects, viz., Airframe Weight Statement, Gun Turret Weight Statement, Volume II of the S. A. W. E. Weight Handbooks, Rotary Wing substitution pages for AN Weight Statements, Army Air Forces Weight Control, Value of a Pound, Seal of Approval, Accessory Weight Data and Code of Drawing Number Systems have been closed out. A concerted campaign to develop Volume III of the Weight Handbooks was launched during 1942, which created considerable interest. However, it may be essential to withhold work on this project due to the War Emergency.

The Second National Meeting of the Society was held in Chicago, Illinois, with a gratifying representation from the industry, Air Transport group and Controlling Agencies in attendance. This meeting and other meetings held during 1942 are described elsewhere in this Yearbook. The proposed agenda of work to be accomplished during 1943 is also discussed elsewhere.

S. A. W. E. SOCIAL ACTIVITIES

Aside from the Dinner Meetings, Society social activities in 1942 have been limited. The Western Division held a S. A. W. E. dance February 21st at Brentwood Country Club and the Long Island Chapter had a dinner at the Rice Bowl Restaurant in New York's Chinatown. A full course Chinese dinner was served and the menu ranged from BIRD'S NEST soup to Sang Chow Gai Kue.

Due to the war the social activities may have to be curtailed, particularly where transportation problems are involved. However, the fellowship promoted by such get-togethers is invaluable and at social events the members have opportunity to discuss ideas on weight control problems in an off-the-record manner.



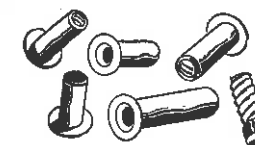
"A False Balance is an Abomination to the Lord; but a Just Weight is His Delight." Proverbs 11:1.

NEW 'BLIND' RIVETS now available in variety of types

Aircraft manufacturers! Here are a few of the available kinds of B. F. Goodrich RIVNUTS, the rivets which can be headed, or upset from one side.

1. Flat headed Rivnuts for use where surfaces need not be "clean."
2. Countersunk or flush Rivnuts where airfoils and surfaces must be aerodynamically clean.

Each type of Rivnut is available in three sizes. Size is designated by the machine-screw size of thread; i.e., 6-32, 8-32, and 10-32.

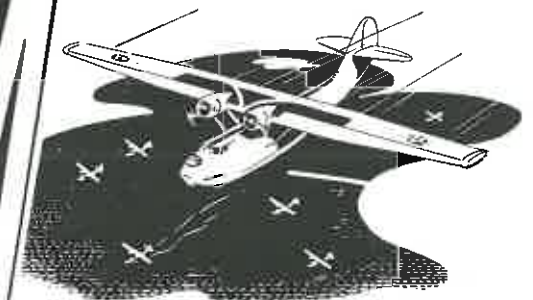


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Each Rivnut size is made in four different types. Each type is made with six different grip ranges. Other grip ranges can be made to fit special requirements.

Available with open or closed end. Each size available with or without key (except for very thin countersunk type).

Get all the facts about RIVNUTS. Write for illustrated wall-card to B. F. Goodrich, Aeronautical Division, Akron, Ohio. For speedier installation a new power tool has been developed by the Chicago Pneumatic Tool Co., Cleveland, Ohio, in cooperation with B. F. Goodrich.



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AND RESEARCH CORPORATION**
Linden, New Jersey

RESUMÉ OF 1942 S. A. W. E. MEETINGS

The first Dinner Meeting of the year was held January 9th by the Long Island Chapter at the American Airlines Hangar at LaGuardia Field, New York. Excellent dinner and smokes were served to 45 guests through the courtesy of American Airlines. After the dinner color-sound movies of an American Airlines trip were shown by Mr. Otto Kirchner, A. A. A.'s Chief Engineer.

The first Dinner Meeting of the year of the Los Angeles Chapter was held January 16th at Carl's Viewpark, Vernon and Crenshaw Boulevard, Los Angeles. At this meeting Mr. Walter A. Semion, lately of Hughes Aircraft Company, presented S. A. W. E. Paper No. 9, entitled, "Airplane Balancing and Center of Gravity Control," and S. A. W. E. Paper No. 12, "Weight Control—Aircraft Design Problem" by Mr. E. J. Foley. This paper is a reprint from an article by the same title and author in the American Aviation Magazine.

The Wichita Chapter held a Dinner Meeting, February 2nd, at the Allis Hotel, Wichita, Kansas. Twenty-two members attended the first meeting of the year. Novel idea was inaugurated. It was agreed to arrange place cards so that no two members from the same company would be seated next to one another.

A Technical Committee Meeting was held at the Benjamin Franklin Hotel, Philadelphia, February 14th, at which time final plans were made for the Second National Conference in Chicago in April.

The Western Division held its first Technical Committee Meeting in the Aviation Room, Plaza Hotel, February 18th. The agenda of the National Conference was studied and discussed. Considerable material was gathered at this meeting for the National Conclave.

The second Dinner Meeting of the year of Wichita Chapter was held March 2nd at the Allis Hotel, Wichita, Kansas. Many topics concerning weight control were discussed, thereby bringing about a better understanding of the problems.

An excellent Dinner Meeting was held March 13th by the Los Angeles Chapter at Carl's Viewpark, Vernon and Crenshaw Boulevard, Los Angeles, California. The usual excellent dinner was served. This proved to be one of the outstanding meetings of the year. The reason for such success was the Guest Speaker, Mr. James "Jimmy" Mattern, Lockheed Test Pilot and world-renowned trans-oceanic flyer. His talk was supplemented by some pictures of his famous flights. At this same meeting Mr. W. A. Martin, Project Weight Engineer on the Lockheed "Constellation," presented S. A. W. E. Paper No. 17 entitled, "Applications of Psychology to Weight Control." Naturally, the meeting was well attended.

The Long Island Chapter held a pre-convention meeting at the Shadow Lawn Restaurant in Hempstead, Long Island, March 13th. The program for the National Conference was discussed at great length. Many excellent suggestions were made and later incorporated in the agenda.

The Western Division held a final pre-convention meeting of its Technical Committee, April 8th, in the Plaza Hotel's Aviation Room in Hollywood, California. All the subjects on the National Conference agenda were correlated and a number of new projects were added. These new projects were Gun Turret Weight Statement, Air Transport Weight Control and a very excellent procedure to coordinate S. A. W. E. projects was introduced by Ed. Fife of Lockheed.

The Baltimore Chapter held a Dinner Meeting, April 15th, at the Madison Restaurant in Baltimore, Maryland, attended by 32 members and four guests. An excellent paper, "The Importance of Weight Control in Airline Operation," was given by Mr. Charles E. Froesch, Chief Engineer of Eastern Airlines. After his talk, Mr. Froesch showed the sound-color movie, "Flying Fisherman II." The projection equipment was lent by the Glenn L. Martin Photographic Department.

The Philadelphia Chapter held a Dinner Meeting, April 16th, at the Engineers' Club in Philadelphia, Penna. At this meeting Sydney Siggia presented a paper on "Seal of Weight Approval." Mr. Harry Zuckerberg's resignation as Chapter Secretary was read. At this time the Chairman, Mr. James P. Rigby of Kellett Autogiro Corp., appointed Mr. Frank H. Copeland of Brewster to fill the unexpired term.

The Second National Meeting of the Society of Aeronautical Weight Engineers, Inc., was held at the Palmer House, Chicago, Ill., April 27th to 29th, inclusive. The three-day conference was crowded with work. It was attended by 54 representatives from Army Air Forces, Civil Aeronautics Administration, Airlines, Accessory Manufacturers, Aircraft Manufacturers, Engine Manufacturers, Publishers and Scale Builders. Nine sessions were

conducted, at which twenty-four subjects were discussed. Ensign Walter Jennings of the Navy Public Relations Office gave a very inspiring talk on patriotism at the Banquet held April 28th in the Meeting Room. Mr. William F. Nicol, lately of Braniff Airways, was appointed Librarian. When Mr. Nicol joined the Air Transport Command, Dr. Howard W. Barlow of Agricultural and Mechanical College of Texas was appointed to replace him. A photograph of the Banquet is shown elsewhere in this Yearbook. Resumé of minutes also appears in this Yearbook.

The eighteenth Dinner Meeting of the Los Angeles Chapter was held May 15th at Carl's Viewpark. At this meeting Bob Mundhenk of Lockheed was elected to fill the unexpired term of Treasurer Ed. Payne, who was called to active duty as a Reserve Officer. Another outstanding Guest Speaker gave a talk at this meeting. Mr. Mac Short, the well-known Vice President in charge of Engineering of the Vega Aircraft Corporation, was the principal speaker of the evening. After Mr. Mac Short spoke, the members who attended the Second National Conference gave brief outlines of the events at Chicago. (Editor's Note: We trust Bill Nicol's beautiful and unusual footwear was mentioned.)

The Philadelphia Chapter held a Dinner Meeting at the Engineers' Club, 1317 Spruce Street, Philadelphia, Penna., June 12th, when members from a company not heretofore represented were introduced. Donald D. Maxson of Eastern Aircraft Division of General Motors Corporation was present and applied to the Chapter for membership. He was unanimously accepted. Mr. John E. Ayers of Cox and Stevens gave a paper entitled, "Organization for Weight Control." Mr. Arthur L. Lawrence of the engineering staff of Cox and Stevens Aircraft Corporation accompanied Mr. Ayers to the meeting.

The old rendezvous of the Western Division was the meeting place of a Technical Committee Meeting held by the Los Angeles Chapter, June 17th. The committee held its meeting in the Aviation Room of the Plaza Hotel in Hollywood, California. Reports on Volumes I, II and III of the Weight Handbooks were given. A communication from the Los Angeles County Sealer's Office was discussed concerning the Weight Engineers having the resident military officers write a letter stating the necessity for checking and sealing weighing equipment in the industry so priorities for tires could be obtained by the scale inspectors. The meeting closed after a general round-table discussion. (Editor's Note: Probably concerning Bonus-Penalty Clauses!)

The St. Louis Chapter held a Dinner Meeting at the Northside Branch of the Y. M. C. A. in St. Louis, Mo., June 22nd. Mr. Ed Langleben was appointed temporary secretary-treasurer to fill the vacancy left by Dave McCalla. Mr. Mateer appointed Messrs. McCalla, McWhorter, Kohr, Englehardt, Kugler and Hajek to form a committee to complete the Gun Turret Weight Statement project.

The Northside Branch of the Y. M. C. A. was the place selected for the July 20th meeting of the St. Louis Chapter. The speaker of the evening was Mr. Joseph Jerger, noted American authority on superchargers and high altitude flying installations of the Curtiss-Wright Corporation. His talk was entitled, "Some High Altitude Flight Considerations." The lecture was followed by a general discussion.

The Dallas-Fort Worth Chapter held its Organizing Meeting, August 12th, at the Texas Hotel in Fort Worth, Texas. Mr. William F. Nicol, lately of Braniff Airways, was elected Chairman, Mr. Joseph P. Bowlin of Toledo Scale Company was elected Secretary and Mr. Horace E. Burrier of North American Aviation, Inc., was elected Treasurer. Mr. Chet Peterson summarized the purposes of the Society and reviewed its various publications and projects. Seventeen representatives were in attendance and all who were not already members joined the Society. Dr. Howard W. Barlow, Director of Aeronautics of the Agricultural and Mechanical College of Texas, was the principal speaker and outlined the potential value of the S. A. W. E. in Aeronautical Weight Engineering.

August 14th the Philadelphia Chapter held a Dinner Meeting at the Engineers' Club. The speaker of the evening was D. R. Watson, National Chairman for 1942, who gave a resumé of the minutes of the National Meeting at Chicago.

A Technical Committee Meeting of the Los Angeles Chapter was held August 19th in the Aviation Room of the Hollywood Plaza Hotel. New and current projects were discussed at the meeting. Among the new projects outlined was Job Classification, Standardization of Weight Tables, Weights on N. A. S. C. parts, Report Folders and a paid officer. The latter problem is considered the outstanding one and future consideration should be given it.

The September meeting of the Dallas-Fort Worth Chapter was held September 16th at the Baker Hotel, Dallas, Texas. At this meeting a Gulf Division ballot for National Officers was nominated. Dr. H. W. Barlow of A. and M. College was nominated National Chairman, William O. Boyd of Lockheed was nominated Secretary and

James B. Childers of North American was nominated Treasurer. Jim Childers gave a paper entitled, "Weight Control on Long Range Flights." Twenty-three members and guests attended the meeting. A great amount of interest in the Society has been shown at the Dallas-Fort Worth Chapter.

The Los Angeles Chapter held a Dinner Meeting, September the 18th, at the Sky Room, Lockheed Air Terminal, at Burbank. Mr. Otto Timm, of Timm Aircraft Corporation was the speaker of the evening. The subject of his talk was "Plastic Airplanes and My Weight Experiences."

An excellent Dinner Meeting of the Long Island Chapter was held September 18th at the Hotel Bedford, New York. Thirty members attended this meeting, including Past National Chairman John E. Ayers and the National Chairman for 1942, Doc Watson. Ten different companies were represented. Jack Ayers reported the various activities of the S. A. W. E. about which he learned in his travels around the country. The matter of training women was mentioned by Jack Libby, at which time Jack Ayers suggested a meeting at his home at some future date.

The Technical Committee of the Los Angeles Chapter held a meeting October 21st in the Aviation Room of the Hollywood Plaza Hotel. The matter of offering prizes for technical papers, possibly in the form of War Bonds, was suggested at this meeting. It was announced that the Seal of Approval had been copyrighted and the Seal had been granted on a number of articles.

The Philadelphia Chapter held a Dinner Meeting, October 9th, at the Engineers' Club. The meeting was well attended. The speaker of the evening was Mr. James P. Rigby, Chapter Chairman, who gave a talk on "Rotary Wing Aircraft," which was supplemented by moving pictures of autogiro flights. This talk and the movies created considerable interest in the principles of autogiro design.

The October Meeting of the Dallas-Fort Worth Chapter was held October 14th at the Texas Hotel, Fort Worth, Texas. This proved to be a very interesting meeting and it has been noted that this chapter has met every month since its organization. Mr. Chester G. Peterson of Vega Aircraft Corporation presented a paper covering Weight Control organization for manufacturers.

The St. Louis Chapter held a Dinner Meeting at the usual place, Northside Branch, Y. M. C. A., October 19th. A talk on Aircraft Gun Turrets by Mr. Tuomey of the Emerson Electric Manufacturing Company highlighted the evening. Thirty-two members and guests attended.

The Dallas-Fort Worth Chapter held a meeting, November 11th, in the Baker Hotel, Dallas, which was well attended. Dr. Barlow gave an excellent talk on building up the Society. Dr. Barlow mentioned the possibility of setting up War Training Courses in Weight and Balance based upon "Mike" Hackney's and Jack Ayers' courses. The principal speaker of the evening was Mr. Sollenborger of Libby-Owens-Ford Glass Company, who showed a movie film concerning glass. His talk proved to be very enlightening.

The Long Island Chapter held a Dinner Meeting at the Hotel Bedford, New York, November 13th. At this meeting nominations for 1943 Chapter officers were held. It was decided to have various companies sponsor the meetings of 1943 and to invite guests from other organizations to attend future meetings to acquaint others with weight control problems. Grumman Aircraft Engineering Corporation was selected to sponsor the next meeting.

November 13th the Los Angeles Chapter held a Dinner Meeting at Carl's Viewpark. This meeting was the outstanding Dinner Meeting of the year, as the attendance exceeded 300. The reason for the record-breaking attendance is obvious; Mr. John K. Northrop, President of Northrop Aircraft, Incorporated, and an Honorary Fellow of this Society, was the guest speaker. Our friend "Jack" spoke about and showed motion pictures of the Northrop Flying Wing.

The Philadelphia Chapter held a Dinner Meeting at the Engineers' Club, Philadelphia, Penna., December 11th. The election of 1943 Chapter officers was held with the following results: Donald R. Watson, Chairman; Frank H. Copeland, Secretary, and Donald M. Sullivan, Treasurer. The next meeting will be held February 12th at the same place.

The December Dinner Meeting of the Wichita Chapter was held at Drolls Downtown Grill, Wichita, Kansas, December 16th. It was unanimously voted to hold four business meetings per year plus special meetings when necessary. Election of 1943 officers was held with the following results: Paul W. Hiltner, Chairman; Edwin Skinner, Secretary, and Paul Miller, Treasurer.

At least a meeting or two, Every Month in 1942!!



SEATING ARRANGEMENT READING FROM LEFT TO RIGHT
* LOOKING AT PHOTOGRAPH *

- | | | | |
|-----------------------|-------------------------------|---------------------|------------------------------|
| Arthur L. Thurston | Cox & Stevens Aircraft Corp. | Louis C. Miller | Wright Aeronautical |
| George D. J. Ormsbee | Toledo Scale Co. | A. V. Dicaire | Stinson |
| Ralph E. Warner | Waco | William F. Nicol | Braniff Airways |
| Edward J. Splaine | Northeast Airlines | E. L. McMillan | American Airlines |
| Kirk Raynesford | T. W. A. | | |
| Howard L. Prieve | Northwest Airlines | CENTER LEFT | |
| Nick L. Weis | Canadian Colonial Airlines | J. F. Wiechers | Pan American (Western) |
| Frank J. Skach | Beech | Paul A. Piper | Glenn L. Martin |
| Jack J. Waldman | Goodyear Aircraft Corp. | P. E. Everett | Pan American (Eastern) |
| John E. Ayers, Sr. | Vega | C. G. Gehringer | Fairbanks, Morse & Co. |
| Seymour W. Dunham | Wright Field, Materiel Center | Bo Sweeney | Cox & Stevens Aircraft Corp. |
| C. Fred Comstock | Fairchild | Dr. H. O. Hem | Toledo Scale Co. |
| William H. Downs, Sr. | Republic | | |
| Donald R. Watson | Fleetwings, Inc. | CENTER RIGHT | |
| Wayne B. Withers | Wright Field, Materiel Center | G. A. Bishoff | American Airlines |
| E. E. Roberts | Vultee | Edward D. Langleben | The Emerson Electric Co. |
| Firmin D. Porter | Douglas | C. Ray McWhorter | Curtiss-Wright, Missouri |
| James P. Rigby | Kellett | Fred C. Geiselhart | Bell Aircraft |
| Lyle R. Hackney | Lockheed | Don Lampland | Pan American (Atlantic) |
| Frank J. Meyer | Northrop | Stanley Moy | Pan American (Transpacific) |
| | | John Lentini | Grumman |

SOCIETY PAPERS

S. A. W. E. Paper No. 1

WEIGHT ECONOMY by John E. Ayers, Sr., Weight Control Engineer, lately of the Vega Aircraft Corporation.

A discussion of a "Check-off List" which has been prepared for use in checking each drawing, for weight economy, before the drawing is presented. The salient points of the "Check-off List" are the use of lighter material, lighter gauges and the removal of excess material, simplification of parts, formed sections for extrusions, the use of forgings, lighter purchased parts, and new materials as available.

S. A. W. E. Paper No. 2

AIRPLANE WEIGHT AND BALANCE by Stanley R. Shatto, Vice President of the Continental Air Lines.

Although this was presented for the Air Transport Association it is believed there are many points of interest for members of the Society, and figures are given showing the saving in one year which would result from increasing the speed of an air transport from 160 to 161 miles per hour. This would also be the loss if speed were reduced one mile per hour due to incorrect balancing of the loaded airplane. After reading this paper it should be realized how "weight and balance conscious" the airline operators are. Mr. Shatto, in giving permission to print his talk, very kindly offered to cooperate with the manufacturers in every possible way to solve problems of weight control and balance.

S. A. W. E. Paper No. 3

AIRCRAFT ACCESSORIES—A WEIGHTY PROBLEM by Edward E. Roberts, Development Weight Engineer of Vultee Aircraft, Inc.

Demonstration is presented by percentages and pie charts, of the serious proportions that accessories and purchased equipment can assume in determining the total weight of an airplane. It is proposed that since the structure of an airplane is designed under such rigid weight control vigilance, that more study should be given to weight control on purchased equipment.

S. A. W. E. Paper No. 4

THE WEIGHT ENGINEER AND THE FLUTTER PROBLEM by Paul E. Bisch, Aerodynamics Engineer of North American Aviation, Inc.

This paper discusses the important role played by the weight engineer in solving the flutter problem and presents explanations, causes and remedies for flutter characteristics.

S. A. W. E. Paper No. 5

RELATIONSHIP OF IDENTIFICATION NUMBERS TO WEIGHT AND COST CONTROL by Donald R. Watson, Weight Control Engineer of Fleetwings, Incorporated.

The choice of serial numbers versus selected numbers is discussed and methods of breakdown and coding are proposed to standardize identification of parts between departments using weight as a basis for estimation and control.

S. A. W. E. Paper No. 6

PRESENT STATUS OF BERYLLIUM by Louis L. Stott, formerly Vice President of the Beryllium Corporation of Pennsylvania.

Beryllium as an alloying element to create alloys of advantageous mechanical properties is described in its latest developments. Certain current myths are exploded but the practicable applications of beryllium alloys are stressed.

S. A. W. E. Paper No. 7

PREDETERMINATION OF WEIGHT EFFICIENCY by Donald M. Cole and S. J. Hutchinson, Weight Control Engineers of the Vega Aircraft Corporation.

A method of comparison, from a standpoint of weight efficiency, of various aircraft materials is presented, with further research urged on the theories presented. Several comparison tables showing relative values are included.

S. A. W. E. Paper No. 8

A PRACTICAL METHOD FOR WING WEIGHT ESTIMATION by C. R. Englebry, Weight Control Engineer of Lockheed Aircraft Corporation.

Theories and formulae are presented for the estimation of wing weights during preliminary design stages. Tests of proposed formulae against other designs are requested, and further research on the subject is suggested.

S. A. W. E. Paper No. 9

AIRCRAFT BALANCING AND CENTER OF GRAVITY CONTROL by Walter A. Semion, lately Weight Control Engineer of Hughes Aircraft Company.

Various means are described for controlling the balance of an airplane and for correcting undesirable balance conditions. While all methods listed are not advocated as good procedure, all possible corrective methods are given.

S. A. W. E. Paper No. 10

CALCULATION OF LANDING GEAR AND HYDRAULIC SYSTEM WEIGHTS by Harold W. Adams, Assistant Chief Designer at California Plant of Douglas Aircraft Company.

Factors affecting weight and their control are described. Higher pressures for hydraulic systems are advocated. Formulae are presented for calculating weights of hydraulic and landing gear parts.

S. A. W. E. Paper No. 11

MESSERSCHMITT ME-110 by James E. Thompson, Service and Specification Engineer of Vultee Aircraft, Inc.

This paper in a revealing manner presents the details of the production and simplification advantages noted in a study of Germany's mass production fighter.

S. A. W. E. Paper No. 12

WEIGHT CONTROL—AIRCRAFT DESIGN PROBLEM by E. J. Foley.

By permission of the author and the publisher this paper is a reprint of the article by the same name appearing in the October 15, 1941, issue of American Aviation, in which an excellent summation of all phases of current weight control problems and solutions are presented.

S. A. W. E. Paper No. 13

WILL ACCESSORIES IMPEDE OUR PAYLOAD? by L. R. Hackney, Staff Weight Control Engineer of the Lockheed Aircraft Corporation.

In this paper the increase in the weight of accessories due to modern warfare is pointed out. The need for cooperation between aircraft weight engineers and accessory vendors in the reduction of weight is advocated.

S. A. W. E. Paper No. 14

WEIGHT PREDICTOR by Creighton Merrell of Boeing Airplane Company.

Mr. Merrell very aptly explains the necessity for an accurate estimate of the preliminary design to avoid penalties imposed on the prime contract due to possible actual overweight.

S. A. W. E. Paper No. 15

ORGANIZATION FOR WEIGHT CONTROL by John E. Ayers, Sr., Charter Member S. A. W. E.

The necessity for authority placed in the Weight Control Engineer is emphasized. Two organizational charts show the recommended line of authority in an Engineering Department relative to the Weight Engineer.

S. A. W. E. Paper No. 16

WEIGHT SAVING BY CLEANING AIRCRAFT by Rogert E. Sargent of Autogroom Company.

The monetary value gained by cleaning aircraft is illustrated in this paper.

S. A. W. E. Paper No. 17

APPLICATION OF PSYCHOLOGY TO WEIGHT CONTROL by William A. Martin, Project Weight Engineer of Lockheed Aircraft Corporation.

The cooperation of the Weight Engineer with the other engineers in the department is advocated. The importance of an equitable attitude toward one another is pointed out.

S. A. W. E. Paper No. 18

THE IMPORTANCE OF WEIGHT CONTROL IN AIRLINE OPERATION by Charles E. Froesch, Chief Engineer of Eastern Airlines, Inc.

The effect of weight increases upon the economics of airline operation are very clearly outlined. The weight increases in a 21-passenger transport airplane during five years of operation are enumerated.

S. A. W. E. Paper No. 19

ELEMENTS OF FIELD WEIGHT AND BALANCE CONTROL by John E. Ayers, Sr., Cox and Stevens Aircraft Corporation.

An extensive paper covering all phases of Operational Weight and Balance Control. This paper is particularly useful as a guide where aircraft may be modified for use in services other than those for which they were designed.

SOCIETY PAPERS

S. A. W. E. Paper No. 20

WING WEIGHT ESTIMATING SIMPLIFIED by C. R. Englebry, Weight Engineer, Lockheed Aircraft Corporation.

Supplementing S. A. W. E. Paper No. 8. Mr. Englebry reduces the lengthy formulae to a few simple equations.

S. A. W. E. Paper No. 21

ENGINEERING PROGRESS AND COST CONTROL by Edward E. Roberts, Chief Weight Engineer, Engineering and Development Department, Vultee Aircraft, Inc.

The intimate relationship between weight and cost control are very aptly discussed. It is illustrated that weight can be used as a yardstick for future cost estimates.

S. A. W. E. Paper No. 22

PRELIMINARY DESIGN EQUATIONS FOR AIRCRAFT WEIGHT ESTIMATION by Walter A. Semion, formerly Weight Engineer of Hughes Aircraft Company.

Some simple equations are given for the preliminary estimation of the weight of a new design. The fallacy of optimism is pointed out.

S. A. W. E. Paper No. 23

THE VALUE OF A POUND by John E. Ayers, Sr., formerly Weight Design Engineer of Vega Aircraft Corporation.

The evaluation of the cost of a pound of weight increase in aircraft embodies such considerations as taxes, payload getting costs, passenger service costs, ground flight personnel costs, crew salaries and miscellaneous airline overhead. In addition, insurance and annual depreciation are taken into consideration.

S. A. W. E. Paper No. 24

WOOD CAN SAVE WEIGHT by Joel M. Jacobson of Fairchild Airplane Division of Fairchild Engine and Airplane Corporation.

The fact that so-called "Plastic" airplanes are made of wood is pointed out. It is illustrated there is no need to take weight penalty when substituting wood for metal.

S. A. W. E. Paper No. 25

THE EFFECT OF OVERLOAD AND UNBALANCE ON LONG RANGE OPERATION by Jim B. Childers, Structures Engineer of North American Aviation, Inc.


























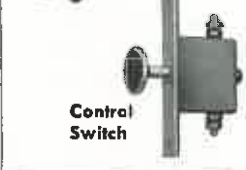












A discussion emphasizing the critical aspect of unbalance and overload with complete formulae and curves for computing optimum range. All the various factors effecting range are correlated for rapid solution.

S. A. W. E. Paper No. 26

WEIGHT CONTROL ORGANIZATION FOR MANUFACTURERS by Chester G. Peterson, Service Design Engineer of Vega Aircraft Corporation.

This paper is written as a basic review of weight group functions involved in aircraft manufacturing. Organization of a group which will most adequately perform these functions is discussed.

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 Combustion	 Standard Control Box	 Check Valve	 E-160 Starter Pump	 Auxiliary Power Unit
 Hand Turning Gear	 Control Panel	 Oil Separator	 Super-charger Regulator	 Propeller Governor Control
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WEIGHT AND BALANCE IN THE ARMY AIR FORCES

During the past year the Army Air Forces have placed increasing emphasis on the problem of weight and balance control in the field. It has been recognized that an important factor contributing to safe flying is accurate loading of large aircraft. Numerous accidents have occurred because of overload or improperly balanced aircraft. To eliminate this source of trouble, an extensive weight and balance program was initiated.

A weight and balance handbook, standard for all large multi-purpose aircraft has been prepared. Load adjusting instruments (balance slide rules) have been standardized and are being furnished with all large aircraft. Informal instruction in weight and balance control has been given to pilots, engineering officers and special weight and balance officers at many A. A. F. fields. An official weight and balance course has been included in the curriculum for all new engineering officers.

Many members of the Society of Aeronautical Weight Engineers have been called on to contribute to this program. They convinced their superiors of the significance of the program and obtained extended leaves from their regular duties to work directly with the Army. The cooperative efforts of weight engineers and Army personnel resulted in an orderly, practical program for weight and balance control in the field.

The problem of safe operational loadings was introduced to the S. A. W. E. at the second National Conference in April. It was discussed by representatives of the Load Adjuster and several aircraft manufacturers. The opinion was advanced that many preventable accidents were occurring because of improper loading of service airplanes. It was believed that existing handbook weight information was inadequate for practical and accurate service flight loadings. Some systems of loading were quite complete but laborious in operation, others were so simplified that accuracy was sacrificed. All loading systems suffered from the fact that they were prepared by engineers and were difficult for the non-technical persons to understand. The consensus of opinion was that a standard, simplified and practical system of aircraft loading would be highly desirable.

Shortly after the April S. A. W. E. Convention, an S. A. W. E. member discovered that the Army was very much concerned with this problem. He suggested that several representative weight engineers should be requested to discuss the subject. A conference was called by the Air Service Command in May. In attendance were representatives of several branches of the A. A. F. aircraft and load adjuster manufacturers. Several days were spent in discussing the problem and working out a simplified and practical procedure. It was agreed that a standard weight and balance data book should be supplied with each large aircraft. This book would supplant the weight data contained in the existing Pilot's and Maintenance Handbooks.

During the following months the standard weight handbook took shape. Sample handbooks were written for specific airplanes and tried out in actual service. Flying personnel were very cordial in their reception of the new system. They had actual experience with the inadequacies of the old systems and were able to offer many practical suggestions. Additional conferences were held and the weight handbook took its completed form in October. All who have seen it agree that it is an excellent piece of work. It is well composed and beautifully illustrated. It is complete and yet simple to use. Above all it does not assume a large amount of technical knowledge on the part of the men who must use it. There is insufficient space to discuss the new weight and balance handbook here. It is recommended that all interested persons obtain a copy and examine it and the Load Adjuster to see what has been done in the way of simplified and accurate loading of aircraft.

Much time has been spent by the Army and manufacturers' representatives in working out the standard procedure. Now that it has been adopted it will be a much simpler job for the weight engineer to prepare loading data on his airplanes. A weight check list, diagrams, graphs and a sample loading are all that he must prepare for insertion in the standard handbook. The advantage to the Army is that their personnel will not have to learn a new loading system every time they are assigned a new model airplane.

The most perfect system is of no avail until put into practice. Several manufacturers' representatives have traveled to fields where their airplanes are stationed. They have introduced the new system and taught Army personnel, who in turn will instruct others. Representatives of the Load Adjuster manufacturer have also done this work. The Air Transport Command recognized the value of the work and established a school for weight and balance instruction. As mentioned above, this course has now been established as part of the training for all A. A. F. engineering officers.

In these activities members of the Society have cooperated willingly. They have given of their special knowledge so that the program might be established quickly and successfully. They are happy that they have had the opportunity to contribute directly to the nation's war effort.

PAUL A. PIPER
 December 22, 1942

TESTED TWO TONS . . .

THE Warren McArthur Corporation has devoted years to research and practical tests to solve the problem of weight elimination in the design and manufacture of scientific seating.

This experience has been invaluable in the development of more than seventy different types now specified by eighteen of the leading military aircraft manufacturers.

WARREN McARTHUR PILOT Seat No. 162 for Martin B-26 Bomber. This 26 lb. structure has supported 156 times its own weight—4080 pounds; combined seat and armor plate loads at 12g.



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ONE PARK AVENUE NEW YORK CITY

TOLEDO SCALES

Builders of—

Airplane Weighing Scales
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Fuel Consumption Scales
Spring Testing Scales
Connecting Rod Scales
Counting Scales
Weight Printing Scales
Bench Scales
Portable Scales
Floor Scales
Fan-Type Scales
Over-Under Scales
Motor Truck Scales

● The very existence of the Society of Aeronautical Weight Engineers speaks for the vital importance of accurate weighing and force-measuring devices in the Aviation Industry.

Toledo Engineering Research continues to devote major attention to the specialized weighing problems of your industry. Today, whether it's weighing, counting, force-measuring, balancing . . . determining stresses, center of gravity, or horsepower, Toledo builds accurate, rapid, dependable equipment for your requirements.

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TOLEDO, OHIO, U. S. A.

Nation-wide service through 181 Toledo field offices means convenience and economy to you in the installation and maintenance of weighing equipment.



PROPOSED PROJECTS FOR 1943

The following discussion of proposed S. A. W. E. projects for 1943 should be considered as having been mentioned, begun or partially developed in some previous meeting and is in reality a summary of unfinished business. However, there may be urgent need for other new projects to be added to the Society agenda, and the fact that these are not anticipated here is no reason for their rejection.

Projects listed below are designated as National Projects where it is proposed that all Chapters and Divisions participate in the work to be done. The projects designated as Eastern or Western Division Projects are chiefly those which have been inaugurated within those divisions and upon which other divisions have no work. However, all divisions should participate in all projects in order that an expression of opinion of the entire Society may be embodied in the final structure of the project.

An attempt is made to list the projects in the order of their apparent importance, or priority, and it is suggested that all projects be identified with reference numbers similar to the ones shown below in the future. No new projects are recommended except those which would contribute to our War Effort.

NATIONAL PROJECTS

N-1 National Conference for 1943—The National Chairman for 1943 has the full responsibility, with the advice and assistance of other Society Participants, for the calling and scheduling of this meeting as compatible with the national conditions and the developments of the work of the Society. The location for this meeting was selected at the previous National Meeting, when it was voted to hold it in Dallas, Texas. It is suggested that the National Conference be confined to two or three days, and that the program be designed so as to include only projects of military importance which would aid in the War Effort. A National Conference should be held once a year to correlate our work so that we can do it more efficiently and expeditiously as a necessary contribution to the "Inevitable Victory."

N-2 Exchange of Weight Data—This project was discussed at great length at the Second National Conference. Plans were made to proceed with it under the leadership of Paul A. Piper of the Baltimore Chapter. Probably due to the stress of times it has been retarded. Particular effort should be applied to this project to bring it to a successful completion.

N-3 Volume III of the S. A. W. E. Handbooks—Mr. Paul A. Piper, of the Glenn L. Martin Company, was appointed Committee Chairman for this project. Mr. Piper worked out a plan for procedure which he distributed to the participants and the Army and Navy. This project in its present form has been rejected by the Army Air Forces. However, our Armed Forces are in sympathy with the project and it is urgently suggested that an equitable plan be inaugurated for a successful completion of this project. A Volume III would definitely contribute to the War Effort, in that it would eliminate a duplication of effort.

N-5 S. A. W. E. Seal of Approval—This project has been initiated by Mike Hackney of Lockheed at the suggestion of Sidney Siggia of Bellanca. Mr. Hackney is the General Committee Chairman of the project and the Project Committee Chairman for the West Coast, while Mr. Siggia is the Project Committee Chairman for the East Coast. Other Committee Members for the West Coast are Firmin Porter of Douglas and Johnny Reams of Interstate, and for the East Coast are Paul Piper of Glenn L. Martin and George Darracott of Vought-Sikorsky. The Seal of Approval has been copyrighted. This project, if proved to be successful and of value, is an endless one, but will do much toward rendering the accessory and equipment vendors more weight conscious.

N-6 Drive for Company Membership—This is a project on which each Chief Weight Control Engineer of a company, or company division or plant, is a committee member for each year. To meet the current expenses of the various Technical Committees, this Company Membership has been created with dues to be five dollars per year per company, plant or division. Such a Company Membership entitles a company to a vote on the policies, procedures and projects decided upon and studied by the Technical Committees.

N-7 Drive for Individual Members—This project has for its chief direction the National Officers, but where there are al-

ready organized Chapters the responsibility for individual Society Memberships rests with the Chapter Treasurer and the members of the Chapter Social Committee.

N-8 Finances—The chief responsibility for finances rests with the National Treasurer, the Division Treasurers and the Chapter Treasurers. Current general expenses are financed by regular individual and company dues, but projects may arise which will require special financing. The Aeronautical Chamber of Commerce of America has financed Volume II and it is expected this debt will be cleared in January. It is recommended that the National Chairman direct the financing of such special projects.

N-9 Activities of the Social Committee—This project is the sole responsibility of the National, Division and Chapter Treasurers who are Chairmen of their respective Social Committees. Such activities may be limited for the duration.

N-10 Revisions to the AC Handbook and Navy Design Specifications—Mr. Ray McWhorter of Curtiss-Wright Corporation at St. Louis was appointed Chairman of this Committee at the National Conference at Chicago. He suggested the S. A. W. E. propose that SR-5 Specification be made an ANC Specification. It is recommended this proposal be given further study.

N-12 Residual Fuel and Oil—Although Mr. Don O. Q. Lamp-land of Pan American was appointed Chairman of the committee, he has been unable to do very much work on it due to the War Emergency. This project has been handed to Mr. T. C. Bowling of Vought-Sikorsky to complete early in January. It is planned to incorporate two phases in this project—one—military phase (as set down by the Services) and a commercial phase to meet Airline requirements.

EASTERN DIVISION PROJECTS

E-8 Rotary Wing Pages for AN Weight Statements—Mr. James P. Rigby was appointed a committee of one to develop these pages and submit them through the National Chairman as an Industry recommendation for standardization. This project is being circulated by questionnaire and it is expected it will be completed early in 1943.

E-9 Operators' Weight Handbook—Volume IV of the S. A. W. E. Weight Handbook—Mr. E. L. McMillan of American Airlines was appointed Committee Chairman at the Second National Conference. Since the conference, Mr. McMillan has joined our Armed Forces and has not been able to contribute much to the project. Mr. John E. Ayers of Cox and Stevens has contributed some material to this work in his S. A. W. E. Paper No. 19—"Elements of Field Weight and Balance Control." It is suggested that consideration be given to this material in compiling Volume IV.

PLAINS DIVISION PROJECTS

P-1 Minimum Flying Weight—This project is formerly Project E-5. At the Second National Conference, Mr. Albert D. Kipfer of Boeing Airplane Company, Kansas, was appointed a committee of one to study this project and issue a report. It is expected this work will be completed early in 1943.

WESTERN DIVISION PROJECTS

W-4 Service Pick-Up—Although a report was given to the Second National Conference at Chicago, it is believed this project deserves further study. It is recommended the Western Division continue its studies of this project and other divisions collect pertinent data for that division.

W-5 The Value of a Pound—Mr. John E. Ayers, lately of Vega Aircraft Corporation, prepared a very comprehensive paper on this subject and reported it to the Second National Conference. It is suggested this paper be studied for a year and action be taken after the War Emergency.

W-6 Awards for S. A. W. E. Papers—The Social Committee of the Western Division at a meeting held November 3rd, inaugurated a plan to give prizes of Fifty Dollar War Bonds for the first and Twenty-five Dollar War Bonds for the second prize, for papers written concerning Weight Control. The Social Committee is to act as reviewing committee. This plan is an excellent contribution to encourage the writing of S. A. W. E. papers, and it is recommended it be considered in other divisions.



IN WEIGHT SAVINGS

and
Assembly Speed
with the

Speed Nut System
(PATENTED)

Where aircraft attachments have been changed over to SPEED NUTS and SPEED CLIPS a reduction of 70% or more in weight was almost universal. In replacing the 8-32 self-locking Nut, the weight saving was over 80%.

Wherever vibration loosening was a problem SPEED NUTS and SPEED CLIPS have solved it.

We believe that concentrated use of SPEEDS NUTS throughout the bombers will ultimately save from 50 to 100 pounds per plane.

Send us your assembly details now and we will rush samples and engineering data without delay.

TINNERMAN PRODUCTS, INC.
2094 FULTON ROAD CLEVELAND, OHIO

UNBALANCED MOMENTS

What East Coast Weight Engineer continually buys airline tickets when he should buy rail tickets?

* * *

Last year someone said, "Take the Stratoliner and save time." Who took the Stratoliners?

* * *

What East Coast Weight Engineer would like to have a National Meeting held in Hawaii and why?

* * *

It was rumored that a certain Chairman can never keep an S. A. W. E. pin. The rumor still persists.

* * *

What Chairman had to call up a certain Chapter by long distance telephone and ask them to bring the S. A. W. E. banner to the National Meeting?

* * *

The S. A. W. E. has just stepped into the co-ed class. Paul Piper, Howard Vick, Mike Hackney and Doc Watson and others now have girl weight engineers. Let's give the girls a big hand; they're doin' a swell job!

* * *

The irony of fate—just when the girls have joined our ranks we have to omit telephone numbers and addresses from the Yearbook.

* * *

One girl Weight Engineer to another: "Sorry I did not go to the Chicago Conference. I heard an excellent example of 'Perfect Control' was displayed there."

* * *

George Darracott has joined the ranks of the benedicts. We know the bride will be happy as we have never spent an unhappy moment with George.

BY-LAWS of the SOCIETY OF AERONAUTICAL WEIGHT ENGINEERS, INC.

ARTICLE I

The CORPORATE NAME of this organization shall be "Society of Aeronautical Weight Engineers."

ARTICLE II

The PURPOSE of this organization shall be to promote recognition of Weight Control as a specialized branch of Aeronautical Engineering, to exchange weight information for mutual benefit, to combine effort in reducing the weight of purchased equipment, and to promote a better understanding among Weight Engineers, thereby fostering a higher degree of efficiency in weight control procedure and a better informed and more cooperative personnel.

ARTICLE III

1. The MEMBERSHIP of this organization shall consist predominantly of engineers employed in the aircraft industry whose duties are directly concerned with controlling the weight and balance of aircraft.
2. The membership of this organization shall be classified into the following groups:
 - (a) SENIOR MEMBER—This rating shall be open to all engineers who, at the time of application, shall have completed one year or more of active work in Aircraft Weight Control. A Senior Member shall have full voting rights and shall be eligible to hold office.
 - (b) JUNIOR MEMBER—This rating shall be open to Aircraft Weight Control Engineers who have not the qualifications for a Senior Member. A Junior Member shall have full voting rights, but shall not be eligible to hold office. A Junior Member may, upon completing one year of service, apply to the Social Committee to be transferred to Senior Member rating.
 - (c) HONORARY MEMBER—This rating shall be open to former Weight Engineers who shall have been a Senior Member for a period of one year. An Honorary Member shall be entitled to attend all meetings, to offer suggestions and to make comments, but shall have no voting right, and shall not be eligible to hold office.
 - (d) ASSOCIATE MEMBER—This rating shall be open to engineers not directly connected with Weight Control work, but who are in a related branch of the industry. An Associate Member shall be entitled to attend all meetings, to offer suggestions, and to make comments, but shall have no voting right, and shall not be eligible to hold office. A Junior Member may, upon leaving Weight Control work, apply to the Social Committee to be transferred to the Associate Member rating.
 - (e) HONORARY FELLOW—This rating shall be open to engineers who, upon recommendation and unanimous approval of the Social Committee, shall be selected for this Honorary title. This rating shall consist predominantly of engineers who have achieved outstanding recognition in the aircraft industry, or have materially contributed to the advancement of the S. A. W. E. An Honorary Fellow shall be entitled to attend all meetings, to offer suggestions and to make comments, but shall have no voting right, and shall not be eligible to hold office.
 - (f) STUDENT MEMBER—This rating shall be open to Aeronautical Engineering Students in accredited schools upon recommendation from a faculty member of their school. A student member shall be entitled to attend all regular meetings, to offer suggestions, or to make comments, but shall not be eligible to hold office, or vote. The Society Emblem issued to a Student Member shall be silver plated.
 - (g) COMPANY MEMBER—This rating shall be open to any domestic aircraft manufacturer, aircraft parts manufacturer, air transport operator, aeronautical engineering school, or aviation controlling agency. A Company Member is entitled to have representation on the Technical Committees for each plant, factory, division, airline, school or office for which the Company Membership fee is paid. Said representatives are to have full voting power in all matters of Society policy and technical discussions, and are to be responsible to their respective Companies for the decisions made, and for the technical activities of the Society.
3. APPLICATION for INDIVIDUAL MEMBERSHIP may be made to the Social Committee, through the Chapter Treasurer, or the National Treasurer if there is no applicable Chapter yet organized, by any engineer who is eligible for membership. The membership rating shall be assigned by the Social Committee in accordance with Article III, Section 2, paragraphs (a) to (f) inclusive.
4. APPLICATION for COMPANY MEMBERSHIP may be made to the Technical Committee, through the National Treasurer, by any domestic aviation company, school, or controlling agency. No application for Company Membership may be rejected by the Technical Committee, except in case of Substantiated evidence to the effect that such Company Membership would be detrimental to the interests of National Defense.

ARTICLE IV

1. The NATIONAL OFFICERS shall consist of:

National Chairman	National Secretary	National Treasurer
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 - (a) The TERMS for these offices shall be from January 1st to January 1st, for one year only. Only one Society Member from any company unit shall hold any elective Society Office during one year. All National Officers for each year shall be members of the same Society Division and they shall be elected from a different Society Division for each successive year.
 - (b) The SOCIETY DIVISIONS shall be, until Society growth or other conditions make a change advisable, designated as follows:

Eastern Division	Lakes Division	Plains Division
Western Division	Gulf Division	
 - (c) A DIVISION TICKET, composed of nominees from each Society Division, excepting the one currently sustaining National Offices, shall be selected before the First of each October. The Division Tickets shall then be distributed for immediate national voting in order that all balloting for the National Offices shall be closed and announced by the First of each December.
 - (d) ELECTION to a National Office shall cancel nomination or election to a Chapter Office, and make mandatory another complete Chapter nomination or election in the Chapter affected.
2. The DIVISION OFFICERS shall consist of:

Division Chairman	Division Secretary	Division Treasurer
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 - (a) DIVISION OFFICERS shall be those officers elected as Chapter Officers within the Division, but serving in annual alphabetical rotation as per the Chapter Names of the Chapters organized within the Division.

3. The CHAPTER OFFICERS shall consist of:
- | | | |
|------------------|-------------------|-------------------|
| Chapter Chairman | Chapter Secretary | Chapter Treasurer |
|------------------|-------------------|-------------------|
- (a) The CHAPTER OFFICERS shall be elected annually at the first meeting in January by a general vote if in accordance with the following requirements:
- (A) A quorum of not less than sixty-five percent of the active members of the Chapter shall be present.
- (B) Three months prior to the termination of office, the Social Committee shall name nominees from the active (Society's) membership of the Chapter for election to the above offices. The Social Committee shall report the names of the nominees at the regular November Social Meeting. Additional nominations may be made from the floor at this meeting. The Chapter Secretary shall record all nominations and prepare a ballot to be delivered to each member in good standing prior to the following meeting, at which time these ballots shall be secretly polled by the Social Committee. The member receiving the largest number of votes for each office shall be elected with the following restrictions: There may be more than one member's name from each aircraft division on the ballot; however, there shall be only one member from each aircraft division elected to hold office; disqualification shall be in the order officers are listed; no member shall succeed himself in office; in case of a tie, additional ballots shall be passed until a member shall have been elected by a majority vote. Newly elected officers shall assume the full responsibility of their respective offices immediately upon their election.
- (C) Any proof of collusion or political bargaining shall automatically throw the candidate in question out of the voting.

ARTICLE V

1. The CHAPTER COMMITTEES of this organization shall consist of: (a) a Social Committee and a Technical Committee, or (b) an Executive Committee combining the functions of both of the above, as the situation warrants or as local desires dictate.
- (a) The FUNCTIONS of the COMMITTEES shall be as follows:
- (A) The SOCIAL COMMITTEE shall be composed of Senior Members, one to be elected by, and from, the weight control group of each company, plant, division, or unit, who are not members of the Technical Committee, excepting that Society Officers shall be members of both committees. The duties of the Social Committee shall be to administrate the social, personnel, and membership phases of the Society, and to receive any suggestions, grievances, or complaints, and to refer them to the attention of the Committee Chairman, who shall present them to the Society. The Social Committee shall also prepare for the election of Chapter Officers as outlined in Article IV, Section 3. This Committee shall hold all its meetings and perform its functions outside of office working hours. The term of the members of the Social Committee shall be for one year only, beginning the first meeting after the election of Chapter Officers.
- (B) The TECHNICAL COMMITTEE shall be composed only of affected Society Officers and of Weight Control Supervisors of the various companies, schools, or controlling agencies, and their respective plants, divisions or units. Said Committee shall represent the interests of the aircraft manufacturers, parts manufacturers, airline operators, schools, and controlling agencies, and administrate the technical problems and matters of Society policy. This committee may hold its meetings and perform its functions during office working hours with the approval of the respective companies.
- (b) An EXECUTIVE COMMITTEE may be maintained to cover both activities by Chapters whose limited membership does not permit, or whose desires do not dictate the formation of the two above committees.
- (c) A BRIEF WRITTEN RECORD of its activities and transactions, to be filed with the Chapter Secretary, shall be kept by each of these committees, whether (a) the Social Committee and the Technical Committee or (b) the Executive Committee.
2. DIVISION COMMITTEES shall be composed of the members of the Chapter Committees in the Division and shall have the same duties and responsibilities as described for the Chapter Committees.
3. The NATIONAL COMMITTEES shall be composed of the members of the Division and the Chapter Committees.

ARTICLE VI

1. The BOARD OF DIRECTORS shall consist of the current National Officers and the current Division Chairmen.
2. SOCIETY STATIONERY shall have printed upon its margin the names and the company affiliations of the National Officers and the other members of the Board of Directors.

ARTICLE VII

1. The DUTIES of OFFICERS shall be as follows:
- (a) NATIONAL CHAIRMAN: The National Chairman shall be the chief executive officer of the Society and shall preside at all National Meetings. He shall have general supervision and direction of other officers of the Society and its committees and shall see that their duties are properly executed. He shall be an ex-officio member of all existing committees and shall have general power and duties of supervision and management usually vested in the office of the President of an organization.
- (b) NATIONAL SECRETARY: The National Secretary shall attend all National Meetings and shall record all proceedings of National Meetings. He shall see that the proper notice is given of all National Meetings of the Society and shall perform such other duties as may be prescribed by the National Chairman. In case of the absence of the National Chairman, the Secretary shall assume the duties of the National Chairman for the time being.
- (c) NATIONAL TREASURER: The National Treasurer shall keep an accurate accounting and written record of the finances of the National Treasury of the Society. He shall act as National Chairman if both the National Chairman and the National Secretary are absent and shall act as National Secretary during the absence of the National Secretary. He shall also be the Chairman of the National Social Committee.
- (d) The DIVISION and the CHAPTER OFFICERS shall have the same duties and same responsibilities in their respective Divisions and Chapters, and in respect to Division and Chapter functions, as have the National Officers.
- (e) TEMPORARY ABSENCE of ALL of the officers shall constitute authority for the Committee Members to delegate the duties of the Officers to any Senior Member of the Society for the duration of the session or meeting affected.

ARTICLE VIII

1. REGULAR SOCIAL MEETINGS of the Chapters of the Society shall be held on the Friday evening nearest the Fifteenth of every odd month. A dinner beginning at 7:00 P. M., or at an hour previously declared by the Chapter Treasurer, shall precede the meeting.
2. REGULAR SOCIAL COMMITTEE MEETINGS shall be held on the Friday evening nearest the Fifteenth of every even month, the time and place to be designated by the Chapter Treasurer, who shall be the Chairman of the Social Committee.
3. TECHNICAL COMMITTEE MEETINGS shall be held at periodic intervals, and/or, whenever a need for

such a meeting arises. The time and place of meetings of the Chapter Technical Committee meetings shall be designated by the Chapter Chairman, who shall, when possible, give at least ten days' notice of the calling of a Chapter Technical Committee meeting.

4. A REGULAR ANNUAL DIVISION MEETING of each Division Technical Committee shall be held in September of each year. This meeting may include sessions of the Social Committee, if desired and practicable. The time and place of the Annual Division Meeting shall be designated by vote by the various Chapter Technical Committees within the Division.
5. A REGULAR ANNUAL NATIONAL MEETING of the Society shall be held in February or March of each year. This meeting may include sessions of the Social Committee, if desired and practicable. The time and place of the Annual National Meeting shall be decided by vote by the various Chapter Technical Committees of the Society.

ARTICLE IX

A SPECIAL MEETING of any nature may be called at any time by the Chairmen, or by the Committee Members.

ARTICLE X

AMENDMENTS to the BY-LAWS may be made by a three-quarter vote of the National Social Committee who shall have the power to propose additional and supplementary regulations to become a part of these By-Laws, or to alter or repeal any sections thereof, provided such change shall be presented to the Society at least one Regular Social Meeting before the final action.

ARTICLE XI

SOCIETY DUES shall be treated as follows:

1. ALL INDIVIDUAL SOCIETY DUES collected from individual members shall be one dollar (\$1.00) per year for all memberships (excluding Honorary Fellows and Company Members), shall be payable at the first meeting in January, and shall be applied only to the functioning of the Social Committee. Expenditure of said dues shall be left optional to the Chapters affected, except that any residue of these dues left in any Chapter or Division Treasury at the end of the year shall be forfeited to the Society's National Treasury on each First of January, and further any expenses incurred from operating Social Committees from the National Headquarters shall be paid from this residue.
2. ALL COMPANY MEMBERSHIP DUES, collected from aviation companies, schools, or controlling agencies, shall be five dollars (\$5.00) per year, payable each January 1st, assessable per each company, school, or office, or division thereof, and shall be applied to the operations of the Technical Committees of the Society as follows:
- (a) The DISTRIBUTION of the Company dues shall be as follows:
- (A) To the National Treasury for the functioning of the National Officers and National Technical Committee, 40%, or \$2.00.
- (B) To the Division Treasury for the functioning of the Division Officers and the Division Technical Committee, 30%, or \$1.50.
- (C) To the Chapter Treasury for the functioning of the Chapter Officers and the Chapter Technical Committee, 30%, or \$1.50.
- (D) This distribution shall be as per collection, i.e., the Divisions and Chapters shall receive 30% each of only, and all the Company Dues collected from within their Divisions and Chapters.
- (b) Any RESIDUE of these funds left in any Chapter or Division Treasury at the end of the year shall also be forfeited to the National Treasury of the Society on each First of January in order to build up a reserve, or in order to keep such funds active.
3. To FINANCE projects involving expenses greater than can be provided by the Company Membership Dues, special study and special action shall be instituted to suit the situation arising.
4. The EXPENDITURES of DUES shall be to defray expenses incurred by the organization in carrying out its program for the fiscal year. No obligation in excess of Ten Dollars (\$10.00) shall be incurred by the organization without permission of the Committees affected.

ARTICLE XII

SOCIETY MATERIAL shall be distributed as follows:

1. ALL MINUTES of all Technical Committee meetings shall be distributed to all participating companies, and affected or interested parties. Each Chapter Secretary, each Division Secretary, and the National Secretary shall be responsible for mailing copies of the Minutes of their respective meetings to companies and parties designated on mailing lists provided by the National Chairman.
2. Copies of all CORRESPONDENCE written by Chapter and Division Officers shall be forwarded to the National Chairman, who will reproduce and distribute additional copies to other affected parties according to conditions and requirements involved.
3. To assist SUB-COMMITTEE functions and to avoid duplication of effort, copies of all correspondence written on Sub-Committee projects shall be forwarded to all the members of the Sub-Committee.

ARTICLE XIII

1. The ORDER OF BUSINESS at all Regular Social Meetings of the Society shall be as follows:
- | | | |
|--|------------------------|-----------------|
| (a) Reading of Minutes of Last Meeting | (e) Announcements | (i) Talks |
| (b) Reports of Social Committee | (f) Old Business | (j) Discussion |
| (c) Reports of Technical Committee | (g) New Business | (k) Adjournment |
| (d) Reports of Sub-Committee | (h) Elections (if any) | |
2. It shall be the aim of the Society to obtain for the talks, outside speakers covering subjects with a definite relationship to Weight Control problems, or as an alternate, a member discussing Weight Control procedures and methods he has used to overcome problems that he has encountered.
- NOTE: Pending amendments will be announced early in 1943.

AVIATION COMPANIES, CONTROLLING AGENCIES AND SCHOOLS PARTICIPATING IN THE S. A. W. E. DURING THE YEAR OF 1942

EASTERN DIVISION

Academy of Aeronautics
Aeronautical Board
Aeronautical Chamber of Commerce
Air Transport Association of America
Allied Aviation Corporation
American Aviation Corporation
American Airlines, Inc.
American Export Airlines, Inc.
Autogroom Company, Inc.
Bell Aircraft Corporation
Bellanca Aircraft Corporation
Brewster Aeronautical Corp.
Bristol Aeronautical Corp.
Edward G. Budd Manufacturing Co.
Bureau of Aeronautics—Navy Dept.
Camloc Fastener Co.
Carnegie-Illinois Steel Corp.
Colonial Airlines
Cox and Stevens Aircraft Corp.
Civil Aeronautics Administration
Curtiss-Wright Corp.
Eastern Air Lines, Inc.
Edo Aircraft Corp.
Engineering and Research Corp.
Fairchild Engine and Airplane Corp.
Fairchild Aircraft, Limited (Canada)
Fleetwings, Inc.
G. and A. Aviation Corp.
General Motors Corp.—Eastern Aircraft Division
Grumman Aircraft Engineering Corp.
H. J. Heinz Company—Aircraft Production Division
Howe Scale Company
Casey Jones School of Aeronautics
Kellett Autogiro Corp.
Langley Aviation Corp.
Luscombe Aviation Corp.
The Glenn L. Martin Company
National Advisory Committee for Aeronautics
Naval Aircraft Factory
Daniel Guggenheim School of Aeronautics—New York University
Northeast Airlines, Inc.
Pan American Airways, Inc.
Pratt, Read and Company—Gould Aeronautical Division
Pennsylvania-Central Airlines, Inc.
Piper Aircraft Corp.
Platt-LePage Aircraft Co.
Pratt and Whitney Division—United Aircraft Corp.
Republic Aviation Corp.
Society of Automotive Engineers, Inc.
Vought-Sikorsky Aircraft Division—United Aircraft Corp.
War Production Board
White Aircraft Co.
Wright Aeronautical Corp.
York Aircraft Corp.

GULF DIVISION

Adel Precision Products Company
Agricultural and Mechanical College of Texas—
Aeronautical Engineering Department
Braniff Airways, Inc.
Consolidated Aircraft Corp.
Delta Air Corp.
Dillon Scale Company
Fairbanks, Morse and Co.
General Controls Co.
Harding Devices, Inc.
Libby-Owens-Ford Glass Co.
Lockheed Aircraft Corp.
National Airlines, Inc.
North American Aviation, Inc.
Pan American Airways, Inc.
Southern Aircraft Corp.
Spartan Aircraft Company
Toledo Scale Company
Vega Aircraft Corp.

LAKES DIVISION

Aeronautical Corporation of America
Canadian Airways, Limited
Curtiss-Wright Corporation
Fairbanks, Morse and Company
Ford Motor Company—Airframe Division
General Motors Corporation—Fisher Body Division
Goodyear Aircraft Corporation
Howard Aircraft Corporation
Howe Scale Company
Materiel Center—Army Air Forces
Northwest Airlines, Inc.
Stinson Aircraft Division—Vultee Aircraft, Inc.
Streeter-Ames Company
Taylorcraft Aviation Corporation
Trans-Canada Air Lines
Toledo Scale Company
United Airlines Transport Co.
Waco Aircraft Company

PLAINS DIVISION

Beech Aircraft Corporation
Boeing Aircraft Company
Cessna Aircraft Company
Continental Airlines, Inc.
Chicago and Southern Airlines
Culver Aircraft Corporation
Curtiss-Wright Corporation
Emerson Electric Manufacturing Co.—Turret Division
Laister-Kauffman Aircraft Corporation
McDonnell Aircraft Corporation
Mid-Continent Airlines, Inc.
Parks Air College, Inc.
Rearwin Aircraft and Engines
Transcontinental and Western Air, Inc.

WESTERN DIVISION

Aero Industries Technical Institute
Bendix Aviation, Limited
Briegleb Sailplane Corporation
Catalina Air Transport
John Chatillon and Sons
Consolidated Aircraft Corporation
Curtiss-Wright Technical Institute
Douglas Aircraft Company—All California Plants
Fairbanks, Morse and Company
Fletcher Aircraft Corporation
Howe Scale Company
Hughes Aircraft Company
Interstate Aircraft and Engineering Corp.
Kroehler-Doak Aircraft, Inc.
Librascope, Inc.
Lockheed Aircraft Corporation
Morrow Aircraft Corporation
North American Aviation, Inc.
Northrop Aircraft, Inc.
Pan American Airways, Inc.
Ryan Aeronautical Corporation
Stanford University
Timm Aircraft Corporation
Toledo Scale Company
Vega Aircraft Corporation
Vultee Aircraft, Inc.
Vultee Aircraft, Inc.—Vultee Field Division
Western Airlines, Inc.

FOREIGN DIVISION

Council for Scientific and Industrial Research—
Division of Aeronautics—Australia
Pan American—Grace Airways, Inc.
Royal Aeronautical Society—London
Saunders-Roe, Limited

WEIGHT ENGINEERS IN OUR ARMED FORCES

Virgil Mann Batza	Curtiss-Wright
Bob Eugene Baublits	Boeing
Daniel E. Behn	Lockheed
John Cherubini	Fleetwings
Donald Malpas Cole	Vega
James E. Colgan	Republic
Walt. H. Decker	Materiel Center
Albert Irving Dunstan	Glenn L. Martin
P. E. Everett	Pan-American
Edmund U. Fairbanks	United Airlines
Dewey Joseph Fournet, Jr.	Lockheed
Alfredo M. Garza, Jr.	Braniff Airways
Raymond Rowland Hajek	Curtiss-Wright
L. Kemp Henninghausen	Glenn L. Martin
Gus A. Hrountas	Pullman Co.
John F. Kenney	Vultee
Herman Kienzle	Beech Aircraft
Edgar R. Lanning	Boeing
Jacob Okiba Marinsky	Curtiss-Wright
William A. Martin	Lockheed
E. Lawrence McMillan	American Airlines
Kenneth Miller	Boeing
William F. Nicol, Jr.	Braniff Airways
Edgar L. Payne	North American
John L. Peterson	Boeing
Richard P. Roe	Vultee
Kenneth Wayne Silvius	Vega
Frank M. Squire, Jr.	Grumman
Harry A. Stailey	U. S. Naval Aircraft Factory
Ralph W. Stinson	Budd
George E. Thomsson	U. S. Naval Aircraft Factory
George W. Tuley	Vega
James Edward Ward	Vega
John W. Weaver	Fleetwings
William Hopkins Wickes	Vultee
W. H. Woodson	Glenn L. Martin
Clifton G. Younie	Braniff Airways

S. A. W. E. COMPANY MEMBERS

Adel Precision Products Co. (Texas)	Harding Devices Company
Allied Aviation Corporation	Hughes Aircraft Company
Beech Aircraft Corporation	Interstate Aircraft & Engineering Corporation
Bellanca Aircraft Corporation	Kellett Autogiro Corporation
Bendix Aviation, Limited	Librascope, Inc.
Boeing Aircraft Company	The Glenn L. Martin Company
Braniff Airways Corporation	North American Aviation, Incorporated
Edward G. Budd Manufacturing Company	Northrop Aircraft, Incorporated
Cessna Aircraft Company	Northwest Airlines, Inc.
Cox & Stevens Aircraft Corp.	Pan American Airways System
Curtiss-Wright Corporation	Platt-LePage Aircraft Company
Dillon Scale Company	Republic Aviation Corporation
Douglas Aircraft Company (Santa Monica Division)	Trans-Canada Airlines
Douglas Aircraft Company (El Segundo Division)	Toledo Scale Company (Dallas)
Engineering and Research Corporation	Toledo Scale Company (Ft. Worth)
Fairbanks, Morse and Company (Texas)	Toledo Scale Company (Houston)
Fairchild Engine & Airplane Corporation (Fairchild Aircraft Division)	Transcontinental and Western Air, Incorporated
Fleetwings, Incorporated	Vega Aircraft Corporation
General Controls Company (Texas)	Vultee Aircraft, Incorporated
G. and A. Aircraft, Incorporated	Waco Aircraft Company

DIRECTORY

NOTE: Due to war emergency addresses or plant locations cannot be shown. A separate roster will be available upon application by responsible persons.

EASTERN DIVISION . . . BALTIMORE CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—Frank K. Kris The Glenn L. Martin Company
 Secretary—Russell C. Walters The Glenn L. Martin Company
 Treasurer—Marshall S. Finch The Glenn L. Martin Company

ALLIED AVIATION CORPORATION

Finch, Marshall S. Senior

BLACK AND DECKER MANUFACTURING CO.

Powell, E. E. Associate

FAIRCHILD AIRCRAFT DIVISION

Baker, James W. O. Senior
 Comstock, C. Fred Senior
 Cozzali, Michael Associate
 Hull, David F. Senior
 Jacobson, Joel M. Associate
 Ricketts, John W. Associate

THE GLENN L. MARTIN COMPANY

Adamson, Paul M. Junior
 Ahl, William Henry, Jr. Senior
 Anderson, Leon R. Senior
 Andrews, Philip S. Junior
 Austin, Robert W. Junior
 Beasley, Dwight Junior
 Bebie, Hans Associate
 Bradley, Daniel J. Junior
 Buchanan, James E. Senior
 Budacz, Agnes O. Junior
 Bush, Orville J. Senior
 Crenshaw, William S., Jr. Junior
 Crumpecker, Edward L. Junior
 Davis, Mary E. Junior
 Decker, Norman Junior
 Dunstan, Albert L. Junior
 Dutton, Byron C. Junior
 Ellerson, Elizabeth G. Junior
 Fahey, Leo F. Junior
 Glassner, John H. Associate
 Gontar, Raymond J. Senior
 Griffey, William J. Senior
 Haviston, May Junior
 Harris, Selden H. Junior
 Henninghausen, L. Kemp Senior
 Haffort, C. B. Junior
 Hook, Raymond Junior
 Housman, Kathryn A. Junior
 Jones, Mary H. Junior
 Keyworth, Charles E. Senior
 Kirchner, Louis J. Senior
 Kowalik, Stephen Senior
 Kriz, Frank K. Senior
 Lamb, Latimer W. Junior
 McDaniel, A. W. Senior
 McGuire, Hilda Associate
 Meley, Thomas A., Jr. Senior
 Neubauer, Clarence G. Junior
 Neuhardt, Benj. J. Senior
 Parnley, Philip A. Senior
 Pierce, Glenn F. Senior
 Pinkerton, Eleanor C. Junior

CHAPTER OFFICERS FOR 1943

Chairman—Marshall S. Finch The Glenn L. Martin Company
 Secretary—Raymond J. Gontar The Glenn L. Martin Company
 Treasurer—Leon R. Anderson The Glenn L. Martin Company

CIVIL AERONAUTICS ADMINISTRATION— AIRCRAFT ENGINEERING SECTION

Stinson, Katherine Associate

ENGINEERING AND RESEARCH CORPORATION

Clune, Martin J. Senior

Sousa, Melvin Arnold Associate
 Thielhot, Armand Honorary Fellow
 Ware, John S. Senior

Piper, Paul A. Senior
 Pritchard, David D. Senior
 Ricketts, John W. Associate
 Roddy, Regina H. Junior
 Ruocco, Bernard A. Senior
 Scarborough, R. W. Senior
 Schaefer, Charles M. Senior
 Schaidt, Lee Senior
 Serrell, Victor E. Junior
 Sherwood, Dudley A. Junior
 Smith, Frederick B. Junior
 Sousa, Melvin Arnold Associate
 Spalding, Delman Senior
 Spencer, George W. Senior
 Stanka, Michael Junior
 Stribble, Ferdinand C. Senior
 Stubbs, E. Brydon Senior
 Taylor, M. Francis Senior
 Van Arman, W. D., Jr. Junior
 Walters, Russell C. Senior
 Woodson, W. H. Senior

EASTERN DIVISION . . . BUFFALO CHAPTER

CHAPTER OFFICERS FOR 1942

Acting Chairman—Richard G. Buzby Curtiss-Wright Corporation
 Acting Secretary-Treasurer—Fred C. Geiselhart Bell Aircraft Corporation

CHAPTER OFFICERS FOR 1943

Acting Chairman—Donald J. Nolan American Aviation Corporation
 Acting Secretary—William E. Johnson Bell Aircraft Corporation
 Acting Treasurer—Ernest W. Toney Curtiss-Wright Corporation

AMERICAN AVIATION CORPORATION

D. J. Nolan Senior

BELL AIRCRAFT CORPORATION

Bligh, John H. Junior
 Briggs, Emerson C. Junior
 Cooper, Ronald Junior
 Fay, Charles L. Senior
 Geiselhart, Fred C. Senior
 Hall, William R. Senior
 Johnson, William E. Senior
 Kramer, Albert J. Junior

Limage, James S. Associate
 Petit, Edward P. Senior
 Schroder, Fred C. Senior
 Trax, Stanley C. Junior

H. J. HEINZ CO.—AIRCRAFT PRODUCTION DIVISION

Walter A. Semion Charter Member

CARNEGIE-ILLINOIS STEEL CORPORATION

Collins, Tappan Associate

CURTISS-WRIGHT CORPORATION

Buzby, Richard G. Senior
 Lemontier, C. R. Associate
 Toney, Ernest W. Senior

FAIRCHILD AIRCRAFT, LIMITED (CANADA)

Waller, J. J. Senior

EASTERN DIVISION . . . LONG ISLAND CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—George Darracott Vought-Sikorsky Aircraft Division
 Secretary—C. Jackson Libby Edo Aircraft Corporation
 Treasurer—John Lentini Grumman Aircraft Engineering Corporation

CHAPTER OFFICERS FOR 1943

Chairman—George D. J. Ormsbee Toledo Scale Company
 Secretary—Don O. Q. Lampland Pan American Airways, Inc.
 Treasurer—Robert H. Ireland Vought-Sikorsky Aircraft Division

ACADEMY OF AERONAUTICS

Myron, George W. Associate
 Popazian, Leon F. Associate

AUTOGROOM COMPANY, INCORPORATED

Devitt, W. M. Associate
 Sargent, R. E. Associate

AMERICAN AIRLINES, INCORPORATED

Bischoff, George A. Senior
 Hoyt, F. Associate
 McMillan, E. L. Senior
 North, David Junior

BRISTOL AERONAUTICAL CORPORATION

Firth, Russell T. Senior

CAMLOC FASTENER COMPANY

Hennessey, Silas W., Jr. Associate

CASEY JONES SCHOOL OF AERONAUTICS

Hartung, Walter M. Associate

CIVIL AERONAUTICS ADMINISTRATION

Mount, Ted. O. Senior

COLONIAL AIRLINES, INC.

Pittman, Charles Junior

ARMY AIR FORCES RESIDENT INSPECTOR

Weis, N. L. Senior

COX AND STEVENS AIRCRAFT CORPORATION

Ayers, John E., Sr. Charter
 Halstead, Paul C. Junior
 Jordan, Harold P. Senior
 Laurence, Arthur L. Senior
 Normann, Erik Senior
 Sweeney, Beauregard "Bo" Senior

Thurston, Arthur L. Senior
 Vandorsteel, William Senior

DIRECTORY

EDO AIRCRAFT CORPORATION

Clinton, Elmer J. Senior
 Libby, C. Jackson Senior

GRUMMAN AIRCRAFT ENGINEERING CORP.

Brader, Robert E. Senior
 Cameron, Archibald Senior
 Carow, Raymond C. Senior
 DeWittens, Louis S. Junior
 Dillon, Paul J. Associate
 Hagan, Robert G. Senior

Hills, Edward J. Senior
 Lentini, John Senior
 Pierce, Glenn F. Senior
 Squire, Frank M. Junior
 Trimbom, Robert J. Senior
 VanName, John F. Senior

HOWE SCALE CO.

Daniels, M. Associate
 Leland, W. Associate
 Nichols, C. Associate
 Rudolph, W. Associate

LANGLEY AVIATION CORP.

Ill, H., Edward J. Senior

NEW YORK UNIVERSITY

Klein, Dr. Alexander Senior

NORTHEAST AIRLINES, INC.

Splaine, Edward J. Senior

PAN AMERICAN AIRWAYS, INC.

Crites, Sherman E. Senior
 Lampland, Donald O. Q. Senior

PRATT, READ & CO.

Havrilla, Andrew J. Senior
 Slingsby, Tom Watson Associate

REPUBLIC AVIATION CORP.

Capellino, Charles A. Senior
 Colgan, James E. Associate
 Downs, William H. Senior
 Grasmann, Bernard J. Senior

Harris, Louis B. Associate
 Hyatt, Fred E. Senior
 Kahler, John C. Senior
 Kartveli, Alexander Honorary Fellow

McRae, Alexander J. Associate
 Mergan, Joseph B., Jr. Junior
 Ramee, Allen L. Senior
 Yee, Robert Associate

TOLEDO SCALE CO.

Ormsbee, George D. J. Senior

Malloy, Richard C. Associate

VOUGHT-SIKORSKY AIRCRAFT DIV.

Alton, Edward J. Junior
 Bennett, Edward Junior
 Bibeauf, Herald J. Junior
 Bonadio, Frederick A. Junior
 Bowling, Theodore C. Senior
 Hanes, John C. Senior
 Franskowski, Ferdinand Senior
 Freeman, Horace C. Junior

Fuller, John E. Junior
 Garrity, Edward J. Senior
 Glenney, William E. Senior
 Graham, Richard P. Junior
 Hankoff, Robert R. Junior
 Hanes, John C. Senior
 Ireland, Robert H. Senior
 Lillemore, Theodore E. Senior

McCoy, Frank J. Junior
 Munce, Gilbert B. Junior
 Olesen, Thomas J. Senior
 Starzyk, Michael L. Senior
 Tartaro, Dominic B. Junior
 Wheeler, William E. Junior
 Zuckerberg, Harry Senior

WHITE AIRCRAFT CO.

Hamilton, Dale Associate

WRIGHT AERONAUTICAL CORP.

Miller, L. C. Associate

YORK AIRCRAFT CORP.

Peters, Alexander B. Senior

EASTERN DIVISION . . . PHILADELPHIA CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—James P. Rigby Kellett Autogiro Corp.
 Secretary—Harry Zuckerberg (Resigned) Platt-LePage Aircraft Co.
 Acting Secretary—Frank H. Copeland Brewster Aeronautical Corp.
 Treasurer—Sidney Siggia Bellanca Aircraft Corp.

CHAPTER OFFICERS FOR 1943

Chairman—Donald R. Watson Fleetwings, Inc.
 Secretary—Frank H. Copeland Brewster Aeronautical Corp.
 Treasurer—Donald M. Sullivan Edward G. Budd Manufacturing Company

BELLANCA AIRCRAFT CORP.

Haiduck, Andrew F. Associate

Siggia, Sidney Senior

Bothe, Berthold Junior

BREWSTER AERONAUTICAL CORP.

Copeland, Frank H. Senior
 Daly, Henry L. Senior
 Doppel, Leonard J. Senior
 Evans, George D. Senior
 Galligan, William B. Senior

Carbarino, Louis A. Senior
 Goodman, George P. Senior
 Hudson, Roy F. Associate
 Kreyling, August Associate
 Lynch, Grevirson D. Associate

Meek, Fred, Jr. Senior
 Nuss, Karl Associate
 Reeseler, Lee J. Senior
 Sokel, Jack S. Senior
 Urchenko, Vsevolod P. Senior

EDWARD G. BUDD MANUFACTURING CO.

Aldrich, Clare A. Junior
 Bartash, Joseph Junior
 deBerardinis, Vincent Junior
 Bokeko, Bernard Associate

Kesser, Charles Wister Junior
 Kunstman, Richard W. Junior
 Marlin, Paul L. Senior
 Orr, John Faunce Junior

Shuster, George F. Associate
 Stinson, Ralph W. Senior
 Sullivan, Donald M. Senior
 Wolfrom, Robert Elliott Senior

EASTERN AIRCRAFT—TRENTON DIVISION OF GENERAL MOTORS

Baldauf, Philip D. Associate
 Eler, Wellington B. Junior
 Lathrup, D. E. Associate

Loring, Thomas W. Associate
 Kaganov, Benjamin J. Senior
 Roberts, Kenneth E. Junior

Spindell, Philip E. Associate

FLEETWINGS, INC.

Black, William M. Junior
 Boericke, John J., Jr. Associate
 Boice, Robert M. Associate
 Bradshaw, Richard B. Honorary Member
 Cherubini, John E. Senior
 Fellemann, Frank Junior
 deGanahl, Carl Honorary Fellow

Hofheinz, Carl William Associate
 Hutton, Norman James Associate
 Kohl, Earl C. Junior
 Knox, Joseph A. Associate
 Knox, Thomas B. Associate
 Kramer, Harry A., Jr. Senior
 Lynahan, Paul W. Associate

Stafford, Paris H. Associate
 Steiglitz, William L. Associate
 Swan, Chas. R. Junior
 Watson, Donald R. Senior
 Wiese, Raymond R. Associate
 Williamson, L. A., Jr. Associate

G. AND A. AIRCRAFT, INC.

Atherholt, John B. Associate

Finley, Henry Bassett Senior

Huber, J. R. Associate

HOWE SCALE CO.

Queen, E. W. Associate

Rigby, James P. Senior

LUSCOMBE AIRPLANE CORP.

Gregory, S. Rolfe Associate

Naidoff, Hyman Associate
 Wink, William Senior

PLATT-LEPAGE AIRCRAFT CO.

LePage, W. Laurence Associate

Staniek, Holland Frank Junior

UNITED STATES NAVAL AIRCRAFT FACTORY

Apfelbaum, Sydney Senior
 Stailey, Harry A. Senior

Steinberg, Nathaniel Senior
 Thomsson, George E. Senior

DIRECTORY

GULF DIVISION

OFFICERS FOR 1942

Acting Chairman—William F. Nicol Braniff Airways, Inc.

GULF DIVISION—DALLAS-FORT WORTH CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—Chester G. Peterson Vega Aircraft Corporation
Secretary—Joseph P. Bowlin Toledo Scale Co.
Treasurer—Horace E. Burrier North American Aviation, Inc.

ADEL PRECISION PRODUCTS CO.

Hughes, James E. Associate

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

Barlow, Dr. Howard W. Senior

BRANIFF AIRWAYS, INC.

Cummock, Benjamin J. Senior
Nicol, William F. Senior

CONSOLIDATED AIRCRAFT CORP.

Harborne, E. G. Senior

DILLON SCALE CO.

Dillon, M. D. Associate

NORTH AMERICAN AVIATION, INC.

Burrier, Horace E. Senior
Bratton, W. A. Associate
Chapman, Jesse W. Senior

PAN AMERICAN AIRWAYS, INC.

Everett, P. E. Senior
Klahn, Sabas Senior
Rising, James G. Associate
Wiechers, J. F. Senior

SOUTHERN AIRCRAFT CO.

Moe, Orin Senior

LAKES DIVISION

FORD MOTOR CO.—AIRFRAME DIVISION

Rowlands, William A. Senior

GOODYEAR AIRCRAFT CORPORATION

Waldman, Jack J. Senior

HOWARD AIRCRAFT CORPORATION

Dressel, Donald W. Senior
Rameke, Carl F. Junior

LAKES DIVISION—DAYTON CHAPTER

NOTE: Due to the War Emergency elections are postponed to early in 1943. Names appearing in previous issue of Yearbook are included, subject to confirmation.

CHAPTER OFFICERS FOR 1941

Chairman—Stanley R. Huls Materiel Center—Army Air Forces
Vice-Chairman—Seymour W. Dunham Materiel Center—Army Air Forces
Secretary-Treasurer—Wayne B. Withers Materiel Center—Army Air Forces

CHAPTER OFFICERS FOR 1942

Chairman—Seymour W. Dunham Materiel Center—Army Air Forces
Secretary-Treasurer—Wayne B. Withers Materiel Center—Army Air Forces

CURTISS-WRIGHT CORPORATION

Croftchik, V. P. Junior
Deubler, L. P., Jr. Junior
Durkee, E. D. Junior
Egner, F. E., Jr. Junior

Pendergast, Webster G. Senior
Pleasant, L. N. Senior
Steele, R. E. Senior

GENERAL MOTORS CORP.—FISHER BODY DIVISION

Gosling, Ira B. Senior

THE HOWE SCALE COMPANY

Brennen, W. J. Associate

MATERIEL CENTER—ARMY AIR FORCES

Dunham, Seymour W. Senior
Horst, Carl O. Senior
Huls, Stanley R. Senior

Schmit, Fred S. Associate
Spevacek, Otto F. Senior
Withers, Wayne B. Senior

REPUBLIC AVIATION CORP.

Kleinhaus, Robert G. Senior

TOLEDO SCALE COMPANY

Hem, H. O., Dr. Associate

WACO AIRCRAFT COMPANY

Warner, Ralph E. Senior

PLAINS DIVISION . . . ST. LOUIS CHAPTER

CHAPTER OFFICERS FOR 1941

Chairman—C. Ray McWhorter Curtiss-Wright Corp.
Secretary-Treasurer—David McCalla McDonnell Aircraft Corp.

CHAPTER OFFICERS FOR 1942

Chairman—Warren D. Mateer (Resigned) Curtiss-Wright Corp.
Acting Chairman—Edward A. Langleben Emerson Electric Mfg. Co.
Secretary-Treasurer—David McCalla McDonnell Aircraft Corp.

CHAPTER OFFICERS FOR 1943

Chairman—Edward A. Langleben Emerson Electric Mfg. Co.
Secretary-Treasurer—Bradley C. Kohr McDonnell Aircraft Corp.

DIRECTORY

CURTISS WRIGHT CORP.—AIRPLANE DIVISION

Borgmeyer, Paul D. Senior
Bailey, James R. Junior
Dunn, H. M. Senior
Engelhardt, L. F. Associate

CHICAGO & SOUTHERN AIRLINES

Anderson, Rolland L. Senior

McDONNELL AIRCRAFT CORPORATION

Brower, Roland Lee Senior
Kohr, Bradley C. Senior
Kugler, Theodore R. Charter

EMERSON ELECTRIC MFG. CO.—TURRETT DIVISION

Handson, Melvin Junior
Langleben, Edward A. Senior

LAISTER-KAUFFMANN AIRCRAFT CORP.

Bouton, G. Innes Junior
Chapman, Randall N. Junior

PARKS AIR COLLEGE, INC.

Dennis, Willard Kelso Associate

PLAINS DIVISION . . . WICHITA CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—Frank J. Skach Beech Aircraft Corp.
Secretary—Albert D. Kipfer Beech Aircraft Co.
Treasurer—Fred C. Bonorden Beech Aircraft Co.

CHAPTER OFFICERS FOR 1943

Chairman—Paul W. Hiltner Boeing Airplane Co.
Secretary—Edward M. Skinner Cessna Aircraft Co.
Treasurer—Paul Miller Beech Aircraft Co.

BEECH AIRCRAFT COMPANY

Bonorden, Fred Senior
Flory, Harold Senior
Fohair, T. Gerald Senior
Greene, Harry L. Senior
Klock, Donald Senior

BOEING AIRPLANE COMPANY—WICHITA DIVISION

Arnold, Max Senior
Beal, Frederick M. Senior
Fisher, Marston L. Senior
Gemmill, F. B. Senior
Grove, Preston Senior

CESSNA AIRCRAFT COMPANY

Harrington, S. L. Senior

CULVER AIRCRAFT COMPANY

Lee, Allen Senior

WESTERN DIVISION . . . LOS ANGELES CHAPTER

CHAPTER OFFICERS FOR 1942

Chairman—Frank J. Meyer Northrop Aircraft, Inc.
Secretary—James A. Crabtree Hughes Aircraft Co.
Treasurer—Ed. L. Payne North American Aviation, Inc.

CHAPTER OFFICERS FOR 1943

Chairman—Martin Boe Vultee Aircraft, Inc.
Secretary—C. R. Englebray Lockheed Aircraft Corp.
Treasurer—C. F. Hoppe, Jr. Douglas Aircraft Co.

BENDIX AVIATION, LIMITED

Martinez, J. Felix Senior

BRIEGLEB SAILPLANE CORP.

Rounds, George Louis Associate

CONSOLIDATED AIRCRAFT CORP.

Avery, Sydney H. Senior

DOUGLAS AIRCRAFT COMPANY—CALIFORNIA PLANT NO. 1

Benedict, G. W. Senior
Burch, L. H. Associate
Castle, G. T. Senior
Davis, E. Charter
Douglass, Paul W. Senior
Downs, W. R. Charter
Eakin, E. C. Senior
Flushman, D. Senior
Glasco, J. B. Associate
Gray, L. Senior
Gross, E. Associate
Gross, O. A. Senior

DOUGLAS AIRCRAFT COMPANY—CALIFORNIA PLANT NO. 2

Anderson, Harold J. Charter
Anderson, John R. Charter
Bennett, Vance W. Senior
Bird, Wayne Senior
Blankenship, J. P. Senior
Clute, E. V. Junior
Drewes, Warren W. Junior

DOUGLAS AIRCRAFT COMPANY—CALIFORNIA PLANT NO. 3

Bande, Frederick B., Jr. Junior
Boon, John Raymond Junior
Eldridge, Robert A. Associate
Crimwood, A. E. Senior
Halde, J. Vander Senior
Holtz, Walter W. Senior

FAIRBANKS, MORSE & COMPANY

Dow, J. Howard Associate

THE HOWE SCALE COMPANY

Krier, G. A. Associate

DIRECTORY

HUGHES AIRCRAFT COMPANY		
Crabtree, James A.	Charter	Karasyk, Seymour Senior
Dietrich, Roy J.	Senior	Mathison, G. E. Associate
Dizney, Orville V.	Senior	Schafer, H. W. Senior
INTERSTATE AIRCRAFT AND ENGINEERING CORPORATION		
Abrahamson, Herman Junior	Parker, John Junior	Reams, John C. Charter
Cross, Barton Junior	Quigley, Raymond Junior	Truex, Wendell Senior
KROEHLER-DOAK AIRCRAFT CO.		
Cowan, Harry N. Associate		
LIBRASCOPE, INC.		
Kernkamp, Lloyd F. Charter	Schwendener, Karl D. Senior	
Martin, Arthur Associate	Snella, Jerome Associate	
LOCKHEED AIRCRAFT CORP.		
Ashton, J. W. Associate	Gibson, Donald E. Senior	Pitt, Paul A. Senior
Baer, Clarence L. H. Senior	Hackney, L. R. "Mike" Charter	Riddell, Edward F. Senior
Barnett, Sidney J. Senior	Heath, Robert L. Associate	Robinson, Alfred C. Senior
Bauer, Bruce F. Charter	Hintlian, Charles Senior	Ruppelius, Fred C. Senior
Beck, Peter A. Associate	Hopler, O. Edward, Jr. Charter	Sample, William L. Senior
Boier, Donald H. Senior	Hubbard, William D. Senior	Saelman, Benjamin Junior
Bogona, Bernard L. Junior	Hughes, John A. Senior	Schramm, Carl H. Charter
Bridston, Alfred M. Junior	Hunnex, Milton D. Charter	Seymour, Edward V. Junior
Brown, J. Emerick Charter	Kostrewa, Frank J. Junior	Sherwood, Medford, N. Senior
Bugby, Roger A. Senior	Lague, James Senior	Smith, Richard L. Senior
Cochrane, William R. Senior	Loh, John S. Senior	Starbird, William B. Junior
Cox, William J. Junior	Luther, Phillip A. Senior	Staller, William H. Senior
Davis, Austin L. Associate	McGinty, Walter F. Associate	Sutter, Charles E. Senior
Edwards, Jay W. Junior	MacGregor, Charles E. Senior	Thompson, Leete A. Senior
Eglebry, Channing R. Senior	Martin, William A. Charter	Trotter, Vincent H. Charter
Fahlen, Edwin T. Charter	Matthews, George C., Jr. Senior	Underwood, Robert M. Senior
Fife, Edward Charter	Murdenk, Robert A. Charter	Vall, Frederick L. Junior
Fosse, Adrian F., Jr. Senior	Nordlinger, Louis S., Jr. Senior	Vesco, Arthur E. Senior
Foster, Reginald E. Charter	Page, Arthur H. Associate	Whitney, Edgar R. Senior
Fournet, Dewey J., Jr. Senior	Pearlin, Leo R. Senior	Williams, James E. Senior
Fredericks, Carl K. Junior	Pierce, Allen A. Charter	Wilson, Robert J. Senior
NORTH AMERICAN AVIATION, INC.		
Beddoes, C. E. Junior	Ford, Frederick A., Jr. Charter	Payne, Edgar L. Charter
Brown, Sydney S. Junior	Johnson, C. Victor Charter	Raeber, Henry Junior
Clark, Raymond O. Charter	King, Robert J. Senior	Raynor, LeRoy Senior
Decker, Walton H. Charter	Lalor, Thomas M. Honorary Member	Taylor, E. A. Senior
Douros, George C. Senior	Morgan, Dan D. Senior	
NORTHROP AIRCRAFT, INC.		
Baum, Fred J. Honorary Member	Kenney, John F. Junior	Shafel, Robert T. Senior
Graham, Connelly L. Senior	Meyer, Frank J. Senior	Strassner, R. M. Associate
Hughes, Whitney D. Senior	Northrop, John K. Honorary Fellow	
Kean, Keith W. Senior	Rich, J. V. Charter	
PAN AMERICAN AIRWAYS, INC.		
Moy, Stanley Senior		
RYAN AERONAUTICAL COMPANY		
Brush, Birch M. Junior	Spicer, Edgar H. Senior	
Hearne, Thomas P. Associate	Wood, J. Holman Associate	
STANFORD UNIVERSITY		
Niles, Dr. Alfred S. Associate		
TIMM AIRCRAFT CORPORATION		
Burke, R. W. Senior	Levy, Charles N. Associate	Mehlman, Jack B. Senior
TOLEDO SCALE COMPANY		
Nicholson, G. C. Associate		Chapel, Charles Edward Associate
VEGA AIRCRAFT CORPORATION		
Ashton, James W. Associate	Keane, Joseph Senior	Swift, Ralph H. Senior
Barnes, V. Edmund, Sr. Senior	Laird, Robert S. Senior	Vick, Howard W. Senior
Davis, Thomas A. Senior	Re, Carl Junior	Ward, James E. Junior
Fulton, Clifford A. Senior	Sichveland, Stanley Senior	Webb, Raymond O. Senior
Hughes, William E. Senior	Silvius, Kenneth W. Senior	
Hutchinson, Samuel J. Senior	Stacy, John, Jr. Senior	
VULTEE AIRCRAFT, INC.		
Carhartt, Thomas P. Junior	Holden, C. J. Senior	Roberts, Edward E. Senior
Dorsett, Clarence Senior	Maloy, Travis L. Senior	Sheffield, Harold B. Senior
VULTEE FIELD DIVISION		
Barnes, John C. Associate	McWhorter, Ivan L. Senior	Templeton, Gene Senior
Boe, Martin Charter	Mulcahy, Charles T. Associate	Wicks, William H. Senior
Cline, Dean W. Senior	Smith, Norman Senior	

FOREIGN MEMBERS

COUNCIL FOR SCIENTIFIC & INDUSTRIAL RESEARCH
DIVISION OF AERONAUTICS, MELBOURNE, AUSTRALIA

H. A. Willis Senior	
DEPARTMENT OF CIVIL AVIATION, MELBOURNE, AUSTRALIA	SAUNDERS-ROE, LIMITED, GREAT BRITAIN
A. C. Berg Associate	L. W. Rosenthal Senior
PAN AMERICAN-RACE AIRWAYS, INC., LIMA, PERU	TRANS-CANADA AIRLINES
John T. Shannon Senior	C. A. Hangoe Senior

FOREIGN CONTACTS

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

Division of Aeronautics
 Melbourne, Australia

Melb. June, 1948.

Dear Mr. Watson,

Some little while ago my chief, Mr. L. J. Goodwin, received from Mr. L. B. Reider of Lockheed, a very interesting letter concerning the activities of the Society of Aeronautical Weight Engineers, together with a 1947 year book and copies of a number of papers published by the Society. This was in response to a letter I wrote to him towards the end of 1945 year after reading about the Society in "Aero Digest".

Mr. Reider has referred me to you as national chairman for 1948 for further information regarding the Society. We desire to keep in close touch with the Society's activities, and I should like to be nominated for membership. At the moment there is some difficulty about remitting money to the United States, but I have managed to obtain a Money Order for 1 dollar (see bill attached) in your favour. I should like to have copies of the transactions of the Society and of any or all volumes of the Bulletin, Handbook or other publications as they become available - if the publications are not in final issue to be published, I trust you will help me to forward the money for them when they arrive here.

In this mail I am writing to Mr. Frank Meyer of Northrop Aircraft who, I understand, is distributing Volume 1 of the Handbook.

With good wishes for the continued success of your Society,

Yours sincerely,
H. A. Willis
 (U.S. 51116)
 C/O STRUCTURES & MATERIALS SECTION.



VICTORIA No 9614

ELIZABETH STREET

Money Order

PAY the Person named on my Order of Value the sum of

Twenty	Shillings	Four	Pence
--------	-----------	------	-------

To the Order of _____

The Order of Cash _____

This order shall be treated as the Order to which the account is payable

NOTE: This order is not valid unless it is countersigned by the issuer.

CANADIAN POSTAL MONEY ORDER
MANDAT DE POSTES CANADIEN

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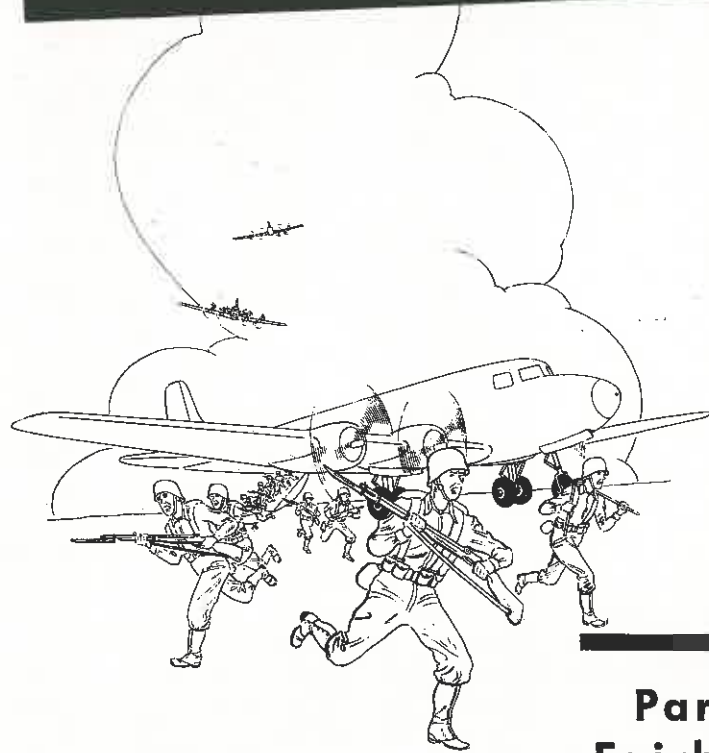
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At Home—On Battle Fronts FAIRBANKS DETERMINE THE LOADS



IN factories or in distant combat areas Fairbanks Scales are serving to check distribution of loads, determine center of gravity, specific wheel loads or total weight of our giants of the air. Fairbanks-Morse, drawing on wide experience in the manufacture of railroad track scales, has pioneered the flush type aircraft scale. Capacities are available to handle the heaviest plane—to weigh main wheel and tail or nose wheel load simultaneously. For portable service Fairbanks Scales are available in capacities from 10,000 to 55,000 lbs.

Partial List of Users of Fairbanks Aircraft Scales

Aeronca Aircraft Corp.
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De Havilland Aircraft Co.
Delta Air Corp.

Douglas Aircraft Co.
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Howard Aircraft Corp.
Hughes Aircraft, Inc.
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Nash Kelvinator Co.
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New Zealand Government
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North American Aviation, Inc.
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FAIRBANKS·MORSE



A Douglas C-54 gets a weight check on Fairbanks 55,000 pounds capacity portable aircraft scales.

Many Other Fairbanks Scales Help Maintain Mechanical Perfection

Throughout the entire process of aircraft manufacture and maintenance Fairbanks Scales are "on the job." They weigh materials in process, count parts, weigh predetermined amounts and prepare printed records for production control or accounting. There are Fairbanks Scales to weigh from one-half grain to 1,000,000 pounds. Models include bench type, portable, built-in, crane, truck, railroad track—all in countless modifications.

For complete details on any type scale write Fairbanks, Morse & Co., 600 So. Michigan Avenue, Chicago, Illinois.



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★



PROCEDURE AND REQUIREMENTS
for Obtaining
SOCIETY OF AERONAUTICAL WEIGHT ENGINEERS, INC.
SEAL OF WEIGHT APPROVAL

A. PURPOSE

A-1. In an effort to encourage greater interest in weight control of aircraft accessories and hardware the Society of Aeronautical Weight Engineers, Inc., has established a "Seal of Weight Approval." This seal together with a certificate of weight approval will be awarded to equipment which is light in weight commensurate with sound design.

A-1A It is the intention to award the seal to all items of a certain type which are of light, sound construction. In brief, no attempt will be made to award the seal to only the lightest article of each type, but it will be awarded to all articles of a specific type which are light in weight. Articles which carry this seal will automatically be chosen by weight engineers for it will be realized that they have been pre-examined by the S. A. W. E., and have been found to be of light economical construction. It is felt that this will encourage certain manufacturers whose equipment is obviously heavy and have made no attempt to lighten their design, to do so. Thus, by bringing these items to the attention of the aviation industry, a trend toward education for light-weight equipment will result.

A-1B The airplane manufacturers are expending hundreds of thousands of dollars each year to control the weight of their airplanes. During the past five years this phase of aeronautical engineering has been steadily expanding and improving in efficiency. Although far from perfect, the weight control sections of the various companies are exercising effective control over the portion of the airplane which comes under their jurisdiction. However, with the rapid change in world events and its resultant requirement for mass production, the percentage of an airplane which is under the control of the airplane manufacturer is rapidly being reduced. The trend is toward the practice of the automotive industry of securing as much material as possible from outside sources. As a result, the percentage of the present airplane engineered and constructed by accessory and hardware manufacturers is equal to that designed by the airplane manufacturer.

A-1C The S. A. W. E. feels that the time has arrived for the equipment manufacturer to carry his share of the responsibility for the weight of the finished airplane. It is realized that the equipment manufacturers have had less experience in weight control procedure than the airplane manufacturers. Therefore, through S. A. W. E. it is intended to establish an educational program for equipment weight reduction.

A-2. This procedure describes the method whereby the Society of Aeronautical Weight Engineers, Inc., will award a certificate of weight approval for accessories which the Society considers light and serviceable in accordance with requirements set forth herein.

B. ORGANIZATION

B-1. The S. A. W. E. shall establish two committees to govern and regulate proceedings as outlined herein. These committees shall be comprised of the chiefs of the weight sections of three member companies of the East Coast Division and three of the West Coast Division.

B-2. A chairman shall be in charge of each Division. All contact and/or correspondence shall be made through him. The name of the chairman and company affiliation will be announced annually by the National Chairman of the Society of Aeronautical Weight Engineers, Inc.

B-3. In order to avoid duplication of effort a copy of the proceedings will be transmitted between committees. If one committee has an objection to an item of equipment under consideration for award of approval, they will notify the other committee. If no objection to the award is filed within ten days after receipt of the first committee's findings, it will automatically be considered as acceptable.

C. APPLICATION FOR CERTIFICATE

C-1. A manufacturer desiring to obtain an S. A. W. E. certificate of weight approval for an article shall contact the committee nearest to him, i.e., the West Coast Division will be responsible for approval of manufacturers on the west coast and the East Coast Division of manufacturers on the east coast.

C-2. A manufacturer in applying for a certificate of weight approval shall submit all necessary technical data including cost of the article. Insofar as practicable, the unit itself shall accompany the aforementioned data.

C-3. If for any reason the manufacturer has strengthened certain parts because of serviceability or other stringent service requirements, it is recommended that he explain why, for it is not the intention of the Society to hinder any manufacturer who has a just cause for increasing the weight of his product where necessary. Consideration as to serviceability of the part shall be taken into account.

C-4. Within a minimum of time after the receipt of an application the committee will report its findings to the manufacturer. If a sample article has been included, it will be returned. All other data shall be retained by the Society. All data submitted will be considered as being strictly confidential.

D. GENERAL REQUIREMENTS

D-1. The following shall constitute the merits upon which the certificate of weight approval shall be issued.

D-1A Lightness—The article shall be as light as possible consistent with design requirements.

D-1B Serviceability—Consideration as to the serviceability shall be a major consideration. Merits of serviceability shall be based on all possible sources including information from the research laboratory and service departments of the member companies.

D-1c Practical operating features.

D-1D Cost—In cases where cost of a light article is exorbitant or excessive as compared with similar articles, a seal will not be granted.

E. ISSUANCE OF CERTIFICATE

E-1. No blanket certificate of weight approval shall be issued to any one company. Certificates shall be issued separately for each individual type of accessory.

E-2. The number of seal of approvals on any one type of accessory which may be awarded is not restricted.

E-3. The certificate of weight approval shall be effective for a period of one (1) year, after which time it may be renewed by application.

E-4. Each certificate of weight approval shall bear a serial number and be recorded by the Society of Aeronautical Weight Engineers, Inc. No manufacturer may use the certificate of weight approval unless they have been so authorized by the Society.

E-5. Any proof of collusion or bargaining on the part of a manufacturer shall automatically disqualify said manufacturer the right to receive a certificate of weight approval at that time or any time in the future until such situation is corrected.

F. NOTES

F-1. Notice: When drawings, recommendations, or data of the S. A. W. E. other than the certificate of weight approval are used by any manufacturer, the Society of Aeronautical Weight Engineers, Inc., thereby incurs no responsibility or any obligation whatsoever; and the fact that the Society may have furnished, formulated or in any manner supplied said drawings, recommendations, or other data is not to be regarded by implication or otherwise as being totally acceptable to aircraft manufacturers.

The two committees of the S. A. W. E. which will award the Seal of Weight Approval for 1942 were comprised of the following:

EAST COAST	WEST COAST
MR. SIDNEY SIGGIA— <i>Chairman</i> In Charge Weight Control Engineering Department Bellanca Aircraft Company	MR. L. R. HACKNEY— <i>Chairman</i> In Charge Weight Control Engineering Department Lockheed Aircraft Corporation
MR. PAUL PIPER In Charge Weight Control Engineering Department The Glenn L. Martin Company	MR. F. D. PORTER In Charge Weight Control Douglas Aircraft Company, Inc.
MR. GEORGE DARRACOTT In Charge Weight Control Engineering Department Vought-Sikorsky Aircraft Div. United Aircraft Corporation	MR. JOHN REAMS In Charge of Weight Control Engineering Department Interstate Engineering and Aircraft

NOTE:—THE COMMITTEES FOR 1943 WILL BE ANNOUNCED EARLY IN 1943
BY THE NATIONAL CHAIRMAN

Weighed..

NOT found wanting

HOWE Aircraft Scales for:
Measuring Oil and Fuel Consumption
Motor Testing
Parts Weighing
Parts Counting
Production Control
Wing and Tail Weighing
Weighing Complete Planes

Howe Scales play vital role in America's All-Out Air War . . .

From Kiska to the Solomons, from Iceland to Tunisia, from Atlantic shores to the South Pacific, American aircraft has been giving a good account of itself. It has been weighed and NOT found wanting.

To the Aeronautical Weight Engineer goes a big share of the credit for the part that weight plays in American aircraft performance—in plane speed, altitude and maneuver-ability.

Scales, too, play their part. HOWE Scales, today, weigh bombers, fighters and scout planes; they test airplane motors, measure oil and fuel consumption, weigh and count parts, and are responsible for production control.

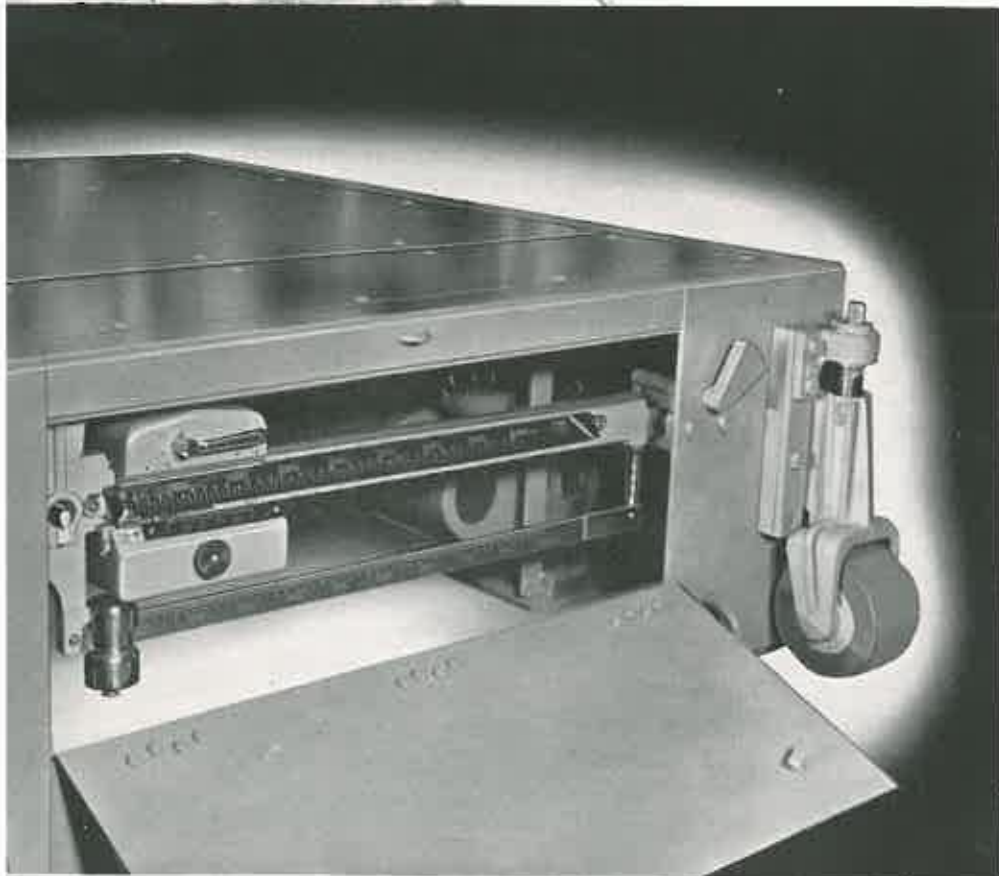
Whatever aviation's weighing problem may be, there is a HOWE Scale to meet it. For detailed information on HOWE aeronautical scales, write to THE HOWE SCALE COMPANY, 3043 Scale Avenue, Rutland, Vermont.

BEAM - DIAL OR WEIGHTOGRAPH

. . . Only HOWE makes ALL Three!



Dynamometer Weightograph for Testing Motors.



20-Ton flat-deck scale for bomber wing-section weighing.



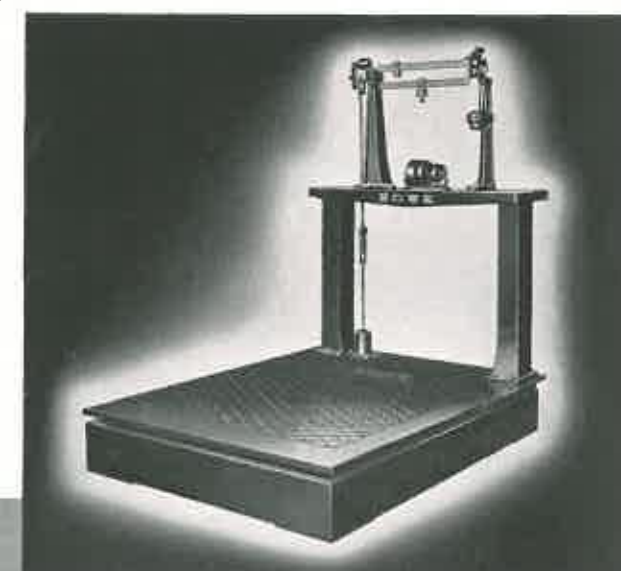
Weightograph for Counting Plane Parts.



Parts-Weighing Dial Scale.



Weightograph for measuring Oil and Fuel Consumption.



Platform Scales in Capacities from 500 lbs. to 300 tons.

HOWE Aircraft Scales



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S. A. W. E.

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LYLE R. HACKNEY
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EDWARD S. FIFE
Secretary, 1939
Vice-Chairman, 1940



MEL HUBER
Secretary-Treasurer
1940

1941



JOHN E. AYERS, SR.
Chairman



FRANK J. MEYER
Vice-Chairman



WALTER A. SEMION
Secretary-Treasurer

1942



DONALD R. WATSON
Chairman



WILLIAM H. DOWNS
Secretary



C. FRED COMSTOCK
Treasurer

1943



HOWARD W. BARLOW
Chairman



WILLIAM O. BOYD
Secretary



JAMES B. CHILDERS
Treasurer

SOCIETY OF AERONAUTICAL WEIGHT ENGINEERS, INC.

"RESUMÉ OF NATIONAL MEETING"

April 27th to 29th, 1942

Palmer House, Chicago

CHAPTER 1 PRELIMINARIES

Meeting opened Monday, April 27, 1942, with Mr. D. R. Watson, National Chairman, presiding. He gave a brief address of welcome. Each member was introduced. A convention fee of \$7.00 per representative was agreed upon by a vote of the representatives.

CHAPTER 2 VOLUME III OF THE S.A.W.E. WEIGHT HANDBOOK—

Mr. Paul Piper of the Glenn L. Martin Co. was in charge. He outlined his plan: (1) A book in which data for estimating the weights of a new plane are compiled. (2) Correlation of information into general curves, formulae, charts, etc. He believed that the first exchange of data should be based on AN 9103-C, with some general data on areas, etc. added. Some discussion followed and subject was continued to Chapter 4.

CHAPTER 3 EXCHANGE OF DATA—PROJECT N-2

Mr. Dunham was in charge of discussion. He stated that a blanket release of data by the Army was impossible and each case would have to be passed on separately. He discussed the "Wing Weight" study made by the Dayton Chapter members. The possibility of getting more work done in Dayton by the Army was discussed. The demand of manufacturers for such data might make an appropriation for such work possible later. Manpower to carry on such a project at Dayton is lacking at present.

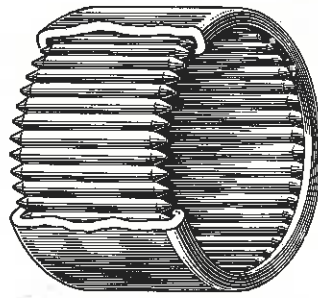
CHAPTER 4 FURTHER DISCUSSION OF VOLUME III

It was voted after some discussion, 18 to 4, to continue the project. It was voted, 12 to 4, to turn the matter of collecting data over to Mr. Piper as Chairman of the Volume III sub-committee. He agreed to continue with the project.

CHAPTER 5 CENTER OF GRAVITY LIMIT REQUIREMENTS—PROJECT E-6

It was voted to eliminate the project from the agenda since the Navy requirements of SR-5 are now interpreted liberally and the Airline's problem should be taken up with the civil authorities separately.

These 6 Features Of The TORRINGTON NEEDLE BEARING Contribute To Substantial Weight Economies



THE Torrington Needle Bearing offers unusual opportunities for weight conservation in aircraft design, combined with the operating advantages of anti-friction construction. These distinctive features of the Needle Bearing contribute to savings in weight:

1. The bearing itself is compact in design and light in weight. Standard types have only two component parts: a full complement of small-diameter rollers, and a thin outer race, hardened for strength and wear resistance. In most cases, the hardened shaft serves as the inner race; where it is not practicable to harden the shaft, a hardened sleeve is the only additional part necessary.

2. The outside diameter of the Needle Bearing is comparable to that of a plain bushing, and much smaller than that of other types of anti-friction bearings. This feature permits the use of small-diameter housings, with substantial savings in weight, since the weight of the housing varies as the square of the diameter.

3. The bearing's full complement of rollers provides exceptionally high load capacity, allowing the use of relatively small sizes in heavy-duty applications.

4. The bearing is installed in the housing by a press fit, which is sufficient to hold it against movement in any direction. No retaining ring, wires, washers, staking, or end plates are required to hold the Needle Bearing in place.

5. In most applications, the Needle Bearing requires no oil

lines or forced-feed lubricating equipment. The outer race is provided with turned-in lips, forming a reservoir that holds ample lubricant for long periods of operation. The rotation of the rollers constantly supplies lubricant to rotating shafts.

6. The Needle Bearing's low coefficient of starting and running friction decreases power requirements, and permits reduction in the weight of power operating equipment.

In addition to these important

weight-saving features, the Needle Bearing offers the advantages of low cost, long life, and ease of installation. Torrington engineers will cooperate in adapting these advantages to your aeronautical designs.

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.

Makers of Needle and Ball Bearings

New York Boston Philadelphia Detroit
Cleveland Seattle Chicago Los Angeles
San Francisco Toronto London, England

EXACT COMPARISON OF STANDARD NEEDLE BEARING,
BALL BEARING, AND SOLID RACE NEEDLE BEARING
All with 1/4" I.D. to Mount on Same Shaft

BEARING TYPE	STANDARD NEEDLE BEARING No. B-45-X	BALL BEARING No. K-4	SOLID RACE NEEDLE BEARING No. AT-4
Dimensions	1/4" I.D. 3/16" O.D. 5/16" Long	1/4" I.D. .9014" O.D. .484" Long	1/4" I.D. 3/4" O.D. 3/8" Long
Capacity	940	1500	3830
Weight	.006	.045	.041

It will be observed from this comparison that the weight of the Standard Needle Bearing is about one-seventh of that of a Ball Bearing or solid Race Needle Bearing for the same shaft diameter, and that considerably less O. D. space is required in the surrounding member. Nevertheless, the capacity of the Standard Needle Bearing is nearly half that of the Ball Bearing and one-quarter that of the Solid Race Needle Bearing.

**TORRINGTON
NEEDLE BEARING**

CHAPTER 6 MINIMUM FLYING WEIGHT—PROJECT E-5

Mr. Kipfer of Boeing was appointed a committee of one to investigate the government specifications and see if the subject was properly defined and then issue a report and recommendations on the project.

CHAPTER 7 GUN TURRET BREAKDOWN—PROJECT N-11

Mr. McCalla of McDonnell Aircraft Corp. was in charge. He mentioned results of the first form submitted. The need of such a detailed breakdown was discussed and it was noted that while hard to obtain accurately, under some circumstances it was needed both for balance calculation and stress department's analysis of supports.


CHAPTER 8 REVISIONS TO ARMY AIR FORCES AND NAVY SPECIFICATIONS—PROJECT N-10

Mr. Lentini was in charge. He reviewed needed changes in Navy Specification SD-24 to bring it in agreement with new Weight Statements. The number of planes to be weighed was discussed. It was brought out that the Army retained the weighing of every 20th plane for post-war peace-time purposes and usually agreed to modify for war production contracts to about every 100th. The requirements of Navy Specification SR-69B covering "Erection and Maintenance" are to be modified. More detail concerning weight groups and loading schedules are to be required. The use of "loading schedules," "index unit charts," "Librascopes" and Cox and Stevens "slide rules" were discussed and the need for them was emphasized. The form for the monthly "Weight Status" Report was also discussed and the fact brought out that some companies use a graphic presentation of status instead of the exact form the Navy now specifies. A number of items relating to Weight Control needing revision in the Air Corps Handbook were mentioned. Mr. McWhorter of Curtiss, St. Louis, was appointed chairman of the committee to carry on the project.



CHAPTER 9 DEFINITION OF AIRFRAME—PROJECT N-4




Mr. Hackney summed up the discussion as follows: "The Airframe weight statement, as prepared by Mr. Fife, with the purpose, factual data, the approach and determination and definition and the remainder of the explanation is presented for vote as being acceptable to the Society and to be turned over to the Government agencies for their approval and action."



It was voted to accept the above statement.









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HYDRAULIC ACCESSORIES
RADIO EQUIPMENT
TUBE CLAMPS**


HAND PUMPS  RESTRICTOR VALVES  PRESSURE REGULATORS 

CHECK VALVES  DISCONNECT COUPLINGS  ACCUMULATORS 

REMOTE CONTROL SYSTEMS  HYDRAULIC ELECTRIC SWITCHES 

POWER BRAKE VALVES  SEQUENCE VALVES  SELECTOR VALVES 

ACTUATING CYLINDERS  TUBE CLAMPS  RADIO EQUIPMENT 

BENDIX  *North Hollywood*
SUBSIDIARY OF BENDIX AVIATION CORPORATION

CHAPTER 10 RESIDUAL FUEL AND OIL—PROJECT N-12

Mr. Lampland presented the Airlines' problems. Mr. Watson suggested the subject should be divided under two headings of "Military" and "Commercial," as their problems differ considerably.

CHAPTER 11 SERVICE PICK-UP—PROJECT W-4

Mr. Meyer of Northrop discussed and summarized the topic. The subject divides itself into "Delivery Pick-up" and "Operational Pick-up." He proposed four-tenths of one per cent of weight empty as reasonable figure in predicting delivery pick-up. He suggested that the airlines form a committee to study problems on "Operational Pick-up."

CHAPTER 12 AIR TRANSPORT WEIGHT CONTROL—PROJECT N-13

Mr. McMillan of American Air Lines summarized results of their separate session. Three general topics were discussed as follows:

- (1) Residual Fuel and Oil was summarized by Mr. Lampland.
- (2) Safety Regulation Release 80, which outlines airline weight control procedure.
- (3) The Position of the Manufacturer in Airline Weight Control.

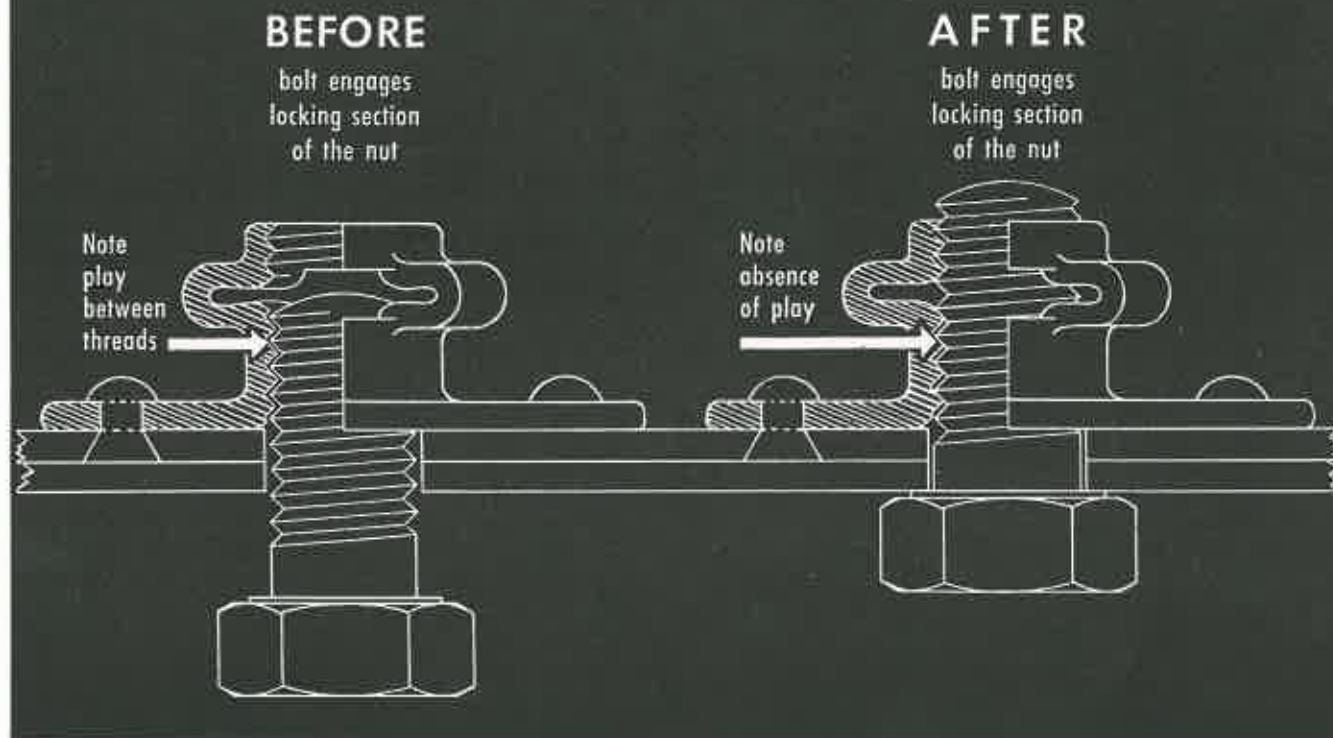
CHAPTER 13 MINIMUM EXPECTED AND GUARANTEED ENGINE WEIGHTS—PROJECT E-3

The project was put on the agenda to bring out how general the experience had been of having disagreements between guaranteed and actual engine weights of such a magnitude that the C. G. of the airplane was seriously affected. The fact that engine guarantee figures were set high to cover production increases was brought out. Mr. Porter of Douglas stated need of detail weight of engine and accessories, especially of the "torque nose" which is often left on for test flights. Mr. Miller of Wright stated a production engine will pick up 15-20 lbs. per year from the same dies and molds. Except for development errors whose elimination may add unpredictable amounts of weight, the above 15-20 lbs. is all the normal variation to be expected.

CHAPTER 14 PROPELLER WEIGHT AND C. G. DATA—PROJECT E-4

Since both Mr. Copeland, who was to have discussed the subject, and Mr. Pendergast, who had the main comment on the subject last year, were absent, the project was shelved.

HERE'S HOW BOOTS SELF-LOCKING NUTS INSURE VIBRATION-PROOF CONNECTIONS



CONSTANT PRESSURE CONTACT ELIMINATES AXIAL PLAY

The Boots Self-Locking Nut is a one-piece all-metal nut which withstands the severest vibration. Essentially two nuts in one, the top (locking) section is displaced in a downward direction so that its locking threads are out of lead with the load carrying threads of the lower section. The two sections are connected by a spring member, which is an integral part of the nut.

Upon the insertion of a bolt, the spring member, because of its elasticity, allows the top section of the nut to be extended to engage properly with the threads of the bolt. A constant force is thus established which locks the nut firmly into position without damage to the threads of nut or bolt. Axial thread play is eliminated.

BOOTS NUTS SAVE UP TO 60 LBS. PER PLANE, DEPENDING ON MODEL

Consider the weight of the Boots all-metal self-locking nuts when trying to save all-important weight in design. Consider particularly the variety of Boots anchor nuts in which the sheet metal construction allows savings of 18% to 68%—many valuable pounds per airplane directly and indirectly.

In addition to the important and substantial weight-saving characteristic, Boots Nuts have another outstanding advantage: they are all-metal, which means they may be used over and over again with continuing self-locking efficiency. Boots Nuts "Outlast the Plane."

Write for new catalogue today.

There's a BOOTS NUT for every application

BOOTS

BOOTS AIRCRAFT NUT CORPORATION

GENERAL OFFICES, NEW CANAAN, CONNECTICUT

CHAPTER 20 INSTRUCTIONS BOOKLET FOR USE OF AN FORMS—PROJECT E-2

Mr. Ayers mentioned need of brief instruction booklet for training new personnel. While all agreed on need, because of differing systems, it was agreed subject should be shelved for a while. Mr. Hackney is giving a "Weight Control" course at the University of California, the synopsis of which may later be available as a basis for a booklet.

CHAPTER 21 S.A.W.E. JOURNAL—PROJECT E-1

Charts on the advertising campaign were distributed and discussion of the Journal was given by Mr. Watson.

CHAPTER 22 YEARBOOK FOR 1942—PROJECT E-7

It was suggested that membership lists be sent in as soon as available. Methods of financing were discussed. Airline advertising was ruled out. It was mentioned that funds might have to be taken from the Social Committee treasury.

CHAPTER 23 PART I—MISCELLANEOUS REPORTS

Registration at Convention

- 26 Representatives of 25 companies
- 2 Army Air Force Representatives
- 8 Accessory representatives of 7 companies.
- 12 Airline delegates from 8 airlines
- 2 C.A.A. representatives
- 1 Publisher representative
- 3 Scale company representatives from 2 companies.
-
- 54 TOTAL

Company Memberships

25 applications with 23 paid up.

Treasurer's report was read and accepted.

Cost of printing conference program was discussed.

Fees for Papers and Librarian.

The suggestion was made that Mr. Nicol serve as librarian on a business basis and issue papers on basis of cost, after publication of same was agreed upon by the committee.

Next National Conference

Votes	Location
19	Dallas
5	Kansas City
5	New Orleans
1	Columbus
1	Los Angeles
1	Albuquerque

Membership was opened to ladies.

Procedure for Honorary Fellowship

The subject was discussed. It was suggested that a committee be set up to formulate the rules for such subjects.

CHAPTER 23 PART II—FUTURE S.A.W.E. PROJECTS

(a) Vol. IV—"Operators' Weight Handbook"

Mr. McMillan was made Chairman.

(b) Rotary Wing sheets for Forms AN 9102 and AN 9103

Mr. Rigby was appointed Chairman.

(c) Aeronautical Dictionary

This subject was discussed and it was finally decided that a section be added to Vol. IV entitled "Weight Control Definitions and Terminologies."

(d) Librarian

Mr. Nicol was appointed Librarian.

A system is to be set up whereby he receives copies of all papers and reproduces for sale to members all that the Division Committee approve for publication. Once a year a complete list of all papers is to be circulated and if copies are not available, photostatic or reproduction copies may be furnished at the expense of the member desiring same. It was also voted that a copy of each paper be sent the National Chairman for his comments.

(e) Dues

The subject of raising the amount of dues was discussed and it was suggested an informal survey be made at the various chapters of the advisability of such a course.

CHAPTER 24 PLASTICS WEIGHT RESEARCH—PROJECT N-14

Since no report was received, it was voted to dispense with the subject for this session. Recommendations were made that further studies be made in this field.

Announcements

The Yearbook Committee regrets that announcements from other Chapters or Divisions were not available when this book went to press, but wishes to present the following announcements:

Wednesday, January 13, 1943—

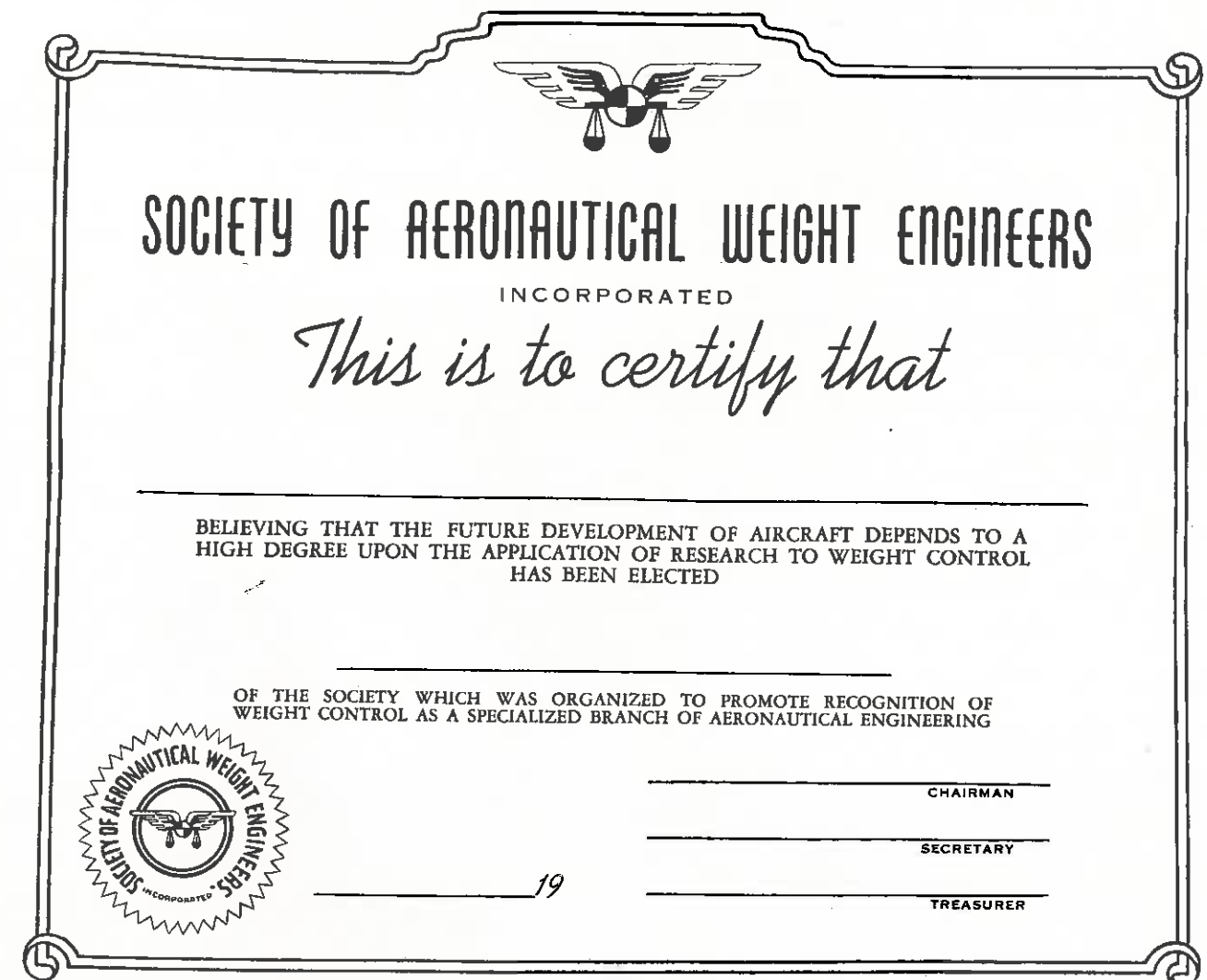
Sixth Dinner Meeting of the Dallas-Fort Worth Chapter, at Texas Hotel, Fort Worth, Texas, beginning at 7:30 P. M.

Friday, January 22, 1943—

First Dance of the Baltimore Chapter, at the Hotel Emerson, Baltimore, Maryland, starting at 9:00 P. M.

Friday, February 12, 1943—

Dinner Meeting of the Philadelphia Chapter, at the Engineers' Club, 1317 Spruce Street, Philadelphia, Penna., starting at 7:30 P. M.



THE UNSUNG HEROES

This is my last opportunity to convey this message to you. I have given the subject much thought, but, until now, have had little time to write about it.

Somewhere "out there" some American boys have become detached from their units, and are conducting guerrilla warfare. They are the unsung heroes of this global war. Right now, somewhere in a swampy jungle or arid desert, Our Boys, rationing their water by sips, and stretching out their pitiful food supplies by seizing a seagull that alights on some survivor's head, harass the enemy—and hope that help will reach them in time to help wipe out that enemy. Not to save *themselves*, but to save their way of life; to stamp out forever the terror and tyranny of the Nazi and Nipponese hordes. They need help in a hurry. Not *tomorrow*—tomorrow may be too late, because this little band of men with only a fistful of bullets and no water may not be able to hold out that long. More men, more guns, more planes, more tanks, more ships are needed in Shangri-La immediately, *today*, RIGHT NOW!

What is this all about? Well, it is just this little thought. Every moment, every effort, every molecule

of material (including food) that is wasted *here*, would be the answer to all the prayers of that handful of men somewhere *out there*. Any successful activity, industrial or military, requires careful planning. Production planning dictates a repetition of banging out a *given number of items within a given length of time*. And the boys at Shangri-La will be waiting with outstretched arms for ALL of those items. Remember, if we waste a second, drive a bad rivet, or spoil a piece of material, our boys (maybe someone you or I went to school with) may lose all the ground they struggled for and perhaps their lives, too. And don't forget this—they won that ground with far less food, water, and equipment than we have available to us.

So let's "man the pumps" and "pour on the coal." If that SO NECESSARY part must be out by Tuesday, let's get it out by *Monday!* Let's beat the schedule, because that is how the boys are able to surprise and beat the enemy.

DONALD R. ("Doc") WATSON

APPLICATION FOR MEMBERSHIP

SOCIETY OF AERONAUTICAL WEIGHT ENGINEERS, INC.

Office Record

Rec'd _____
Ack. _____
Elec. _____
Grade _____
Qual. _____
Trans. to _____ Grade _____

To the Society: _____

Date _____

I hereby apply for membership in the Society of Aeronautical Weight Engineers, Inc., in the grade of membership for which the Executive Committee finds me qualified.

I hereby apply for change from _____ grade to _____ grade of membership in the Society.

Type or print name _____

Name and address of company _____

Title, position or occupation _____ Name of Supervisor _____

Products or business of company _____

Address for Society mail _____

Born (exact date) _____ at _____

Of what country is applicant now a citizen? _____ If naturalized give date and place.

If resident in U.S.A. and not naturalized, applicant should state whether he has applied for or received first papers or intends to do so _____

Has applicant ever been a member or applied for membership in the Society? _____

Give names of technical organizations in which applicant has membership, and the grade of such membership _____

Title of contributions by applicant to engineering literature (titles and where presented) _____

Record of Educational Qualifications

SCHOOL	ADDRESS	DATES OF ATTENDANCE		SUBJECTS TAKEN
		FROM	TO	
DEGREE OF _____		FROM _____		DATE _____

List of References—The following are familiar with my qualifications:

Name _____ Address _____

1. _____
2. _____
3. _____

Professional

In space below supply complete record of past and present connection, particularly for the last five years. Describe duties of present position fully. If space is not sufficient, continue the record on reverse side of this sheet.

DATES	NAMES AND ADDRESSES OF COMPANIES	TITLE OR POSITION	SPECIFIC DETAILS AS TO NATURE OF WORK

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