

BIBLIOGRAPHY
OF
AERONAUTICS

1930

▼

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1932

INTRODUCTION

This Bibliography of Aeronautics for 1930 covers the aeronautical literature published from January 1 to December 31, 1930. The first Bibliography of Aeronautics was published by the Smithsonian Institution as volume 55 of the Smithsonian Miscellaneous Collections and covered the material published prior to June 30, 1909. Supplementary volumes of the Bibliography of Aeronautics for the subsequent years have been published by the National Advisory Committee for Aeronautics. The last preceding volume was for the calendar year 1929.

As in the previous volumes, citations of the publications of all nations are included in the languages in which these publications originally appeared. The arrangement is in dictionary form with author and subject entry and one alphabetical arrangement. Detail in the matter of subject reference has been omitted on account of the cost of presentation, but an attempt has been made to give sufficient cross reference for research in special lines.

JOSEPH S. AMES,

Chairman, National Advisory Committee for Aeronautics.

FEBRUARY 8, 1932.

ABBREVIATIONS

Aer. Eng. Suppl. The Aeroplane-----	The Aeroplane— . . . Aeronautical Engineering Supplement to The Aeroplane, London.
Aer. Res. Comm., Rep. Mem-----	Aeronautical Research Committee, Reports and Memoranda, London.
Aeron. Journ-----	Aeronautical Journal, London.
Aeronautics, Techn. Rep. Aer. Res. Comm.	Aeronautics. Technical Report of the Aeronautical Research Committee, London.
Amer. Mach-----	American Machinist, New York.
Amer. Gas. Eng. Journ-----	American Gas Engineering Journal, New York.
Ann. Soc. Mété. France-----	Annuaire, Société Météorologique de France, Paris.
Atti Assoc. Ital. Aerotecn-----	Atti dell' Associazione Italiana di Aerotecnica, Roma.
Aut. Eng-----	Automotive Engineering, New York.
Aut. Mot. Flugw-----	Automobil-Motorrad-Flugwesen, Berlin.
Automotive Ind-----	Automotive Industries, New York.
Aviat. Aer. Eng-----	Aviation and Aeronautical Engineering, New York.
Bull. Aero-Club Suisse-----	Bulletin, Aero Club Suisse, Berne.
Bull. Exper. Depart. Airplane Eng. Div.	The Bulletin of the Experimental Department, Airplane Engineering Division, U. S. A., Dayton, Ohio.
Bull. Soc. Enc. Ind. Nat-----	Bulletin de la Société d'Encouragement pour l'Industrie Nationale, Paris.
Deutsche Luftf. Zeitschr-----	Deutsche Luftfahrer Zeitschrift, Berlin.
Electr. Railw. Jour-----	Electric Railway Journal, New York.
Ind. Eng. Chem-----	Industrial and Engineering Chemistry, Washington, D. C.
Jahrb. 1929, Deutsch. Versuchsanstalt für Luftfahrt, E. V., Berlin-Adlershof.	Jahrbuch 1929 der Deutschen Versuchsanstalt für Luftfahrt, E. V., Berlin-Adlershof, München.
Journ. Amer. Soc. Mech. Eng-----	Journal of the American Society of Mechanical Engineers, New York.
Journ. Frankl. Inst-----	Journal of the Franklin Institute, Philadelphia.
Journ. Inst. Amer. Electr. Eng-----	Journal of the American Institute of Electrical Engineers, New York.
Journ. Mil. Serv. Inst-----	Journal of the Military Service Institution, Governors Island, New York.
Journ. Roy. Aer. Soc-----	Journal of the Royal Aeronautical Society, London.
Journ. Roy. Soc. Arts-----	Journal of the Royal Society of Arts, London.
Journ. Soc. Automotive Engineers-----	Journal of the Society of Automotive Engineers, New York.
Journ. United States Art-----	Journal of the United States Artillery, Fortress Monroe, Va.
Mech. Eng-----	Mechanical Engineering, New York.
Nat. Geog. Mag-----	National Geographic Magazine, Washington, D. C.
Pop. Mech-----	Popular Mechanics, Chicago.
Pop. Sci. Monthly-----	Popular Science Monthly, New York.
Proc. Amer. Inst. Electr. Eng-----	Proceedings of the American Society of Electrical Engineers, New York.
Pro. Phys.-Math. Soc. Japan-----	Proceedings of the Physico-Mathematical Society of Japan, Tokyo, Japan.

ABBREVIATIONS

Proc. U. S. Nav. Inst-----	Proceedings of the United States Naval Institute, Annapolis, Md.
Quart. Journ. Roy. Met. Soc-----	Quarterly Journal of the Royal Meteorological Society, London.
Rend. Istituto Sper. Aer-----	Rendiconto dell' Istituto Sperimentale Aeronautico, Roma.
Rend. Tecn. Dir. Sup. Genio Costr. Aeron.	Commissariato dell' Aeronautica. Intendenza Generale. Rendiconti Tecnici della Direzione Superiore del Genio e delle Costruzioni Aeronautiche. Roma.
Rév. Gén. Scien-----	Révue Générale Scientifique, Paris.
Riv. Ital. Aeron-----	Rivista Italiana Aeronautica, Roma.
Sat. Even. Post-----	Saturday Evening Post, Philadelphia, Pa.
Scient. Amer-----	Scientific American, New York.
Techn. Berichte-----	Technische Berichte, Charlottenburg.
Zeitschr. Angew. Math. Mech-----	Zeitschrift für Angewandte Mathematik und Mechanik, Berlin.
Zeitschr. Flugt. Motorluftsch-----	Zeitschrift für Flugtechnik und Motorluftschifffahrt, München.
Zeitschr. Österr. Ing. Arch. Ver-----	Zeitschrift des Österreichischen Ingenieuer- und Architekten-Vereines, Wien.
Zeitschr. Ver. deutscher Ing-----	Zeitschrift des Vereines deutscher Ingenieure, Berlin.

BIBLIOGRAPHY OF AERONAUTICS

1930

By PAUL BROCKETT

BIBLIOGRAPHY OF AERONAUTICS, 1930

By PAUL BROCKETT

A

ABBOTT, IRA H. *See Jacobs, Eastman N., and Ira H. Abbott: Experiments with a model water tunnel.*

ABEL, ARTHUR H. Selling airport facilities at a profit. How the Oakland airport secures a net profit of \$2,000 a month.

Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 383-385, ill.

ABELL, C. F. Some recent progress in air-cooled aero-engine development.
Engineering, Vol. 130, No. 3373 (Sept. 5, 1930), London, pp. 308-311, ill.

ABRAHAM, MARTIN. Drähte, Litzen und Seile im Flugzeugbau.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 346-410, illus., diagrs., tabls.
Luftfahrtforschung, Band 7, Heft 2, 1930, München und Berlin, R. Oldenbourg, pp. 64, illus.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 45 (8. Nov. 1930), Berlin, pp. 1549-1550, illus.

ABRIAL, GEORGES. Un record de distance de Kronfeld.
L'Aéophile, 38e année, Nos. 5-6 (15 mars 1930), Paris, p. 73.

ACCELERATION. *See Glauert, H.* Some generalized curves for the accelerated motion of an aeroplane.

ACCESSORIES. *See Engines: Engines and accessories at the St. Louis show.*

— *See Neville, Leslie E.: Planes, engines and accessories at the Detroit show.*

ACCIDENTS. Air accidents.

Flight, No. 1141, Vol. 22, No. 45 (Nov. 7, 1930), London, pp. 1205-1206.

— The Air Ministry and accidents.

Flight, No. 1132, Vol. 22, No. 36 (Sept. 5, 1930), London, pp. 983-984.

— Aircraft accidents. Method of analysis. Report prepared by Committee on Aircraft Accidents.

National Advisory Committee for Aeronautics, Report No. 357, Aug. 29, 1930, Washington, U. S. Government Printing Office, 1930, pp. 17, illus.

— Statistical studies of aircraft accidents and forced landings.

Air Corps Information Circular, Vol. 7, No. 652 (June 28, 1930), Washington, United States Government Printing Office, 1930, pp. 29, diagrs., tabls.

— *See Beech, Walter H.: Let's tell the truth about airplane accidents.*

— *See Edgar, Pendleton: Regulating air commerce. Article VI—Accidents.*

— *See Grey, Charles Grey: On a psychological problem.*

— *See Grey, Charles Grey: On explaining accidents.*

— *See MacCracken, William P., jr.: The Department of Commerce position in accident publicity.*

ACCIDENTS. *See* Mayer, Herbert C.: Constructive accident publicity.

— *See* Murphy, Charles J. V.: Parachute.

— *See* R 101: R 101.

— *See* R 101: The loss of "H. M. Airship R 101."

— *See* R 101: Pensions and gratuities to "R 101" dependents.

— *See* R 101: The "R 101" disaster.

— *See* Rheinstrom, Charles A.: Newspapers and airplane accidents.

— *See* Wood, Eric: Differentiation between air accidents.

ACME CODE COMPANY. *See* Avico: Avico aviation code . . . compiled and arranged by Acme Code Company . . .

ACOUSTIC sounder. *See* Schreiber, Ernest: The Behm acoustic sounder for airplanes with reference to its accuracy.

ACOUSTICS. *See* Satô-Kôzi: Ensugata-rappa no onkyôgakutekino seisu ni tuite. Sono 2. (On the acoustical properties of conical horns. Part 2.)

ACROBATICS. *See* Gardner, M. B.: Aerial acrobatics—its place in military flying.

ADAMS, ALVIN P. Aviation finance.

The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, p. 50.

ADDISON-LUARD. *See* Calculator: Il calcolatore Addison-Luard.

ADEN. The air control of Aden.

The Aeroplane, Vol. 39, No. 21 (Nov. 19, 1930), London, pp. 1132-1134, illus.

ADER, CLÉMENT. L'inauguration du monument Ader.

L'Aérophile, 38e année, No. 10 (15 oct. 1930), Paris, pp. 299-300, ill.

ADVERTISING. Advertising aviation.

The Aeroplane, Vol. 39, No. 6 (Aug. 6, 1930), London, pp. 332-334.

AERIAL EXPERIMENT ASSOCIATION. *See* Seely, Lyman J.: Flying pioneers at Hammondsport, New York.

AÉRO-CLUB DE FRANCE. *See* Flandin, Pierre-Etienne: Le passé et l'avenir de l'Aéro-Club de France.

AERO CLUB D'ITALIA. Almanacco aeronautico. Anno 1-1930—
Milano, Bompiani, 1930.

AERO-CLUB VON DEUTSCHLAND. Mitteilungen des v. Tschudi-Archivs des Daniel Guggenheim Fund.

Berlin, Aero-Club von Deutschland, Nr. 10, 30. April 1930, pp. 12, III.

AERODROMES. Aerodromes and aerodrome equipment.

Air annual of the British Empire 1930, London, pp. 666-668.

— Making aerodromes.

Flight, No. 1130, Vol. 22, No. 34 (Aug. 22, 1930), London, p. 948.

— *See* Airports.

AERODYNAMICS. Aerodynamik und Statik in der Luftfahrtforschung.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 43 (25. Okt. 1930), Berlin, pp. 1491-1492, illus.

— *See* Argeanicoff, N. S.: Aérodynamique.—Sur la theorie de M. Witoszinsky.

— *See* Alippi, Carlo: Una verifica grafica della stabilità alle oscillazioni torsionali di un'ala monoplana a longherone unico.

- AERODYNAMICS. *See* Blenk, Hermann: Flugversuche zur Bestimmung der statischen Längsstabilität.
- *See* Blenk, Hermann: Göttinger Sechskomponentenmessungen an einem Modell des Flugzeugmusters Junkers A 35.
- *See* Blenk, Hermann: Über die Längsstabilität eines Flugzeuges mit losgelassenem Höhensteuer.
- *See* Budig, F.: Luftkraftmessungen an schräg angeblasenen Tragflügeln.
- *See* Dupont, P.: Application des tourbillons conjugués à l'aérodynamique du cercle et des profils.
- *See* Ferrari, C.: La determinazione sperimentale dei campi aerodinamici a due e a tre dimensioni per mezzo della loro analogia coi campi elettrici.
- *See* Fuchs, Richard, und Wilhelm Schmidt: Luftkräfte und Luftkraftmomente bei grossen Anstellwinkeln und ihre Abhängigkeit von der Tragwerksgestalt.
- *See* Fuselage: La résistance aérodynamique des fuselages avec moteurs en étoile.
- *See* Gabrielli, Giuseppe: Ancora sul peso ideale delle ali a sbalzo.
- *See* Giacomelli, R.: The aerodynamics of Leonardo da Vinci.
- *See* Glauert, H.: Aerodynamic theory.
- *See* Gorsky, W.: Una ricerca sull'effetto dell'interferenza della fusoliera sul piano fisso e sull'elevatore di un aeroplano.
- *See* Gorsky, W.: Ricerche aerodinamiche sugli impennaggi e sugli elevatori compensati e non compensati.
- *See* Hankin, E. Hanbury: Descending currents.
- *See* Hooker, S. G.: On the vortex system in the wake of a cylinder in a fluid.
- *See* Jourawtschenko, A.: Correzioni sperimentalì per la mutua interferenza della fusoliera e dell'impennaggio di coda.
- *See* Klemin, Alexander: Simplified aerodynamics.
- *See* Küssner, Georg: Optisch-photographische Formänderungsmessungen an Luftfahrzeugen.
- *See* Liebers, Fritz: Resonanzschwingungen von Luftschauben.
- *See* Lock, C. N. H., and F. C. Johansen: Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.
- *See* MacColl, J. W.: Modern aerodynamical research in Germany.
- *See* Minelli, Carlo: Sulle tensioni e sulle deformazioni di particolari strutture spaziali ad aste con due cerniere.
- *See* Munk, Max Michael: The principles of aerodynamics. Article 1. The creation of air forces.
- *See* Munk, Max Michael: The principles of aerodynamics. Article 2. Aerodynamic language.
- *See* Munk, Max Michael: The principles of aerodynamics. Article 3. Pressure.

- AERODYNAMICS.** *See* Munk, Max Michael: The principles of aerodynamics. Article 4. The square law.
- *See* Munk, Max Michael: The principles of aerodynamics. Article 5. Friction.
- *See* Munk, Max Michael: The resolution of wing air flow.
- *See* Pabst, Wilhelm: Aufzeichnen schneller Schwingungen nach dem Ritzverfahren.
- *See* Pabst, Wilhelm: Theorie des Landestosses von Seeflugzeugen.
- *See* Parkin, J. H., and G. J. Klein: The interference between the body and wings of aircraft.
- *See* Parsons, John F., and Jarvis A. Wallen: An investigation of the phenomenon of separation in the air flow around simple quadric cylinders.
- *See* Schiller, Ludwig: Hydro- und Aero-dynamik.
- *See* Scott-Hall, S.: Aerodynamic research flying.
- *See* Scriba, Ludwig: Elastische Nachwirkung elastische Hysteresis und Temperatur-Kompensation an Aneroiddosen.
- *See* Serragli, G.: Considerazioni sul momento laterale di un'elica autorotante di costruzione rigida.
- *See* Smith, R. H.: Aerodynamic theory and test of strut forms-II.
- *See* Tanner, T.: The forces on a yacht's sail.
- *See* Tomotika, Susumu: On the resistance experienced by a cylinder moving in a channel of finite breadth.
- *See* Toussaint, A.: La aviación actual. Estudio aerodinámico y ensayos de los aviones. La aviación actual y la seguridad.
- *See* Verduzio, G.-A. R.: Appunti sul calcolo dell'ala a sbalzo.
- *See* Zahm, Albert Francis: Theoretical aerodynamics.
- AEROLOGY.** Aérologie. Les trombes artificielles.
L'Aérophile, 38e année, Nos. 7-8 (15 avril 1930), Paris, pp. 108-109.
- *See* Eredia, Filippo: I nuovi metodi di sondaggi aerologici dell'alta atmosfera ai fini pratici della previsione del tempo.
- AERONAUTICAL CHAMBER OF COMMERCE.** *See* Warner, Edward P.: From export code to spinning rules. A review of the meetings of the airplane and engine sections in the Aeronautical Chamber of Commerce at the St. Louis arena.
- AERONAUTICAL RESEARCH COMMITTEE.** Reports and memoranda of the Aeronautical Research Committee published between 1st August, 1928, and 31st August, 1929.
Aer. Res. Comm. Rep. Mem. No. 1250, November 1929, London, 1930, pp. 7.
- AFRICA.** Les ailes africaines.
Afrique Française, T. 39, No. 3 (mars 1929), pp. 112-119.
- Air transport. The African airway.
Flight, No. 1138, Vol. 22, No. 42 (Oct. 17, 1930), London, pp. 1144-1145, map.
- L'aviation militaire de l'Afrique Orientale Française.
Revue des Forces Aériennes, No. 17, dec. 1930, Paris, pp. 1444-1448, ill., map.
- The light aeroplane and the flying clubs.
Aeroplane, Vol. 38, No. 10 (March 5, 1930), London, pp. 395-396, illus.

- AFRICA.** Over unknown Africa.
Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 267-268, ill.
- See Bailey, Lady: African air communications.
- See Cairo: Cairo to the Cape airway.
- See Logan, R. A.: Flying in Central Africa.
- See Mittelholzer, Walter: *Über den Gletschern Afrikas*.
- AHLBORN, FR.** The Magnus effect in theory and in reality.
 National Advisory Committee for Aeronautics, Technical Memorandums No. 567, May 26, 1930, Washington, May 1930, pp. 40, ill.
- See Blenk, Hermann: Der Magnuseffekt in Theorie und Wirklichkeit. Bemerkungen zu dem gleichnamigen Aufsatz von Fr. Ahlborn in Heft 24 der ZFM 1929.
- AILERONS.** See Bradfield, F. B., and R. A. Fairthorne: Hinge moments of balanced and unbalanced ailerons on R. A. F. 14 wing, to large angles of incidence.
- See Heald, R. H., D. H. Strother, and B. H. Monish: Effect of variation of chord and span of ailerons on rolling and yawing moments at several angles of pitch.
- AIR annual.** See Great Britain: The air annual of the British Empire, 1930.
- AIR compressors.** See Capon, R. S., and G. V. Brooke: The application of dimensional relationships to air compressors, with special reference to the variation of performance with inlet conditions.
- AIR cooled engines.** See Foord, F. A.: Air-cooled aero engines.
- See Green, F. M.: The resistance of air-cooled engines.
- AIR estimates.** See Great Britain: On the air estimates.
- AIR motion.** See Banerji, Sudhansu Kumar: The effect of Indian mountain ranges on air motion.
- AIR power.** See Great Britain: The House of Lords on air power.
- See Trenchard: Lord Trenchard on air power.
- AIR routes.** Civil aviation reference. Air transport routes.
Air annual of the British Empire 1930, London, pp. 157-164, tabs., map.
- AIR SURVEY COMPANY.** Air Survey Company, Ltd.
Air annual of the British Empire 1930, London, pp. 209-214, ill.
- AIR transport.** See Great Britain: The Air Transport bill.
- AIRCRAFT INVESTMENT CORPORATION.** The Aircraft Investment Corporation.
Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 248-250.
- AIRCRAFT OPERATING COMPANY.** The Aircraft Operating Company, Ltd.
Air annual of the British Empire 1930, London, pp. 205-208, ill.
- AIRFOILS.** See Fradiss, Jean, and Armand Thieblot: Construction of airfoil sections and wing generation.
- See Jacobs, Eastman N., John Stack, and Robert M. Pinkerton: Airfoil pressure distribution investigation in the variable density wind tunnel.
- See Jacobs, Eastman N., and Raymond F. Anderson: Large-scale aerodynamic characteristics of airfoils as tested in the variable density wind tunnel.

- AIRFOILS. *See Jacobs, Eastman N., and Robert M. Pinkerton: Pressure distribution over a symmetrical airfoil section with trailing edge flap.*
- *See Millikan, Clark B.: An extended theory of thin airfoils and its application to the biplane problem.*
- *See Wood, Donald H.: Tests of large airfoils in the propeller research tunnel, including two with corrugated surfaces.*
- *See Knight, Montgomery, and Thomas A. Harris: Experimental determination of jet boundary corrections for airfoil tests in four open wind tunnel jets of different shapes.*

AIRMINDEDNESS. *See Grey, Charles Grey: On the growth of airmindedness.*

AIRPLANES. *See Burney, C. Dennistoun, and F. Handley Page: Airships versus aeroplanes.*

AIRPORTS. Airport conference at Buffalo, N. Y. Delegates active—Committees' reports point to progress.

Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 813-815.

— Building the St. Hubert airport near Montreal, Quebec.
American City, Vol. 42, No. 2 (Feb. 1930), New York, pp. 119-121, illus.

— *Gli aeroporti del futuro.*
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 163-164, ill.

— Great Britain: Britain's municipal airports.

— Municipal airports. A step in the right direction.
Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, p. 807.

— National airport committee formed.
Airway Age, Vol. 11, No. 4 (April 1930), New York, p. 521.

— *See Abel, Arthur H.: Selling airport facilities at a profit. How the Oakland airport secures a net profit of \$2,000 a month.*

— *See Aerodromes: Making aerodromes.*

— *See Angell, Norman H.: Two-course asphalt surfacing for airport runways.*

— *See Angle, Jay Warren, and Brower Vance York: Airports in Latin America.*

— *See Arthur, William E.: Prepared runways on modern airports.*

— *See Austin, Wilbert John: Ports for the ships of the air.*

— *See Australia: Civil aviation in Australia and New Guinea. Review of progress, 1929. Aerodromes and emergency landing fields.*

— *See Auxerre: Projet de création d'un Aérodrome à Auxerre.*

— *See Baldwin, Charles Hobart: A proposed airport for San Francisco.*

— *See Berch van Heemstede, I. L. van den: Een gemeenschappelijke luchthaven voor 's-Gravenhage en Rotterdam.*

— *See Bigelow, Anson A.: Airport operating income.*

— *See Bigelow, Anson A., and N. L. H. Smith: Airports in 1929 and 1930.*

— *See Bourget: L'avenir du port aérien du Bourget.*

— *See Burbank, California: The United Airport at Burbank, Calif.*

— *See Camden, New Jersey: Central airport, Camden, N. J.*

— *See Cooper, Mabel C.: The airlines and airports of Mexico.*

- AIRPORTS. *See* Cotton, Harry E.: Strength and arrangement of pipe for airport drainage systems.
- *See* Dellaert, U. F. M.: De Gemeenteluchthaven van Amsterdam.
- *See* De Silva, Woodruff: The municipal airport of Los Angeles.
- *See* Detroit: Air terminals.
- *See* Fixel, Rowland W.: The regulation of airports.
- *See* Gale, Charles H.: America's airport problem to date.
- *See* Gale, Charles H.: The second national airport conference.
- *See* Gliders: Gliders aid the airport.
- *See* Hayes, Robert: Airports of the future.
- *See* Haynes, H. Gene: Building the Indianapolis airport.
- *See* Holme, John C., jr.: Surveying the airport problem in New York city.
- *See* Hubbard, Henry Vincent, Miller McClintock, Frank B. Williams, Paul Mahoney and Howard K. Menhinick: Airports, their location, administration and legal basis.
- *See* India: Register of aerodromes and landing grounds in India. Available for use by civil aircraft, 1929.
- *See* Insinna, Salvatore: Un problema dei moderni aeroporti.
- *See* Kramer, George N.: The Grand Central airport. Glendale, Cal., port opens \$150,000 passenger station and control tower. Design and construction noteworthy.
- *See* Kramer, George N.: Hexagonal hangar feature of Western Air Express terminal.
- *See* Lance, O. B.: Tennessee's sky harbor.
- *See* Lehigh: The Lehigh airports competition.
- *See* Lehigh Portland Cement Co.: American airport designs . . .
- *See* Lenton, R. E.: The small-town airport.
- *See* Lighting: New floodlight for small airports.
- *See* Logan, George B.: Liability of airport proprietors.
- *See* McClintock, Hubbard M., and F. B. Williams: Airports. Their location, administration, and legal basis.
- *See* McReynolds, Charles F.: The Lehigh airports competition.
- *See* McReynolds, Charles F.: Lighting Los Angeles airports.
- *See* Mason, Graham S.: A dinner that won an airport.
- *See* Mexico City: Mexico City builds port.
- *See* Mounier, P. J. J.: De Lehigh luchthaven-prijsvraag.
- *See* Murray, R. Stuart: Club interest might aid. An airport plan proposed.
- *See* Nevill, John T.: The new Detroit city airport.
- *See* Nolen, John: Airports and airways and their relation to city and regional planning.
- *See* Pakas, Manfred A.: The real estate aspects of airports.

- AIRPORTS. *See* Petersen, William J.: Iowa City municipal airport.
- *See* Peterson, F. S.: Careful planning pays in airport lighting.
- *See* Philadelphia: Philadelphia, aeronautical center of the East . . . Survey by Airport consultants, Inc.
- *See* Portland Cement Association: Air terminals.
- *See* Ring, Laurence Elmer: Airports in Canada and Newfoundland.
- *See* Ring, Laurence Elmer: Airports in Italy.
- *See* Rolfe, John: Draining Sky Harbor.
- *See* Rosengarten, W. E.: Runways of material at hand. Utilization of local materials for paving at airports.
- *See* Rotterdam: De Rotterdamsche luchthaven in den zomer van 1930.
- *See* Short, C. W. jr.: The Tulsa, Okla., municipal airport.
- *See* Sipp, Edward A.: Airport and aircraft lighting.
- *See* Sipp, Edward A.: Buy safe airport illumination.
- *See* Springfield, Mass.: The dedication at Springfield, Mass. Race program and air tour celebrate opening Bowles airport.
- *See* Svehla, George: A survey of civil aviation in the southwest. Part 2: Airports, Manufactures, etc.
- *See* Thompson, H. H.: A proposed new design of airport. System developed to control traffic by light.
- *See* Voitoux, G.: Les îles flottantes.
- *See* Washington, D. C.: "New airport at National Capital."
- *See* Washington, D. C.: The new Washington airport is attractive and alive.
- *See* West, Richard Lincoln: Making an airport pay.
- *See* Wheeler, George F.: Marine airport for yacht clubs.
- *See* Wines, James P.: The Curtiss-Chicago airport.
- *See* Wynne, John S.: Let's go to the airport.
- *See* Youngsteadt, R. W.: Lovell field Chattanooga's new municipal airport.
- *See* Zurigo-Dübendorf: Il nuovo aeroporto di Zurigo-Dübendorf.

AIRSCAPES. Transatlantic "Airscape": A seaplane's shadow in a rain circle.
Flying high above a belt of fog.

Illustrated London News, Vol. 177 (July 12, 1930), London, pp. 110-111, ill.

AIRSCREWS. *See* Propellers.

AIRSHIPS. About airships.

London, E. F. Spanner, pp. 206, ill.

- Il nuovo dirigibile semirigido della marina francese.
Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 163-167, ill.
- *See* Albertini, Gianni: Alla ricerca dei naufraghi dell' "Italia," mille chilometri sulla banchisa.
- *See* Amick, Hugh: Nikita's idea lives on.
- *See* Atwood, J. Paul: Dirigibles and air traffic safety.

- AIRSHIPS. *See* Beelitz, D.: Vergleich von Triebgas und Benzinbetrieb beim Luftschiff.
- *See* Beelitz, Helmut: Der gegenwärtige Stand der Heliumgewinnung und Heliumforschung.
- *See* Beier-Lindhardt, Erich: Das deutsche Luftschiff, seine geschichte, einrichtungen und fahrten, mit bildern und skizzen . . .
- *See* Bleistein, W.: Metallluftschiffe.
- *See* Boffito, Giuseppe: L'aeronautica nelle citta italiane. Torino V.— L'aerostato-battello-vapore di Vincenzo Lanzillo (1875).
- *See* Brigham, R. B.: R 100.
- *See* Burney, C. Dennistoun, and F. Handley Page: Airships versus aeroplanes.
- *See* Carter, B. C., and N. S. Muir: Torsional vibration of crankshafts Beardmore "Tornado" airship engine investigations.
- *See* Dollfus, Charles: Les traversées du "R 100."
- *See* Evans, F. G.: The cross-section of the semi-rigid airship.
- *See* Fritzsche, Carl B.: The economics of the metalclad airship.
- *See* Fritzsche, Carl B.: The metalclad airship.
- *See* Fuld, E.: Luchtschip en of vliegtuig?
- *See* Goodyear-Zeppelin: Goodyear-Zeppelin luchtschiploods te Akron.
- *See* Graf Zeppelin.
- *See* Great Britain: A comparison of England's two new aircraft. A description of the recently launched "R 100" and a comparison with "R 101."
- *See* Grey, Charles Grey: On a psychological problem.
- *See* H.: De nieuwe Amerikaansche marineluchtschepen.
- *See* Hangars: Le grand hangar à dirigeables d'Akron.
- *See* Hegener, Henri: De inherente onstabiliteit van luchtschepen.
- *See* Ingalls, David S.: The modern dirigible is practically invulnerable when operated at sea.
- *See* Kamm, Wunibald, und Albert Stieglitz: Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."
- *See* Karman, Theodor von: Calculations of pressure distribution on airship hulls.
- *See* Kessler: Beitrag zum Problem der Geschwindigkeitssteigerung der Luftschiffe.
- *See* Lacmann, Otto, und Walter Block: Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffs LZ127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL.
- *See* Lyon, Hilda M.: The strength of transverse frames of rigid airships.
- *See* Marsh, William Lockwood: The evolution of rigid airship design.
- *See* Masterman, E. A. D.: The evolution of mooring and handling devices for airships.

12 NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

- AIRSHIPS. *See* Mounier, P. J. J.: *Luchtlijnen met bestuurbare ballons. Revolutionaire constructies.*
- *See* Nobile, Umberto: *Im Luftschiff zum Nordpol.*
- *See* Pochhammer, B.: *Das Prallschiff als schnelles Postluftschiff.*
- *See* Quinn, J. J.: *Airships to fly Pacific.*
- *See* Remondière: *Les dirigeables français.*
- *See* Renfro, Robert B.: *The future of the airship. An interview with P. W. Litchfield.*
- *See* Richmond, V. C.: *The development of rigid-airship construction.*
- *See* R 100: *Das englische Luftschiff R 100.*
- *See* R 100: *The fastest airship in the world?*
- *See* R 100: *R 100.*
- *See* R 100: *R 100 flies to Montreal.*
- *See* R 100: *Return of R 100.*
- *See* R 100: *R 100 starts for Montreal.*
- *See* R 101: *Le drame du R 101.*
- *See* R 101: *How "R 101" will "dock" in Egypt and India: Airship mooring.*
- *See* R 101: *Konstruktive Einzelheiten des englischen Luftschiffes R 101.*
- *See* R 101: *Modifications au rigide R 101.*
- *See* R 101: *R 101 has two reversible engines.*
- *See* Schetter, Clyde, and Frank Petrie: *Training pilots for airships.*
- *See* Schwegler, H.: *Die Luftschiffwerft der amerikanischen Zeppelin in Akron, Ohio.*
- *See* Simmons, L. F. G.: *Experiments relating to the flow in the boundary layer of an airship model.*
- *See* Spit, Gijsbert: *Luchtvaart-problemen.*
- *See* Teed, P. L.: *British airship policy.*
- *See* Thiemann, A. E.: *Kraftanlage und Geschwindigkeit von Luftschiffen.*
- *See* Thompson, F. L.: *Full-scale, characteristics of the U. S. Los Angeles.*
- *See* Transatlantic: *Les traversées transatlantiques en dirigeable.*
- *See* Trumpf: *Mit dem "Trumpf"—Luftschiff über Berlin.*
- *See* Upson, R. H.: *The metal clad airship.*
- *See* Wiesinger: *Das Luftschiff Bauart Wiesinger.*
- *See* Zeppelins.
- *See* ZMC2: *Le dirigeable métallique ZMC2 (Amérique).*

AIRSICKNESS. *See* Everling, E.: *Die "Luftkrankheit."*

AIRWAYS. *The progress of Imperial Airways, 1929-1930.*

Air annual of the British Empire 1930, London, pp. 151-156, ill.

AIRWAYS. *See* Jones, Ernest: How long is an airway.

— *See* United States Department of Commerce. Aeronautics Branch: The federal airways system. December 1, 1930.

— *See* United States Department of Commerce: Airways bulletins issued by the United States Department of Commerce. Aeronautics Branch.

AIRWORTHINESS. *See* Grey, Charles Grey: On airworthiness.

— *See* Howard, H. B.: Certificates of airworthiness.

AKRON. *See* Goodyear-Zeppelin: Goodyear-Zeppelin luchtschiploods te Akron.

— *See* Hangars: Le grand hangar à dirigeables d'Akron.

— *See* Watson, Wilbur J.: Design factors of airship dock at Akron.

ALASKA. *See* Deckard, H. C.: Plane operation in Alaskan area is largely successful despite many handicaps.

— *See* Gannett, William Howard: Adventuring by air over Alaska's wonderland.

— *See* Hoyt, Kendall K.: Alaskan airways make rapid progress.

— *See* Whitehead, R. F.: Problems of aerial photography in Alaska.

ALASKAN AERIAL SURVEY. *See* United States Congress. House Committee on Naval Affairs: Award of the distinguished-flying cross to members of the Alaskan aerial Survey expedition . . . Report. To accompany H. R. 3801.

ALBENGA, GIUSEPPE. A proposito di qualche formola approssimata per la trave inflessa e sollecitata assialmente.

L'Aerotechnica, Vol. 10, N. 1-2 (Gen.-Feb. 1930), (Anno VIII), Roma, pp. 5-11.

ALBERTINI, GIANNI. Alla ricerca dei naufraghi dell' "Italia", mille chilometri sulla banchisa.

Milano, Libreria d'Italia, [1929], pp. 165, ill., maps.

ALCLAD. *See* Smith, George Michael: Strength in shear of thin curved sheets of Alclad.

ALDRICH, ELIZABETH W. *See* Bridgeman, Oscar C., and Elizabeth W. Aldrich: Effect of weathering on the vapor-locking tendency of gasolines.

ALEXANDER, J. DON. The significance of gliders.

Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 55, 219, ill.

ALFRÉD DR. HILLE. A repülési időszolgálat szervezete.

Aviatika, 6. évt., 4. szám (1930 április), Budapest, pp. 96-98, map.

ALI, BARKAT. The wind at Arag and its structure.

Memoirs of the Indian Meteorological Department, Vol. 25, Part VI, Calcutta 1930, pp. 195-251, tabls., diagrs.

ALIPPI, CARLO. A graphical verification of stability to torsional oscillations.

L'Aerotechnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, p. 975.

— Una verifica grafica della stabilità alle oscillazioni torsionali di un'ala monoplana a longherone unico.

L'Aerotechnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), (Anno IX), Roma, pp. 821-830, ill.

ALLARD, JOHN S. What American aviation offers the foreign buyer.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 77, 266, port.

ALLEN, C. B. Sky road to Cuba.

The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, pp. 27, 56, ill.

14 NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

- ALLEN, EDMUND T. Safety in aerial navigation through radio communication.
Mech. Eng., Vol. 52, No. 9 (Sept. 1930), New York, pp. 847-848.
- ALLOYS. New low expansion aluminum piston alloy.
U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, p. 50.
- See Archbutt, S. L., and J. W. Jenkin: Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition.
- See Black, Archibald: A new high strength aluminum alloy.
- See Day, Charles Healy: Work for safety—research on ultra-light alloys.
- See Fradiss, Jean: Thick airfoil sections with smaller center of pressure travel—superchargers—magnesium alloys.
- See Grard, Charles Albert Marie, and Jean Cournot: Métaux et alliages.
- See Johnson, L. W.: The inspection of metals and their alloys.
- See Meissner, Karl Leo: Neue Untersuchungen über den Einfluss von Fe, Si und Mn auf die Duralumin Veredelung.
- See Newell, Joseph S.: The strength of aluminum alloy sheets.
- See Stoughton, Bradley: Metals used in aircraft construction.
- ALSTON, R. P. Maximum lift coefficient of "Starling" with Clark YH wings.
Aer. Res. Comm., Rep. Mem., No. 1295, (Ae. 444), December 1929, London, 1930, pp. 2, ill., diagr.
- Stalled flight tests on a Bristol fighter fitted with auto control slots and interceptors.
Aer. Res. Comm., Rep. Mem., No. 1338 (Ae. 469), June 1930, London, 1931, pp. 3, ill.
- See Jones, B. Melville, C. E. Maitland, and R. P. Alston: Records of the lateral motions of a stalled Bristol fighter aeroplane with slots upon the upper wing tips. Experiments made in the Cambridge University Air Squadron.
- ALTIMETERS. See Di Maio, Raffaello: Altimetro barotermico D. M.
- See Kaupa, E.: De acoustische hoogtemeter.
- ALTITUDE. Determinations exactes des altitudes.
Aéronautica, Vol. 4, No. 1 (Jan. 1930), Arnhem, pp. 10-11.
- See Fair, Ernest W.: High altitude.
- See Gymnich, Alfred: Die Flughöhe als Faktor der Flugsicherheit.
- See Kaiser: Physiologische Probleme des Höhenfluges.
- See Kaiser, Wilhelm, und Wilhelm Tramm: Über die Atmung des Höhenfliegers. Von Wilh. Kaiser.—Die Versuchsanordnungen für Gaswechselversuche. Von Wilh. Tramm.
- See Naszogen-Höhenatmer: Der Naszogen-Höhenatmer. Ein neuartiges Atmungsgerät für den Höhenflug.
- See Sergievsky, Boris: Speed and altitude records made with a load-carrying seaplane.
- See Smith, Karl F.: Engine performances at altitude.
- See Spencer, K. T.: On the effect of altitude upon the distance required for an aircraft to take off and climb 20 metres, giving generalised curves of weight reduction necessary if a given aircraft is to comply with the requirements of A. P. 1208 under adverse atmospheric conditions.

ALTITUDE. *See* Stewart: High altitude equipment of aircraft.

ALUMINUM. Aluminum in aircraft.

Pittsburgh, Pa., Aluminum Company of America, 1930, pp. 159, ill.

— See Alloys: New low expansion aluminum piston alloy.

— See Ato, S.: On the analysis of the aluminum group.

— See Black, Archibald: A new high strength aluminum alloy.

— See Dunlap, W. M.: Aluminum welding in aircraft design.

— See Hobbs, Douglas B.: Aluminum forgings and castings applied to aircraft.

— See Newell, Joseph S.: The strength of aluminum alloy sheets.

AMENT, WILLIAM SHEFFIELD. *See* Hunt, Rockwell Dennis, and William Sheffield Ament: Oxcart to airplane.

AMERICA. Concentración gigantesca de líneas aéreas americanas.

Aérea, Año 8, Núm. 86 (Sept.-Oct. 1930), Madrid, pp. 25-26, map.

— See Sanz, Angel B.: Las comunicaciones aéreas entre España y América.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Progress in aeronautics. Contributed by aeronautical division.

Mechanical Engineering, Vol. 52, No. 1 (Jan. 1930), New York, pp. 3-13, illus.

AMES, JOSEPH SWEETMAN. Glancing back at 1929. Scientific progress.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., p. 63.

AMET. L'Aéronautique à la bataille du Jutland.

Revue des Forces Aériennes, No. 6, (jan. 1930), Paris, pp. 65-71, ill.

AMICK, HUGH. Clarence, Clifford, and Herbert 'n Me.

U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 36-38, ill.

— Nikita's idea lives on.

U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 51-52, ill.

— There's a dude ranch just off Broadway.

U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 48-49.

— They know their dihedral, and are beginning to want to know the moral character of the pilot.

U. S. Air Services, Vol. 15, No. 3 (March 1930), Washington, pp. 26-27, 44.

— The upper lip is rigid.

U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 39-40, ill.

— Whence come new facts the world awaits? From the shed-shops of America, says William B. Stout.

U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, p. 43.

AMIÉL, J. Recherches expérimentales sur l'oxydation du benzène.

Servicio Technique de l'Aéronautique, Bulletin technique No. 64, Paris.

AMSTERDAM. *See* Dellaert, U. F. M.: De Gemeenteluchthaven van Amsterdam.

AMSTUTZ, E. Calculations of tapered monoplane wings.

National Advisory Committee for Aeronautics, Technical Memorandums No. 578, Aug. 14, 1930, Washington, August 1930, pp. 20, ill., diagrs.

— Zur Berechnung von Spitzendigen Eindecker-Trafluegeln.

Schweizerische Bauzeitung, Vol. 95, No. 14 (Apr. 5, 1930), Zurich, pp. 181-186, ill.

AMUNDSEN, ROALD ENGELBREGT GRAVNING. *See* Wisting, Oscar: 16 år med Roald Amundsen; fra pol til pol.

16 NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

ANDANT, A. Spectres d'absorption ultraviolets de quelques carbures d'hydrogènes.

Service Technique de l'Aéronautique, Bulletin technique No. 64, Paris.

ANDERSON, NORMAN. A complete aviation ground course.

St. Louis, The Metalcraft Corporation, 1930, pp. 45, illus.

Lyonsport Aero Club ground course.

ANDERSON, RAYMOND F. See Jacobs, Eastman N., and Raymond F. Anderson:

Large-scale aerodynamic characteristics of airfoils as tested in the variable density wind tunnel.

ANDERSON, S. H. The penetration of light through fog.

Aviation, Vol. 28, No. 19 (May 10, 1930), New York, pp. 930-936, illus., diagrs., tabls.

ANDOR, HALÁSZ. A Weiss Manfred repülögép- és motorgyár.

Aviatika, 6 évf., 4. szám (1930 április), Budapest, pp. 84-85, ill.

ANDRÉE. Andrée's body found.

Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, p. 979.

— The fate of Andrée.

The Geographical Journal, Vol. 76, No. 5 (Nov. 1930), London, pp. 428-429.

ANDRÉE, SALOMON AUGUST. Après la découverte de l'expédition polaire d'Andrée.

L'Aérophile, 38e année, No. 10 (15 oct. 1930), Paris, pp. 304-306.

— The discovery of Andrée's body in the Artic ice: The pioneer of polar aeronautics found after 33 years.

Illustrated London News, Vol. 177, No. 4767 (Aug. 30, 1930), London, p. 360, ill.

— Hallazgo de la expedicion Andrée.

Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 3-4, illus., maps.

— See Polesine, Jotti da Badia: La tragica avvenuta di Andrée.

— See Putnam, George Palmers: Andrée; the record of a tragic adventure.

— See Svenska Sällskapet för Anthropologi och Geografi: Andrée's story; the complete record of his polar flight, 1897, from the diaries and journals of S. A. Andrée, Nils Strindberg, and K. Fraenkel, found on White Island in the summer of 1930 and edited by the Swedish society for anthropology and geography; translated from the Swedish by Edward Adams-Ray.

— See Svenska Sällskapet für Anthropologi und Geografi: Dem pol entgegen; auf Grund der während Andrées polarexpedition 1897 geführten und 1930 auf Vitö gefundenen Tagebücher S. A. Andrées, N. Strindbergs und K. Fraenkels, herausgegeben von der Schwedischen Gesellschaft für Anthropologie und Geographie.

ANDRIANI, ORONZO. La lubrificazione scientifica e razionale dei motori di aviazione.

Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 292-296.

ANEMOMETER. See Pinkerton, Robert M.: Calibration and lag of a Friez type cup anemometer.

ANGELL, NORMAN H. Two-course asphalt surfacing for airport runways. Surface hardness under temperature changes controlled by mixed-in-place base course and premixed topping at Burbank, Calif.

Engineering News-Record, Vol. 105, No. 6 (Aug. 7, 1930), New York, pp. 215-217, ill.

ANGLE, GLENN D. Closer government regulations—work toward standardized installation details.

Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 532-533.

- ANGLE, JAY WARREN, and BROWER VANCE YORK.** Airports in Latin America. Washington, United States Department of Commerce, Bureau of Foreign and Domestic Commerce, Trade information bulletin, No. 696, pp. ii, 60.
- ANNÉE AÉRONAUTIQUE.** See Hirschauer, L., und Ch. Dollfus: *L'année aéronautique 1929-1930* 11e année.
- ANTARCTIC.** See Byrd, Richard Evelyn: Little America, aerial exploration in the Antarctic, the flight to the South Pole.
- See Maclean, John Kennedy, and Chelsea Curtis Fraser: Heroes of the farthest North and farthest South.
- ANTENNA.** See Jenkins, C. Francis: The aft-flying antenna.
- ANTIMONY.** See Gough, H. J., and H. L. Cox: The behaviour of a single crystal of antimony subjected to alternating torsional stresses.
- ARBAN, FRANCESCO.** Documenti sopre le ascensioni aerostatiche eseguite da Francesco Arban aeronauta di Lione, raccolti, ordinati e notati da Jotti da Badia Polesine. Milano, tip. G. Modiano, 1930, pp. xvii, 88 con otto tavole.
- ARCHBUTT, S. L., and J. W. JENKIN.** Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition—(continued). *Aer. Res. Comm., Rep. Mem., No. 1287 (M. 67)*, February 1929, London, 1930, pp. 16, illus. tabs.
- ARCHBUTT, S. L.** See Tapsell, H. J., S. L. Archbutt, and J. W. Jenkin: Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.
- ARCTIC.** See Albertini, Gianni: Alla ricerca dei naufragli dell' "Italia," mille chilometri sulla banchisa.
- See Běhounek, Franz: Sieben wochen auf der eisscholle; der untergang der Nobile-expedition.
- See Great Britain: The British Arctic air route expedition.
- See Maclean, John Kennedy, and Chelsea Curtis Fraser: Heroes of the farthest North and farthest South.
- See Montagnes, James: Radio communication in the sub-Arctic.
- See Nobile, Umberto: L' "Italia" al Polo nord.
- See North Pole.
- See Polar exploration.
- ARENS.** The Arens control. Flight, No. 1130, Vol. 22, No. 34 (Aug. 22, 1930), London, p. 950.
- De Arens overbrenging. Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 366-367, ill.
- ARGEANICOFF, N. S.** Aerodynamique.—Sur la théorie de M. Witoszinsky. C. R. Acad. Sci., T. 190, No. 12 (24 mars 1930), Paris, pp. 727-729, ill.
- ARGENTINA.** See Kirschner, A.: Die Weltluftmächte. 10. Kapitel. Argentinien als Luftmacht.
- ARMENGAUD.** L'aviation et la conduite de la manœuvre et de la bataille. Revue des Forces Aériennes, No. 8, mars 1930, Paris, pp. 261-300, ill.

ARMENGAUD. Aviation et manoeuvre d'aile et de dislocation.

Revue des Forces Aériennes, No. 14 sept. 1930, Paris, pp. 1001-1046, ills., maps.

— La manœuvre d'aile de la Somme (fin septembre 1914).

Revue des Forces Aériennes, No. 17, dec. 1930, Paris, pp. 1404-1443, maps.

ARMSTRONG. On the Armstrong Whitworth and Armstrong Siddeley firms.

The Aeroplane, Vol. 38, No. 26 (June 25, 1930), London, pp. 1209-1253, ill.

— See Fischetti, Ugo: Le isole Galleggianti.

— See Hanson, Earl: Armstrong seadrome project progresses. Plans complete for installing first drome within a year.

ARMSTRONG, A. H. See Steinmetz, Charles P.: America's first glider club.

ARMSTRONG, EDUARD. Het trans-Atlantisch luchtverkeer.

Het Vliegveld, 14 de Jaarg., No. 1 (Jan. 1931), Amsterdam, pp. 24-25, ill.

ARMSTRONG, E. R. Seadrome ocean airways. Report covering the development program.

Wilmington, Delaware, Founders Syndicate of Armstrong Seadrome Airways, 1930, pp. 39, ills., diagrs., tabs., maps.

ARMSTRONG-SIDDELEY. Completing the family. Some recent additions to the Armstrong-Siddeley range of engines.

Flight, No. 1141, Vol. 22, No. 45 (Nov. 7, 1930), London, pp. 1211-1213, ills., diagr.

ARMSTRONG-WHITWORTH. Aircraft. Sir W. G. Armstrong Whitworth Aircraft Ltd.

Air annual of the British Empire 1930, London, pp. 418-430, ill.

— Test of Armstrong-Whitworth steel spars under combined axial and transverse loading.

Air Corps Information Circular, Vol. 7, No. 656 (Dec. 1, 1930), Washington, United States Government Printing Office, 1930, pp. 11, ills., diagrs., tabs.

Air Corps Technical Report No. 3296.

ARMY-NAVY. Sixth A-N standards conference.

Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 809-812.

ARNESEN, ODD. The Polar adventure; the "Italia" tragedy seen at close quarters.

London, V. Gollancz, Ltd., 1929, pp. 158, ill.

ARNSTEIN, KARL. What we need now is less invention and more application of basic principles.

U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 31-35, ill.

ARTHUR, WILLIAM E. Prepared runways on modern airports.

Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 98-100, 166 ill.

ARTIFICIAL horizon. See Whitaker, O. B.: The "Artificial Horizon" assists pilots flying blind.

ARTRAN, A. P. Combining primary and secondary training gliders.

Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 51, 148, ill.

ARUNDEL. See Hotine, M.: Professional papers of the air survey committee. No. 6 Extensions of the "Arundel" Method.

ASCHENBORN, W. Die Frage des Orters.

Luftschau, 3 Jahrg., Nr. 21 (10. Nov. 1930), Berlin, p. 165.

ASHDOWN. The Ashdown Rotoscope.

Air annual of the British Empire 1930, London, pp. 401-405, ill.

Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, p. 1472, ill.

ASHWELL-COKE, J. R. Gliding. The Rhön competitions.

Flight, No. 1132, Vol. 22, No. 36 (Sept. 5, 1930), London, pp. 997-1000, ills.

ASIA. *See* Kennedy, Craig: Asiatic aviation.

ASPECT ratio. *See* Stanton, T. E.: Tests under conditions of infinite aspect ratio of 4 aerofoils in a high speed wind channel.

ASSOCIATION TECHNIQUE MARITIME ET AÉRONAUTIQUE. Bulletin de l'Association Technique Maritime et Aéronautique. No. 33, Session de 1929. Paris, Chaix.

ASTRONAUTIQUE. *See* Esnault-Pelterie, Robert: L'astronautique.

ATKIN, E. H. In the drawing office. A drawing office problem.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, pp. 972e-972f, 61-62, illus.

ATLANTIC. Atlantic Airways, Ltd.

Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1177.

— Commercial Atlantic flying.

Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, pp. 963-964.

— Le courrier aérien France-Amérique du sud.

L'Illustration, 88e année, No. 4553 (7 juin 1930), Paris, p. 238, ill.

— Determination of the elastic axis and natural periods of vibration of the Atlantic C-2A monoplane wing.

Air Corps Information Circular, Vol. 7, No. 645 (March 1, 1930), Washington, United States Government Printing Office, 1930, pp. 10, illus., diagrs.

Air Corps Technical Report No. 3097.

— La première liaison postale aérienne à travers l'Atlantique Sud.

L'Aéronautique, 12me année, No. 133 (juin 1930), Paris, pp. 203-204, ill.

— La traversée du laté 28 et le problème de l'Atlantique Sud.

L'Aéronautique, 12me année, No. 133 (juin 1930), Paris, p. 202.

— *See* Armstrong, Eduard: Het trans-Atlantisch luchtverkeer.

— *See* Challe et Larre Borges: Raids dramatiques. Challe et Larre Borges traversent l'Atlantique sud.

— *See* Costes y Bellonte: Primer viaje en avion desde Europa al continente norte-americano.

— *See* Franck, P.: La traversée de l'Atlántique par Costes et Bellonte.

— *See* G., L.: Una nueva travesía del Atlántico.

— *See* Graf Zeppelin: Le périple atlantique du "Graf Zeppelin."

— *See* Grey, Charles Grey: On bridging the Atlantic.

— *See* Nayler, J. L.: Atlantic transport by air.

— *See* R 100: British airship "R 100" twice spans the Atlantic.

— *See* R 100: Viaje transatlántico del R 100.

— *See* Smith, C. E. Kingford: Kingford Smith's Atlantic flight.

— *See* Southern Cross: De "Southern Cross" over den Atlantischen Oceaan.

— *See* Voitoux, G.: La navigation aérienne en Atlantique norde.

— *See* Voitoux, G.: La navigation aérienne transatlantique.

ATMOSPHERE. *See* Barlow, E. W.: Some problems of modern meteorology, No. 2. The present position of theories of the circulation of the atmosphere.

— *See* Duclaux, F. Baynard: Electricité atmosphérique.—La conductibilité électrique de l'air à Paris.

— *See* Koppe, Heinrich: Von den Gefahren des Luftmeeres.

— *See* Roberts, O. F. T.: On radiative diffusion in the atmosphere.

- ATO, S. On the analysis of the aluminum group.
Scientific Papers of the Institute of Physical and Chemical Research, Vol. 14, No. 277 (Nov. 25, 1930), Tokyo, pp. 287-311, tabls.
- ATTAL, SALVATORE. I limiti della difesa aerea territoriale.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 43-74.
- La milizia volontaria e il tiro controaereo.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 34-48.
- ATWOOD, J. PAUL. Dirigibles and air traffic safety.
Journal American Insurance, Vol. 7, No. 11 (Nov. 1930), Chicago, pp. 23-25.
- AUGER, ANDRÉ. L'utilisation de l'onde courte à bord des aéronefs.
L'Aérophile, 38e année, Nos. 1-2 (1er-15 jan. 1930), Paris, pp. 3-7, ill.
- AUSTIN, ELAINE. See Shaw, Sir William Napier: Manual of meteorology.
Vol. III. The physical processes of weather.
- AUSTIN, WILBERT JOHN. Ports for the ships of the air.
National Aeronautic Magazine, Vol. 8, No. 12 (Dec. 1930), Washington, pp. 37, 40, ill.
- AUSTRALIA. Aerial survey of central Australia.
Flight, No. 1143, Vol. 22, No. 47 (Nov. 21, 1930), London, pp. 1257-1258, ill.
- Civil aviation in Australia and New Guinea. Review of progress, 1929.
Aerodromes and emergency landing fields.
Air annual of the British Empire 1930, pp. 125-133.
- The great Australian flights.
Aeroplane, Vol. 39, No. 17 (Oct. 22, 1930), London, pp. 913, 920, ill.
- Het luchtverkeer in Australië.
Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, pp. 322-324, map.
- A possible race to Australia.
The Aeroplane, Vol. 39, No. 11 (Sept. 10, 1930), London, pp. 594-596.
- The race to Australia.
Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1156, ill.
- Report together with Minutes of evidence and plan relating to the proposed development of the civil aerodrome at Mascot, New South Wales . . .
Canberra, H. J. Green, Government Printer, 1930, pp. xii, 67.
- Report together with Minutes of evidence relating to the proposed development of the civil aerodrome at Western Junction, Tasmania . . .
Canberra, H. J. Green, Government Printer, 1930, pp. vi, 32.
- AUSTRIA. See Reif, Hans: Die Versicherung im österreichischen Luftverkehr.
- AUTO control slot. See Lachmann, G.: Practical tests with the "auto control slot."
- AUTOGIRO. Un artículo inglés sobre el autogiro. Descripción del Cierva autogiro Mark III, traducido del núm. 1115 de "Flight," 9 mayo de 1930.
Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 11-12, ill.
- De autogiro.
Het Vliegveld, 14de Jaarg., No. 3 (Maart 1930), Amsterdam, pp. 89-91, ill.
- El autogiro La Cierva en los EE. UU. de N. A.
Iberica, Año 17, Núm. 858 (27 dic. 1930), Barcelona, p. 386.
- The Cierva "Autogiro" Mark III (British). Armstrong-Siddeley "Genet Major" engine.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 120, June 20, 1930, Washington, June 1930, pp. 6, ills.
- La Cierva viene a España a bordo de su autogiro.
Aerea, Año 8, Núm. 85 (Agosto 1930), Madrid, p. 28.
- See Caroll, Thomas: Relative flight safety of the autogiro.
- See Cierva, Juan de la: The autogiro.
- See Cierva, Juan de la: Uses and possibilities of the autogiro.

- AUTOGIRO.** *See Hawks, Frank M.: Flying the autogiro.*
- *See Larsen, Agnew E.: Development of the autogiro.*
- *See Le Page, W. L.: The autogyro analyzed.*
- *See Pitcairn, Harold F.: The autogiro: Its characteristics and accomplishments.*
- *See Ray, James G.: Flying an autogiro.*
- *See Renfro, Robert B.: Juan de la Cierva's windmill.*
- *See Rice, E. D.: The autogiro.*
- AUTOMATIC pilot.** *See Pilots: Pilota automático trifase.*
- AUTOMATIC steering.** *See Möller, W.: Die Entwicklung des Fernkompasses und seine Bedeutung für die automatische Steuerung.*
- AUTOROTATION.** *See Schrenk, Oskar: A possible method for preventing the autorotation of airplane wings.*
- AUXERRE.** *Projet de création d'un aérodrome à Auxerre.*
Yonne, Éditée par l'Aéro-Club de l'Yonne.
- AVIAN.** The long-range Avian. Full details of Kingsford-Smith's machine.
Gipsy II engine.
Flight, No. 1140, 1141, Vol. 22, No. 44, 45 (Oct. 31, Nov. 7, 1930), London, pp. 1183-1187, illus., diagrs., 1215-1217.
- AVIATION.** *See Fairey, C. R.: The growth of aviation.*
- AVICO.** Avico aviation code . . . compiled and arranged by Acme Code Company . . . to be used in conjunction with Acme commodity and phrase code or any other standard code.
New York, Aeronautical Chamber of Commerce, inc., 1930, pp. xviii, 450.
- AVIGATION.** *See Navigation.*
- *See Ramsey, Logan C.: Avigation in commercial aviation.*
- *See Yancey, Lewis A.: Avigation for amateurs.*
- AVRO.** A. V. Roe & Co., Ltd.
Air annual of the British Empire 1930, London, pp. 518-525, ill.
- The "Avro trainer" airplane (British). A training biplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 119, June 13, 1930, Washington, June 1930, pp. 10, ill.
- AXELSON AIRCRAFT ENGINE CO.** Instruction book for Axelson aircraft engine type B complete with parts list.
Los Angeles, California, Axelson Aircraft Engine Co., 1930.
- B**
- B., G.** Ai margini della storia. L'aeronautica nelle città italiane.
Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 421-423, port.
- B., H.** L'aviation marchande en Perse.
L'Aéronautique, (L'Aéronautique marchande, 9me année, Nos. 102-103), 12me année, No. 134, (Juil. 1930), Paris, pp. 275-278, ill., map., tabl.
- Paris-New York sans escale.
L'Aéronautique, 12me année, No. 137 (oct. 1930), Paris, pp. 355-358, ill.
- Vincennes 1930.
L'Aéronautique, 12me année, No. 134 (juil. 1930), Paris, p. 242, ill.

- B. M. W. *See* Reyneker, F. H.: Het nieuwe verkeersvliegtuig BMW. 20A.
- BACK, GOLDIE. *See* Schuman, Louis, and Goldie Back: Strength of rectangular flat plates under edge compression.
- BAGHDAD. *See* Knauss, Robert: Erster Lufthanse-Postflug nach Bagdad.
- *See* Potter, Leslie S.: Cairo-Baghdad air mail route.
- BAILEY, LADY. African air communications.
Illustrated London News, Suppl., Feb. 22, 1930, p. xxix, maps, port.
- BAKKER, G. E. De Curtiss-fabrieken.
Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 66-68, ill.
- BALBÁS, V. La guerra de tres dimensiones.
Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, pp. 9-12.
- BALBO, ITALO. "Da Roma a Odessa." La crociera d'Oriente nel libro di Italo Balbo.
Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 3-17, ill.
- BALDIT, ALBERT. Météorologie du relief terrestre, vents et nuages.
Paris, Gauthier-Villars et Cie., 1929
- BALDWIN, CHARLES HOBART. A proposed airport for San Francisco, drawings by Charles Hobart Baldwin, perspective by C. H. Baldwin and M. Chappey. San Francisco [1930], pp. 11, ill., maps.
- BALLEYGUIER, HENRI. Pour une "école pratique de navigation aérienne."
L'Aéronautique, 12me année, No. 136 (sept. 1930), Paris, p. 322.
- BALLIF, P. S. *See* Dryden, H. L., and P. S. Ballif: The characteristics of two-blade propeller fans.
- BALLOONS. Un nouveau ballon captif.
Revue des Forces Aériennes, No. 7, fev. 1930, Paris, pp. 210-218, ill., tabl.
- *See* Hay, James, jr.: America's first air journey.
- *See* Jouglard, P.: Note sur les Ballons captifs d'observation.
- *See* Leimkugel, Erich: Die Bedeutung der Sprungschichten für den Freiballon.
- *See* Leimkugel, Erich: Richtungs- und Standortsbestimmung im Freiballon durch Funkpeilung.
- *See* Neant: L'instruction d'observation donnée en salle aux élèves-observateurs en ballon captif.
- *See* Serra, de Rocca: Défense des ballons par mitrailleuses terrestres.
- BALTIC. The Baltic cruise. "Southamptons" in Scandinavia.
Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, p. 1035, ill.
- BANE, THURMAN H. *See* Holland, Maurice: Aviation's apostles . . . Thurman H. Bane.
- BANERJI, SUDHANSU KUMAR. The effect of Indian mountain ranges on air motion.
The Indian Journal of Physics, Vol. 5, Part 7 (Oct. 22, 1930), Calcutta, pp. 699-745.
- BARANOFF, A. von. Determination of the best cross section for a box beam subjected to bending stresses.
National Advisory Committee for Aeronautics, Technical Memorandums No. 577, Aug. 7, 1930, Washington, August 1930, pp. 9, illus., diagrs.
- BARBIERI, FORTUNATO. Navigazione aerea. Corso allievi piloti; anno 1929 (Compagnia naz. aeronautica; seroporto del Littorio, Roma).
Roma, A. Sampaolesi (lit.), 1929, pp. 134.

- BARING, MAURICE.** Flying corps headquarters, 1914-1918.
London, W. Heinemann, Ltd. [1930], pp. 313.
- BARKER, FOWLER W.** Statistical sources for market analysis.
Aviation, Vol. 28, No. 14 (April 5, 1930) New York, pp. 705-707.
- BARKER, SAMUEL.** Outside loops.
The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, p. 29, ports.
Portraits of James H. Doolittle and Alford J. Williams.
- BARLOW, E. W.** Some problems of modern meteorology, No. 2. The present position of theories of the circulation of the atmosphere.
Quarterly Journal of the Royal Meteorological Society, Vol. 57, No. 238 (Jan. 1931), London, pp. 3-12.
- BARNABY, RALPH STANTON.** Gliders and gliding. Design, principles, structural features and operations of gliders and soaring planes.
New York, The Ronald Press; London, Simkin Marshall, Ltd., 1930, pp. 170.
- BARNARD, C. D.** London, Malta, London.
Flight, No. 1128, Vol. 22, No. 32 (Aug. 8, 1930), London, p. 881, ill.
- BAROMETERS.** See Hendrickson, Henry Brenton: Thermometric lag of aircraft thermometers, thermographs, and barographs.
- See Scriba, Ludwig: Elastische Nachwirkung elastische Hysteresis und Temperatur-Kompensation an Aneroiddosen.
- BARONI, AUGUSTO.** A defense of the Nistri photocartograph.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, p. 978.
- In difesa del fotocartografo "Nistri."
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), (Anno IX), Roma, pp. 859-866, ill.
- BARRAU, RAYMOND.** Relage des moteurs d'aviation.
Paris, Dunod, 1930, pp. 179, ill., diagrs.
- BARROWS, HENRY ROBBINS.** See Payne, Enoch George, and H. R. Barrows: The story of aviation.
- BARTOCCI, ENZO.** Il volo a vela e la sua utilità nel campo scientifico.
L'Aerotecnica, Vol. 10, N. 6 (Giugno 1930), (Anno VIII), Roma, pp. 481-486.
- BATSON, A. S.** See Williams, D. H.: Pressure distribution over a yawed aerofoil, by D. H. Williams, with an appendix on rolling moments on a yawed aerofoil, by A. S. Batson.
- BATTEN, J. D.** Wing-beats.
Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 889-894, ill., diagrs.
- BATTISTA, GIANNI.** Aviazione civile e militare in relazione allo sviluppo aeronautico della Germania.
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 514-519.
- BAUER, LOUIS H.** Medical aspects of safe flying.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 71-72, 194, ill.
- BAUER, LOUIS H., and H. J. COOPER.** Regulating air commerce. Article V—Medical.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 520-522.
- BAUER, M. H.** Rationalisierung im Flugzeugbau.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 630-636, diagrs.
- BAUER, W. C.** Vapor-locking tendencies of automotive fuel-systems.
Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 352-365, diagrs., tabs., ports.
Discussion of W. C. Bauer's semiannual meeting paper.

- BAUMAN, L. F. Vliegtuigen en brandweerdienst.
Het Vliegveld, 14de Jaarg., No. 3 (Maart 1930), Amsterdam, p. 88.
- BAUMHAUER, A. G. von. Congress over zweefvluchten.
Het Vliegveld, 14de Jaarg., Nos. 7, 9 (Juli, Sept. 1930), Amsterdam, pp. 234-238, 310-312, ill.
- BAUR, FRITZ. "Wir Flieger 1914-1918. Der Krieg im Fliegerlichtbild."
Wien, Schweizerbau und Oesterreichische Druck- und Verlagsgesellschaft m. b. H., 1930,
pp. 116.
- BAUR DE BETAZ, W. Jahrbuch des Deutschen Luftfahrt-Verbandes 1929.
Berlin, Verlag: Klasing & Co. G. m. b. H., 1929, pp. 432.
- BEACH flying. See Greene, Ralph: Some notes on beach flying.
- BEACONS. Pyle-National electric code beacon.
Airway Age, Vol. 11, No. 5 (May 1930), New York, p. 700, ill.
- See Anderson, S. H.: The penetration of light through fog.
- See Breckenridge, Francis Chapin, and J. E. Nolan: Relative visibility
of luminous flashes from neon lamps and from incandescent lamps with and
without red filters.
- See Dellinger, John Howard, H. Diamond, and F. W. Dunmore: Develop-
ment of the visual type airway radiobeacon system.
- See Diamond, Harry: Applying the visual-modulation type radio range
to the airways.
- See Diamond, Harry, and Francis Winkley Dunmore: A radiobeacon and
receiving system for blind landing of aircraft.
- See Hinsburg, F. C.: Air navigation facilities.
- See Kear, Frank Gregg, and W. E. Jackson: Applying the radio range to
the airways.
- See Porter, L. C.: Thirty-cent protection for a million-dollar ship.
- See Ross, Hugh G.: A new airplane guide and obstruction marker.
- See Winnipeg: The Winnipeg airway beacon.
- BEALE, MARIE (OGE). The modern magic carpet; air-jaunting over the ancient
East.
Baltimore, Printed by J. H. Furst Co., 1930, pp. viii, 72, ill.
- BEAMS. See Newlin, J. A., and George W. Trayer: A method of calculating the
ultimate strength of continuous beams.
- See Trayer, George William: The design of plywood webs for airplane
wing beams.
- BEARDMORE. See Carter, B. C., and N. S. Muir: Torsional vibration of crank-
shafts Beardmore "Tornado" airship engine investigations.
- BECK, WALDEMAR. Italienische handelsluftfahrt.
Aeronautica, Vol. 4, No. 2 (Febr. 1930), Arnhem, pp. 32-33, 35.
- BECKER, HELLMUTH. Wirtschaftliche probleme des deutschen luftverkehrs . . .
Hamburg [Kellinghusen, H. J. J. Hay], 1930, pp. viii, 87.
- BEDELL, FREDERICK. The airplane; a practical discussion of the principles of
airplane flight, rewritten and enlarged with the assistance of Theodore E.
Thompson.
New York, D. Van Nostrand Company, inc. [1930], pp. xiii, 371, ill., diagrs.

- BEE, R. S. Some notes on glider flying.
Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 39, 148, 150.
- BEECH, WALTER H. Let's tell the truth about airplane accidents.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, p. 49.
- BEELITZ, D. Vergleich von Triebgas- und Benzinbetrieb beim Luftschiff.
Das Luftschiff, 2. Jahrg., Nr. 3, 1930, Berlin, pp. 17-19, ill.
- BEELITZ, HELMUT. Der gegenwärtige Stand der Heliumgewinnung und Heliumforschung.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 5. Heft (14. März 1930), München, pp. 109-115, ill., diagrs.
- BEHM. See Schreiber, Ernest: The Behm acoustic sounder for airplanes with reference to its accuracy.
- BEHMANN, MARIO. Motore a due tempi e doppio effetto.
Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 281-291.
- BĚHOUNEK, FRANZ. Sieben Wochen auf der Eisscholle; der Untergang der Nobile-Expedition.
Leipzig, F. A. Brockhaus, 1930, pp. 263, ill., maps.
- See Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia."
- BEHRENS, HEINZ. Die Berechnung erzwungener Drehschwingungen von Mehrmassensystemen, mit besonderer Berücksichtigung der Verhältnisse bei Motorenanlagen.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 12. Heft (28 Juni 1930), München, pp. 297-305, diagrs.
- BEIER-LINDHARDT, ERICH. Das deutsche Luftschiff, seine geschichte, einrichtungen und fahrten, mit bildern und skizzen, herausgegeben von Erich Beier-Lindhardt.
Breslau, H. Handel, 1930, pp. 48, ill.
- BEISEL, R. B. Possibilities of the liquid-cooled aircraft engine.
Jour. Soc. Automotive Engineers, Vol. 27, No. 4 (Oct. 1930), New York, pp. 403-407.
- BELL, ALEXANDER GRAHAM. See Seely, Lyman J.: Flying pioneers at Hammondsport, New York.
- BELLANCA. See Rotroff, David: Bellanca produces another different type plane.
- BELLANCA, G. M. Efficiency spells profits in airplane operation.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 33.
- BELLANCA AIRCRAFT CORPORATION. The Bellanca pacemaker.
New Castle, Del., Bellanca Aircraft Corporation, 1930, pp. 11, ill.
- BELLONTE MAURICE. See Costes, Dieudonné: The first non-stop flight from Paris to New York.
- BELMONTE, BLANCO. See Mejias, Jerónimo, y Blanco Belmonte: La primera vuelta al mundo en el "Graf Zeppelin".
- BELTRAMI, GIAN MARIO. L'aeronautica nella difesa aerea.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 207-231.
- Le incursioni aeree.
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 450-462.
- BENKENDORFF, RUDOLFF. Fragen und Ziele der Flugsicherung.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 623-626.
- BENNETT, RICHARD REA. Aviation. Its commercial and financial aspects.
New York, The Ronald Press Co., 1929, pp. xi, 127, ill.

- BENTHEIM, ALEXANDER VON. Entre técnicos. La defensa nacional. Aerea, Ano 8, Num. 84 (Julio 1930), Madrid, pp. 3-6.
- BENUZZI. See L., P.: L'hélice Benuzzi à pales automatiquement déformables.
- See Rysky, Carlo de: Description de l'hélice Benuzzi.
- BENZINE. See Amiel, J.: Recherches expérimentales sur l'oxydation du benzène.
- BERCH VAN HEEMSTEDE, I. L. VAN DEN. Een gemeenschappelijke luchthaven voor 's-Gravenhage en Rotterdam. Het Vliegveld, 14 de Jaarg., No. 9 (Sept. 1930), Amsterdam, p. 298.
- Internationale Luchtvaart-Congressen. Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 277-279, port.
- BEREZOWSKI, ALEXANDER. Handbuch der Luftpostkunde. Neustadt (Orla), Druck und Verlag: J. K. G. Wagnersche Buchdruckerei.
- BERG, BENGT. De laatste arenden. 's Gravenhage, N. V. Leopold's Uitgever Maatschappij.
- BERGER, P. Dispositifs pour la reduction de la vitesse d'atterrissage. Schweizer Aero-Revue, Vol. 5, No. 1 (Jan. 1930), Zurich, pp. 11-13, ill.
- BERGMANN, STEFAN, und H. REISSNER. Neuere Probleme aus der Flugzeugstatik. Ueber die Knickung von Wellblechstreifen bei Schubbeanspruchung. Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 12. Heft (28. Juni 1930), Munchen, pp. 308-310, diagrs. tablis.
- BERGSTROM, FLORENCE O. Hoover presents special medal to Byrd. U. S. Air Services, Vol. 15, No. 7 (July 1930), Washington, p. 54.
- Women's City Club of Washington goes aeronautic. U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 60.
- BERLIN. See Stiles, W. S.: The international aviation lighting meeting in Berlin.
- BERMUDA. See Connor, H. P. McLean: Navigation on the non-stop flight from New York to Bermuda and return.
- BERRY, J. W. Cold working of metals. Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 210-211.
- BERTUCCIOLI, A., e B. PINCHETTI. Ali nel cielo antologia dell'aviazione a cura di A. Bertuccioli e B. Pinchetti. Roma, Libreria del Littorio (s. tip.), [1930], pp. 464.
- BESANÇON, GEORGES. L'année aéronautique 1929. L'Aérophile, 38e année, Nos. 9-10 (15 mai 1930), Paris, pp. 138-144, ill.
- BETZ, ALBERT. Das Kaiser Wilhelm-Institut für Strömungsforschung, verbunden mit der Aerodynamischen Versuchsanstalt in Göttingen. Rudolph Brauer, Albert Mendelsohn Bartholdy, Adolf Meyer, Johannes Lemke. Forschungsinstitute, ihre Geschichte, Organisation und Ziele. 2. Bd. Hamburg, Paul Hartung Verlag, 1930, pp. 250-255.
- The vortex theory and its significance in aviation. Part I.—Vortex theory. Part II.—Wing theory. National Advisory Committee for Aeronautics, Technical Memorandums No. 576, July 31, 1930, Washington, July 1930, pp. 28, ill.
- See Prandtl, L., und A. Betz: Ergebnisse der Aerodynamischen Versuchanstalt zu Göttingen.
- BEYNE., and GÖTT. L'aptitude physique à la fonction d'observateur en avion. Revue des Forces Aériennes, No. (8 mars) 1930, Paris, pp. 335-344.
- BIBLIOGRAPHY. See Boffito, Giuseppe: Biblioteca Aeronautica Italiana Illustrata.

- BIBLIOGRAPHY.** See Brockett, Paul: *Bibliography of aeronautics 1928*.
- See Díaz Arquer, Graciano, y Pedro Vindel: *Historia bibliográfica e iconográfica de la Aeronáutica en España, Portugal, países hispano-americanos y Filipinas desde los orígenes hasta 1900*.
- See Smithsonian Institution. *A list of books forming the Langley aeronautical collection deposited in the Library of Congress by the Smithsonian Institution*.
- See Zahm, Albert Francis, and C. A. Ross: *Tentative bibliography on skin friction flow*.
- BICHE, JEAN.** *Le concours Guggenheim pour la sécurité en aviation.*
L'Aéronautique, 12me année, No. 128 (Jan. 1930), Paris, pp. 8-11, ill.
- Vers l'avion à vues totales.
L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, pp. 124-125, ill.
- BIDDLECOMBE, C. H.** Greater sales effort needed.
Aviation, Vol. 29, No. 1 (July 5, 1930), New York, p. 19.
- Know your insurance data.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, p. 187.
- BIEDERMANN, GEORGE.** Achievements of commercial aviation in Colombia and Ecuador.
Pan American Magazine, Vol. 43, No. 5 (Nov. 1930), Washington, pp. 339-344.
- BIELEFELD, ERNST.** *Doppeltwirkender Zweifakt-Luftfahrzeug-Dieselmotor.*
Deutsche Luftfahrt, 34. Jahrg., Heft 5/6, 1930, Berlin, pp. 98-100, illus.
- BIERMANN, ARNOLD E.** See Schey, Oscar W., and Arnold E. Biermann: The effect of cowling on cylinder temperatures and performance of a Wright J-5 engine.
- BIGELOW, ANSON A.** Airport operating income.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1331-1333, ill.
- Aviation country club organization.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 202-205, ill.
- BIGELOW, ANSON A.**, and N. L. H. SMITH. Airports in 1929 and 1930.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 55-56, ill.
- BILBAULT, G.** *Utilisation pratique de la Polaire-Logarithmique pour le calcul des performances des avions.*
Technique Aéronautique, 21e année, No. 100, 101 (15 fév., 15 mars, 1930), Paris, pp. 35-41, 50-59, ill.
- BILLARD.** Le contrôle des exercices de bombardement aérien.
Revue des Forces Aériennes, No. 17 déc. 1930, Paris, pp. 1449-1474, ill., tabls.
- BINGHAM, HIRAM.** Annual report of the president.
National Aeronautic Magazine, Vol. 8, No. 9 (Sept. 1930), Washington, pp. 18-27, ill.
- The future of aviation as seen by a distinguished engineer not so very long ago.
Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 25-26, port.
- Pending air legislation.
Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 15, 53-55, 65.
- Why swap horses?
Western Flying, Vol. 7, No. 5 (May 1930), Los Angeles, Calif., pp. 54-55, port.
- BIRD flight.** Soaring bird flight.
Flight No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, p. 1487.
- See Evershed, Sydney: Ravens flying upside down.

- BIRD flight. *See* Franquinet, E.: Vogels vliegen over Limburg.
- *See* Koenigswarter, H. de: Le vol des oiseaux et le balancement.
- BIRD wings. Nota sulle ali degli uccelli plananti.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 145-146, ill.
- *See* Walker, Gilbert T.: Note on the wings of gliding birds.
- BIRKIGT, MARC. *See* Blanchet, Georges: Personnalités contemporaines. Marc Birkigt.
- BISEO, ATTILIO. Considerazioni sull'impiego della navigazione astronomica in volo.
Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 260-278, diagrs.
- Determinazione dei percorsi ortodromici a mezzo del calcolo.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 49-56, ill.
- BLACK, ARCHIBALD. A new high strength aluminum alloy.
Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 784-787, tabls.
- Record and trend of the industry.
Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1562-1563, 1588, diagrs.
- BLACK, VAN LEAR. De luchtreizen van Van Lear Black.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 287-292, ill.
- *See* Stephan, B.: Aan de nagedachtenis van Van Lear Black.
- BLACKBURN. The Blackburn Aeroplane and Motor Company, Ltd.
Air annual of the British Empire 1930, London, pp. 431-438, ill.
- Blackburn "Ripon III."
Flight, No. 1138, Vol. 22, No. 42 (Oct. 17, 1930), London, pp. 1129.
- The Blackburn "Sydney" flying boat. Three Rolls-Royce F. XII M. S. engines.
Flight, No. 1132, Vol. 22, No. 36 (Sept. 5, 1930), London, pp. 986-987.
- BLANC, EDMOND. Toute l'aviation. Préface de M. Laurent-Eynac . . . Le vent, l'homme, l'oiseau, l'avion.
Paris, Société Parisienne d'édition [1930], pp. 345, ill., maps.
- BLANCARD, J. Utilisation des procédés Loth pour le guidage des avions par ondes hertziennes. II.—Point de vue et réfutations de la S. I. P. L.
L'Aéronautique (L'Aérotechnique, 8e année, No. 94), 12me année, No. 137 (Oct. 1930).
Paris, pp. 370-375, ill.
- BLANCHARD. *See* Boffito, Giuseppe: L'aeronautica nelle città italiane. Genova II.—Il fortunoso viaggio aereo di Madame Blanchard da Milano a Genova (1811—15 agosto).
- BLANCHARD, GIOVANNI PIETRO. *See* Polesine, Jotti da Badia: Ai margini della storia. Documenti sull'italianità di Blanchard.
- BLANCHARD, JEAN PIERRE. *See* Hay, James, jr.: America's first air journey.
- BLANCHET, G. Documentation commerciale. L'inauguration du nautonaphte.
L'Aérophile, 38e année, No. 12 (15 déc. 1930), Paris, p. 374.
- BLANCHET, GEORGES. Personnalités contemporaines, Laurent-Eynac, Ministre de l'Air.
L'Aérophile, 38e année, Nos. 7-8 (15 avril 1930), Paris, pp. 98, 107, port.
- Personnalités contemporaines. Marc Birkigt.
L'Aérophile, 38e année, No. 9 (15 sept. 1930), Paris, p. 258, port.
- BLEE, HARRY H. Aeronautic development.
The September Scientific Monthly, Vol. 31, No. 3 (Sept. 1930), New York, pp. 236-240.

- BLEECKER, MAIRLAND B.** *See* Helicopters: Curtiss-Bleeker helicopter.
- BLEEKER, W.** De meteorologische organisatie der Duitsche vliegvelden.
Het Vliegveld, 14de Jaarg., No. 12 (Dec. 1930), Amsterdam, pp. 403-404.
- BLEISTEIN, W.** Metallluftschiffe.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 626-630, illus.
- BLENK, HERMANN.** Flight tests for the determination of static longitudinal stability.
National Advisory Committee for Aeronautics, Technical Memorandums No. 584, Sept. 25, 1930, Washington, September 1930, pp. 11, illus., diagrs.
- Flugversuche zur Bestimmung der statischen Längsstabilität.
Luftfahrtforschung, Band 6, Heft 5, 1930, München und Berlin, R. Oldenbourg
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin 1930, pp. 49-53, illus., diagrs.
- Göttingen six-component scale measurements on a Junkers A 35 airplane model.
National Advisory Committee for Aeronautics, Technical Memorandums No. 586, Oct. 9, 1930, Washington, October 1930, pp. 8, illus., diagrs.
- Göttinger Sechsdimensionsmessungen an einem Modell des Flugzeugmusters Junkers A 35.
Luftfahrtforschung, Band 6, Heft 5, 1930, München und Berlin, R. Oldenbourg.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin 1930, pp. 54-60, illus., diagrs.
- Der Magnuseffekt in Theorie und Wirklichkeit. Bemerkungen zu dem gleichnamigen Aufsatz von Fr. Ahlborn in Heft 24 der ZFM 1929.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 3. Heft (14. Feb. 1930), München, p. 66.
- Über die Längsstabilität eines Flugzeuges mit losgelassenem Höhensteuer.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 61-68, illus., diagrs.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 8. Heft (28. April 1930), München, pp. 189-196, diagrs.
- BLEY, D. WULF.** Flugsport-Volkssport.
Berlin, Verlag E. S. Mittler & Sohn, 1930, pp. 36, ill.
- BLEY, WULF.** Motorflugsport-Querschnitt.
Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, pp. 227-230.
- BLIND flying.** For flying equipment.
Aircraft, Vol. 8, No. 9 (June 30, 1930), Melbourne, pp. 374, 376, 378, 380, 382, 384, and 386.
- See Bouche, Henri: Pour qu'il y ait moins d'"avions aveugles".
- See Hoover, Herbert, jr.: Blind flying and radio.
- See Ocker, William C.: Economic value of flying by instruments.
- See Ramsey, Logan C.: The distinction between "blind" flying and instrument flying.
- See Rochford, Daniel: Blind flying instruction. Methods used in instructing Pan American Airways pilots.
- See Whitaker, O. B.: The "Artificial Horizon" assists pilots flying blind.
- BLIND planes.** Les avions aveugles.
L'Aéronautique, 12e année, No. 128 (Jan. 1940), Paris, p. 2

- BLOCK, WALTER. Die Anwendung von Libellen bei nautischen Höhenwinkel-messern.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 491-500, illus.
- See Lacmann, Otto, und Walter Block: Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffs LZ 127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL.
- BLUEBIRD. The story of the Bluebird.
The Bluebird, Suppl. to The Aeroplane, Vol. 38, No. 21 (May 21, 1930), London, pp. 935-984, illus.
- BLUM, RENÉ. L'aviation de tourisme et les assurances.
Droit Aérien, Juillet, Août, Septembre 1930, Paris, pp. 398-401.
- L'assurance-vie en aéronautique.
L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, pp. 101-105.
- BLYTH, W. C. Petrol-flex tubing.
Mechanical World, Vol. 87, No. 2269 (June 27, 1930), Manchester, p. 604, ill.
- BOBIGNY. See Clériot, Marcel: Le radiophare de Bobigny pour la navigation aérienne.
- BÖHME, ERWIN. Briefe eines deutschen Kampfflieggers an ein junges Mädchen; hrsg. von Prof. Dr. Johannes Werner.
Leipzig, K. F. Koehler, [1930], pp. 207, ports.
- BÖHNING, H. Fortschritte im Sportflug.
Luftschau, 3. Jahrg., Nr. 22, 23 (24. Nov., 10, Dez. 1930), Berlin, pp. 172, 181.
- BOEING. Day and night transcontinental service.
Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 658-659, ill.
- The Boeing "Monomail," new type transport plane.
U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, p. 47, ill.
- Monomail—the new Boeing passenger-cargo high speed plane.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 46-47, ill.
- See Canney, Frank: The Boeing 80-A.
- See Crary, Harold: Boeing experiment in specialized training is meeting a definite public demand.
- BOEING, W. E. Operation and manufacture—1929-30.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 43-46, ill.
- BOEKER, J. De medische sectie.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 283-284, port.
- BOFFITO, GUISEPPI. L'aeronautica nelle città italiane. Genova II.—Il fortunoso viaggio aereo di Madame Blanchard da Milano a Genova (1811—15 agosto).
Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 601-604, ill.
- L'aeronautica nelle città italiane. Genova III.—Tentativo di J. Bruno di traversare il Mediterraneo in pallone e sua conferenza a Genova sull'aerostatica (1890).
Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 387-389.
- L'aeronautica nelle città Italiane. Napoli I.—Saggi sulla dirigibilità delle macchine di V. Lamberti e di G. D. Bruno (1784). La prima ascensione aerostatica a Napoli, di V. Lunardi (nel 1789).
- L'aeronautica nelle città italiane: Palermo.
Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 389-394.

- BOFFITO, GUISEPE.** L'aeronautica nelle città italiane. Torino V.—L'aerostato battello-vapore di Vincenzo Lanzillo (1875).
Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 199-201, ill.
- Biblioteca Aeronautica Italiana, illustrata. Precede uno studio sull'aeronautica nella letteratura, nell'arte e nel folklore.
Firenze, Leo S. Olschki editore, 1929, pp. cxv-544.
- Note retrospettive documentarie d'aerotecnica.
L'Aerotecnica, Vol. 10, N. 1-6, 10-12 (Gen.-Giugno, Sett.-Dic. 1930), (Anno VIII, IX), Roma, pp. 29-37, 163-170, 287-292, 382-387, 487-493, 746-748, 850-858, ill.
- Retrospective documental notes on aeronautics.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, p. 977.
- BOGGS, R. W., and S. C. CLARK.** Training aircraft welders.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 114-120, ill.
- BOHRER, WALT.** Reseeding by air—How Doc and Bill do it. (Reseeding grazing ground.)
Western Flying, Vol. 7, No. 5 (May 1930), Los Angeles, Cal., pp. 70-72, ill.
- BOLLA, FILIPPO.** La velocità del vento al suolo e a quote a Palermo.
L'Aerotecnica, Vol. 10, N. 4 (Aprile 1930), (Anno VIII), Roma, pp. 276-286, tabs.
- BOLLENRATH, FRANZ.** Ausbeulerscheinungen an ebenen, auf Schub beanspruchten Platten, Ultralumin.
Luftfahrtforschung, Bd. 6, Heft 1, 1929, München und Berlin, pp. 32, ill.
- BOLT testing.** See Teichmann, Alfred, und Karl Borkmann: Versuche mit kurzen Bolzen in Holzbauteilen.
- BOLTS.** Festigkeit von Bolzen in Holzbauteilen.
Maschinenbau, 9. Bd., 9. Heft (1. Mai 1930), Berlin, pp. 306-309, ill.
- BOMBARDMENT.** Bombardment.
Flight, No. 1129, Vol. 22, No. 33 (Aug. 15, 1930), London, pp. 909-910.
- BOMBS.** See Marie, Félix: Une particularité de la portée des bombes d'aviation.
- See Ravelli, Ermanno: Studio di alcune spoollette a percussione per bombe.
- BONIFACIO, FERDINANDO.** Moderne tendenze della tecnica dei velivoli.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), (Anno IX), Roma, pp. 804-820.
- Sulla costruzione dei longheroni delle ali in legno in più pezzi incollati.
L'Aerotecnica, Vol. 10, N. 5 (Maggio 1930), (Anno VIII), Roma, pp. 378-379.
- BOONE, ANDREW R.** Five miles up!
Western Flying, Vol. 7, No. 6 (June 1930), Los Angeles, Cal., pp. 44-47, ill.
- Making the desert pay.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 52, 54.
- More planes needed.
Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Cal., pp. 60-62, ill.
- BOOTS, NORMAN JAY.** See Iseman, John W., N. J. Boots, Randy Enslow . . . : The aviation manual . . .
- BORDEAUX.** See Mesrouze, R.: La formation des mécaniciens de l'aviation au centre des spécialistes de Bordeaux.
- BORGES, LARRE.** See Challe et Larre Borges: Raids dramatiques. Challe et Larre Borges traversent l'Atlantique sud.
- BORKMANN, KARL.** See Teichmann, Alfred, und Karl Borkmann: Versuche mit kurzen Bolzen in Holzbauteilen.

- BOSOLASCO, MARIO. L'aerofotogrammetria nell'indagine limnologica.
Atti dell XI Congresso Geografico Italiano, Napoli 1930. Notiziario tecnico di Aeronautica,
Anno 6, N. 10 (Ott. 1930), Roma, pp. 93-95.
- BOUCHE, HENRI, et P. R. C. GROVES. Études sur la situation économique,
administrative et juridique de la navigation aérienne internationale.
Geneve, 1930.
- BOUCHE, HENRI. Pour qu'il y ait moins d' "avions aveugles."
L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, pp. 115-116, ill.
- BOULTON and PAUL. Boulton & Paul, Ltd. Metal construction.
Air annual of the British Empire 1930, London, pp. 439-447, ill.
- See Jennings, W. G.: The effect of span on aircraft performance, by W.
G. Jennings, in collaboration with Messrs. Boulton and Paul, Ltd.
- BOUNDARY layer. See Falkner, V. M., and Sylvia W. Skan: Some approximate
solutions of the boundary layer equations.
- See Green, J. J.: Viscous layer associated with a circular cylinder.
- See Hansen, M.: Velocity distribution in the boundary layer of a sub-
merged plate.
- See Ower, E., and C. T. Hutton: Investigation of the boundary layers and
the drags of two streamline bodies.
- See Schrenk, Oskar: The boundary layer as a means of controlling the
flow of liquids and gases.
- See Simmons, L. F. G.: Experiments relating to the flow in the boundary
layer of an airship model.
- See Simmons, L. F. G., and N. S. Dewey: Photographic records of flow in
the boundary layer.
- BOURDIER, L. Le Lieutenant-Colonel Happe.
Revue des Forces Aériennes, No. 17, dec. 1930, Paris, pp. 1375-1379, ports.
- BOURGET. L'aéroport de Paris: Le Bourget.
L'Aéronautique (L'Aéronautique marchande, 9me année, No. 108), 12me année, No. 139
(déc. 1930), Paris, pp. 493-494, ill.
- L'avenir du port aérien du Bourget.
L'Aéophile, 38e année, No. 8 (15 août 1930), Paris, pp. 237-238, ill.
- See Le Bourget.
- BOURNE, R. Air survey within the Empire. A summary of the general con-
clusions reached in recent research.
Air annual of the British Empire 1930, London, pp. 15-20, ill.
- BOURQUIN, HANS. Sichtweiten als Funktionen der Höhe bei Luftfahrzeugen.
Deutsche Luftfahrt, 34. Jahrg., Heft 12, 1930, Berlin-Charlottenburg, p. 304, ill.
- BOUSCAT. Une mission aérienne dans la région du Tibesti.
Revue des Forces Aériennes, No. 11, juin 1930, Paris, pp. 709-713, ill., map.
- BOUVE, CLEMENT L. The development of international rules of conduct in air
navigation.
Air Law Review, Vol. 1, No. 1 (Jan. 1930), New York, pp. 1-39.
- BOWEN, R. SIDNEY, jr. Flying from the ground up.
New York, McGraw-Hill, pp. vi, 234.
- Here and there at the Detroit affair.
Aviation, Vol. 28, No. 16 (April 19, 1930), New York, pp. 792-795, ill.
- Pilot licenses vs. solo time.
Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 17-18.

- BOWEN, R. SIDNEY, jr. Ten years of air race programs.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 130-133, illus.
- The trends of activity.
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 105-108.
- Where is my wandering market to-day?
Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 678-680.
- BOWLES. See Springfield, Mass.: The dedication at Springfield, Mass. Race program and air tour celebrate opening Bowles airport.
- BOY SCOUTS OF AMERICA. Model Airplanes, compiled with the assistance of Elmer L. Allen.
[New York], Boy Scouts of America, 1929, pp. 52, diagrs.
- BRACING. See Schmieden, C.: Das Ausknicken versteifter Bleche unter Schubbeanspruchung.
- BRADBROOK, F. D. Impressions of the Spartan Arrow.
The Aeroplane, Vol. 39, No. 14 (Oct. 1, 1930), London, p. 778, ill.
- Sifting the sands of statistics.
The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, pp. 515-518.
- With the night mail.
The Aeroplane, Vol. 38, No. 22 (May 28, 1930), London, pp. 1008-1018, illus.
- BRADBROOK, JOHN. Wind and weather.
The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, pp. 520-522.
- BRADFIELD, F. B. Centre of pressure travel of symmetrical section at small incidence.
Aer. Res. Comm., Rep. Mem., No. 1294 (Ae. 443), December 1929, London, 1930, pp. 9, tables, diagrs.
- BRADFIELD, F. B., and R. A. FAIRTHORNE. Hinge moments of balanced and unbalanced ailerons on R. A. F. 14 wing, to large angles of incidence.
Aer. Res. Comm., Rep. Mem., No. 1331 (Ae. 463), May 1930, London, 1930, pp. 9, illus., diagrs., tables.
- BRADFIELD, F. B. Maximum force on rudders.
Aer. Res. Comm., Rep. Mem., No. 1329 (Ae. 461), April 1930, London, 1930, pp. 4, illus., diagrs.
- BRADFIELD, F. B., and R. A. FAIRTHORNE. Maximum force on the fin and rudder of a Bristol fighter.
Aer. Res. Comm., Rep. Mem., No. 1330 (Ae. 462), May 1930, London, 1930, pp. 4, illus., diagrs., tables.
- BRADFIELD, F. B. Maximum lift coefficient of R. A. F. 30 all-moving rudder.
Aer. Res. Comm., Rep. Mem., No. 1321 (Ae. 458), February 1930, London, 1930, pp. 4, illus., diagrs.
- BRADLEY, SAMUEL STEWART. See Mingos, Howard: The birth of an industry.
- BRAKES. Multiple disc brakes. (Sikorsky.)
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Cal., p. 124, ill.
- Radbremsen für Flugzeuge.
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 176-182, ill.
- Spornformen und Bremsanlage für Grossflugzeuge.
Deutsche Luftfahrt, 34. Jahrg., Heft 3 (März 1930), Berlin, pp. 76-78, ill.
- See Dollfus, Charles: Notes sur l'histoire des freins d'avions.
- See Hall: Aero wheel brakes.
- See Maiorca, Salvatore: Sui carrelli per aeroplani.

BRAKES. *See* Sikorsky: Le frein Sikorsky à disques multiples.

— *See* Sikorsky: A new type of wheel brake.

— *See* Tail group: Spornformen und Bremsanlagen für Grossflugzeuge.

— *See* Wheels: Wheels and brakes.

BRANCH lectures. *See* Hume, D. C. M.: Branch lectures. Some technical notes on Canadian aviation.

BRANCKER, Sir SEFTON. Sir Sefton Brancker's testament.

Das Luftschiff, 2. Jahrg., Nr. 9, 1930, Berlin-Charlottenburg, pp. 68-69.

BRAZIL. *See* Machado, Agenor: Ali italiane in Brasile.

BREAKING test. *See* Hertel, Heinrich: Knickversuche mit schlanken verkleideten Staben.

BREATHING. *See* Kaiser, Wilhelm: Über die Atmung des Höhenfliegers.

BRECKENRIDGE, FRANCIS CHAPIN, and J. E. NOLAN. Relative visibility of luminous flashes from neon lamps and from incandescent lamps with and without red filters.

United States Bureau of Standards, Journal of Research, Vol. 3, No. 1 (July 1929), Washington, pp. 11-25, ill., tabls., diagrs.

BREGUET. Le nouveau sesquiplan Breguet 27 à structure en acier.

L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, pp. 79-81, ill.

— Les records mondiaux de Breguet en 1929.

L'Aérophile, 38e année, Nos. 1-2 (1er-15 jan. 1930), Paris, p. 25, ill.

— *See* D., Ch.: Le style Breguet en aviation.

— *See* De Marolles, R. J.: The Breguet 270 general-purpose military airplane (French). A two-seat all-steel sesquiplane.

— *See* Question Mark: The transatlantic Breguet "Question Mark." Some notes on the "Long Distance" machine of Costes and Bellonte.

BRÉGUET, LOUIS. L'aviation d'hier et de demain, conférence faite par M. Louis Bréguet, le 5 août 1921, à Rouen, au Congrès Annuel de l'Association Française pour relèvement des Sciences.

Paris, Imp. "Labor," 1930, pp. 14, ill.

— Les hélices de sustentation.

Paris, Imp. "Labor," 1930, pp. 21, ill.

BREIHAUPT, JOACHIM. Meine Erfahrungen auf der Atlantikfahrt des "Graf Zeppelin".

Das Luftschiff, Jahrg., Nr. 4, 1930, Berlin, pp. 25-28.

— Mit Graf Zeppelin nach Süd- und Nord-amerika. Reiseindrücke und Fahrterlebnisse

Lahr (Baden), Verlag von Moritz Schauenburg K. G. pp. 152, map.

BREITFUSS, L. Übersicht der hauptsächlichsten bisherigen polaren Flüge und Luftfahrten.

Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, pp. 230-232, map.

BREITHAUPT, D. Das Luftfahrzeug im Dienste der holländischen Wirtschaft.

Das Luftschiff, 2 Jahrg., Nr. 10-11, 1930, Berlin-Charlottenburg, pp. 76-78.

BRENTA, GIACOMO. Grandi e piccoli apparecchi.

Riv. Aeron., Anno 6, N. 6 (Giugno 1930), Roma, pp. 432-433.

BREWER, GRIFFITH. Mr. Griffith Brewer's garden party.

Flight, No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. 1065-1066, ill.

- BRIDGEMAN, OSCAR C., and H. S. WHITE.** The effect of airplane fuel-line design on vapor lock.
Journ. Soc. Automotive Engineers, Vol. 27, No. 4 (Oct. 1930), New York, pp. 444-450, 458, ill.
- BRIDGEMAN, OSCAR C., and ELIZABETH W. ALDRICH.** Effect of weathering on the vapor-locking tendency of gasolines.
Journal, Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 344-351, diagrs., tabs.
- BRIDGEMAN, OSCAR C., AND H. S. WHITE.** The vapor-locking tendency of aviation gasolines.
Journ. Soc. Automotive Engineers, Vol. 27, No. 2 (Aug. 1930), New York, pp. 218-233, ill.
- BRIDGES, H. P.** See Nokes, G. D., and H. P. Bridges: The law of aviation.
- BRIDGEWATERS.** See Ely, Catherine Beach: Aviation enters the historic Bridgewaters.
- BRIDGMAN, LEONARD.** See Jane, Fred T., Charles Grey Grey, Leonard Bridgman, and L. Howard Flanders: All the World's Aircraft of 1929.
- BRIEY.** See Guillemeney: Le bombardement aérien des installations industrielles. Le blocus du bassin de Briey.
- BRIGHAM, R. B.** R 100.
Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 184-189.
- BRILL.** Brill airplane chair.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, p. 252, ill.
- BRINKERHOFF, WILLIAM W.** What about that policy?
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, p. 28.
- BRISSOT, A.** Étude sur les longueurs de roulement au décollage et à l'atterrissement des avions.
Service Technique de l'Aeronautique, Bulletin technique No. 59, Paris.
- BRISTOL.** The Bristol Aeroplane Co., Ltd.
Air annual of the British Empire 1930, London, pp. 448-456, ill.
- The Bristol "Bullpup". An interceptor fighter with Bristol "Mercury" engine.
Flight, No. 1146, Vol. 22, No. 51 (Dec. 19, 1930), London, pp. 1462-1463, ill.
- The Bristol "Jupiter XI.F". Full-throttle type test of the commercial type geared engine.
Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, p. 838, ill.
- New geared and supercharged Bristol "Jupiters". Moderately supercharged types X.F.A.M. and X.F.B.M.
Flight, No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, pp. 1191-1192, ill., diagrs.
- See Alston, R. P.: Stalled flight tests on a Bristol fighter fitted with auto-control slots and interceptors.
- See Bradfield, F. B., and R. A. Fairthorne: Maximum force on the fin and rudder of a Bristol fighter.
- See Halliday, A. S., and C. H. Burge: Lateral stability calculations for the Bristol fighter aeroplane.
- See Halliday, A. S.: Stability derivatives of the Bristol fighter.
- See Jones, B. Melvill, C. E. Maitland, and R. P. Alston: Records of the lateral motions of a stalled Bristol fighter aeroplane with slots upon the upper wing tips. Experiments made in the Cambridge University Air Squadron.

- BRISTOL.** *See* Jones, E. T.: The full scale determination of the lateral resistance derivatives of the Bristol fighter aeroplane. Part III.—The determination of the rate of roll derivatives.
- *See* Maitland, C. E., and J. H. C. Wake: Comparative handling tests of three Bristol fighter aircraft with different types of slots.
- BRISTOL meeting.** On the Bristol meeting.
The Aeroplane, Vol. 38, No. 23 (June 4, 1930), London, pp. 1057-1064, ill.
- BROCKETT, PAUL.** Bibliography of aeronautics 1928.
National Advisory Committee for Aeronautics, Washington, United States Government Printing Office, 1930, pp. vi, 214.
- BRODBECK, W.** Eine Gesellschaft zur Förderung des Luftverkehrs ist gemeinnützig im Sinne des §14 Vermögens-Steuer-Gesetzes.
Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, p. 245.
- BROMBACHER, W. G., and E. R. MELTON.** Temperature coefficient of the modulus of rigidity of aircraft instrument diaphragm and spring materials.
National Advisory Committee for Aeronautics, Report No. 358, Sept. 29, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, ills., diagrs.
- BROOKE, G. V.** *See* Capon, R. S., and G. V. Brooke: The application of dimensional relationships to air compressors, with special reference to the variation of performance with inlet conditions.
- BROUWER, D.** Brandweer-vliegtuigen.
Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, pp. 44-45.
- BROWN, E. C.** The air as an aid to business.
Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, pp. 1090-1091.
- BROWN, S. G.** A new star on the horizon.
The Aeroplane, Vol. 39, No. 16 (Oct. 15, 1930), London, pp. 890-892, ills.
The Brown turn indicator.
- BROWN, WALTER F.** *See* Mail: New plan for air-mail payments.
- BROWN, WILLIAM G.** The Guggenheim safety competition tests and the Curtiss "Tanager."
Aviation, Vol. 28, No. 6 (Feb. 8, 1930), New York, pp. 236-241, ills., tabls.
- BROWN, WINIFRED.** *See* King's Cup: The King's Cup. Miss W. Brown's win. A record entry.
- BRUCE, CLARENCE S.** Automobile-engine acceleration.
Journal Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 274-284, ill.
- BRUEGGEMAN, W. C.** *See* Whittemore, H. L., and W. C. Brueggeman: Strength of welded joints in tubular members for aircraft.
- BRUMELOT.** Le 11e régiment d'aviation de bombardement.
Revue des Forces Aériennes, No. 7, fév. 1930, Paris, pp. 132-152, ill., tabls.
- BRUNAT, HENRI.** Combating airplane fires.
National Advisory Committee for Aeronautics, Technical Memorandums No. 550, Jan. 30, 1930, Washington, January 1930, pp. 18, ills.
- La lutte contre l'incendie à bord des avions.
Paris, Comité Français de Propagande Aéronautique, 1930, pp. 31, ill.
- BRUNO, J.** *See* Boffito, Giuseppe: L'aeronautica nelle città italiane. Genova III.—Tentativo di J. Bruno di traversare il Mediterraneo in pallone e sua conferenza a Genova sull'aerostatica (1890).
- BRUSSELS.** The Brussels meeting.
Flight, No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. 1074-1075.
- BRYAN, F. I.** The fund is ended, but its work still carries on.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 64-66, ports., ill.

- BUCHLER, WALTER.** Oriental aeronautics. What Japan is doing to establish her place in world aeronautics.
Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, p. 57, ill.
- BUCKLEY, HAROLD R.** Sportsmen pilots of 1918.
The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, p. 25, port. Portrait of James Meissner.
- BUDGETS.** See France: Le budget de l'aéronautique devant le Chambre.
— See France: Le budget de 1930 devant la chambre.
- BUDIG, F.** Luftkraftmessungen an schräg angeblasenen Tragflügelin.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 10. Heft (28. Mai 1930), München, pp. 245-249, ill.
- BUDWIG, GILBERT G.** Air regulation.
The September Scientific Monthly, Vol. 31, No. 3 (Sept. 1930), New York, pp. 241-244.
- Construction and the operation of gliders.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1182-1185, ill.
- BÜLOW, FRHR. v.** Die Weltluftfahrt 1929. II.—Luftrüstungen.
Die Luftwacht, Heft 1, Jan. 1930, Berlin, pp. 6-24, diagrs.
- BUFFALO.** See Airports: Airport conference at Buffalo, N. Y. Delegates active—Committees' reports point to progress.
- BUMSTEAD, A. H.** The Bumstead sun compass.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 124-125, ill.
- BURBANK, California.** The United Airport at Burbank, Calif. This new port designed and constructed to be one of the world's finest.
Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 945-951, ill.
- BURDEN theory.** See Logan, George B.: The interstate commerce "burden theory" applied to air transportation.
- BUREAU OF STANDARDS.** Aeronautic radio research at the Bureau of Standards.
Science, Vol. 72, No. 1875 (Dec. 5, 1930), New York, p. 573.
- BUREAU VERITAS.** Règlement aéronautique.
Paris, Bureau Veritas, [1929], pp. lxiv, 512, ill., diagrs.
- BURGE, C. G.** The air annual of the British Empire 1930.
London, Gale & Polden, Ltd., [1930], pp. 774, ill.
- BURGE, C. H.** See Halliday, A. S., and C. H. Burge: Lateral stability calculations for the Bristol fighter aeroplane.
- BURGERHOUT, ELS.** Met de Do. X boven Amsterdam.
Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 358-360, ill.
- BURGIN, E. L.** See Great Britain: The co-ordination of defence services.
- BURNELLI.** The Burnelli "All-wing" air-liner.
Flight, No. 1128, Vol. 22, No. 32 (Aug. 8, 1930), London, p. 902, ill.
- See Klemin, Alexander: Wind tunnel experiments on the Burnelli all-wing principle.
— See Klemin, Alexander: Wind tunnel experiments on the Burnelli principle.
- BURNETT, C. DENNISTOUN and F. HANDLEY PAGE.** Airship versus aeroplane.
The Aeroplane, Vol. 38, No. 20 (May 14, 1930), London, p. 900.
- BURTON, WALTER E.** Determining the effect of lightning upon the airplane.
Aviation, Vol. 28, No. 4 (Jan. 25, 1930), New York, pp. 149-151, ill.
- BURTT, ROBERT MORRIS.** A backward glance at St. Louis.
The Sportsman Pilot, Vol. 3, No. 3 (March 1930), New York, p. 20, ill.

BURTT, ROBERT MORRIS. Preparing for the private market.
Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 343-345, ill.

BÜTIKOFER-KLEIN, E. "Im Verkehrsflugzeug".
Solothurn, Verlag Vogt-Schid, 1929, pp. 60, ill.

BUZZARD, R. W. *See* Mutchler, W. H., and R. W. Buzzard: Methods for the identification of aircraft tubing of plain carbon steel and chromium-molybdenum steel.

BYERS, MARGARETTA MANNING. Fashions for air and field.
The Sportsman Pilot, Vol. 3, No. 3, 4 (March, April 1930), New York, pp. 24-27, 22-25, 63, ill.

BYRD, RICHARD EVELYN. L'expedition Byrd au pole sud.
L'Aérophile, 33e année, Nos. 1-2 (1er-15 Jan. 1930), Paris, pp. 7-8, ill.

— Himmelwärts. Meine Flüge zum Nordpol und über den Atlantik.
Berlin, Verlag F. A. Brockhaus, 1929, pp. 159.

— Little America, aerial exploration in the Antarctic, the flight to the South Pole.
New York, London, G. P. Putnam's Sons, 1930, pp. xvi, 422, illus., maps.
The geological sledge trip by Laurence M. Gould, pp. 393-412.

— *See* Bergstrom, Florence O.: Hoover presents special medal to Byrd.

— *See* Green, Fitzhugh: "Byrd has been through Hell—".

BYRD ANTARCTIC EXPEDITION. *See* New York Times: Catalog, the New York Times antarctic and aviation exhibit, together with a chronology of historic events in aviation.

C

CABINS. *See* D., Ch.: Notes sur la disposition générale des cabines.

CABOT, GODFREY. *See* Mason, George: The Godfrey Cabot pickup device.

CADMIUM. *See* Wright, L. K.: Cadmium in aviation.

CAESAR, WOLFGANG. Die Organisation des Internationalen Rundfluges 1930.
Deutsche Luftfahrt, 34. Jahrg., Heft 7/8, 1930, Berlin-Charlottenburg, pp. 168-169.

CAILLEUX, J. Le moteur Renault 95 CV 4 cylinders en ligne.
Air, 12. année, No. 254 (juin 1930), Paris, pp. 17-18, ill.

CAIRO. Cairo to the Cape airway.
Near East and India, Vol. 38, No. 1023 (Dec. 25, 1930), p. 740.
Connecting England with South Africa.

— *See* Potter, Leslie S.: Cairo-Baghdad air mail route.

CALCIUM chloride. *See* Dust-laying: The use of dust-laying chemicals.

CALCULATOR. Il calcolatore Addison-Luard.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 116-124, ill.

— *See* Biseo, Attilio: Determinazione dei percorsi ortodromici a mezzo del calcolo.

CALDERARA, A. Lezioni di aeronautica per gli ufficiali della scuola di applicazione di artiglieria e genio; anno 1929, VII.
Torino, arti graf. L. Giachino, 1929, pp. 213, ill.

CALDWELL, CY. "Go South, young man!"
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 56-58, illus.

CALLEN, C. *See* Perring, W. G. A., and C. Callen: Moments and forces on a yawed model aeroplane.

- CALSHOT.** L'installation de Calshot pour le chronométrage des avions.
L'Aéronautique, 12me année, No. 128 (Jan. 1930), Paris, p. 39, ill.
- CAMAC, HARRIET JULIA METCALFE.** From India to England by air, with a foreword by Henry Prather Fletcher.
New York, Privately printed, 1929, pp. 20, ill.
- CAMBRIDGE.** Cambridge University air squadron.
Flight, No. 1124, Vol. 22, No. 28 (July 11, 1930), London, pp. 782-783, ill.
- CAMDEN, NEW JERSEY.** Central airport, Camden, N. J.
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1075-1077, ill.
- CAMERA.** All-purpose aerial camera.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, p. 65, ill.
- See Suhara, Toyotarô, Naozô Satô, and Sidutake Kamei: A new ultra-speed kinematographic camera taking 40,000 photographs per second.
- CAMICHEL, CHARLES.** Leçons sur les conduites.
Chaire de Méchanique des Fluides et Applications, fondation du Sous-Secrétariat d'Etat de l'Aéronautique, Paris, Gauthier-Villars et Cie., 1930, pp. 101, ill.
- CAMMEN, LEON.** The military value of aviation.
Mech. Eng., Vol. 52, No. 3 (March 1930), New York, pp. 181-186, ill.
- CANADA.** An Arctic air route to Canada.
The Aeroplane, Vol. 38, No. 24 (June 11, 1930), London, p. 1126.
- Civil aviation in Canada.
Air annual of the British Empire 1930, pp. 134-142, ill.
- Civil flying in Canada in 1929.
Flight, No. 1133, Fol. 22, No. 37 (Sept. 12, 1930), London, pp. 1019-1020.
- Quarterly Civil Air Liaison Letter Nos. 10-13.
Department of National Defence, Civil Aviation Branch, 31st March, 30th June, 30th Sept., and 31st December 1930 (mimeographed), Ottawa, pp. 5, 6, 9, 7.
- Report on civil aviation and civil government air operations for the year 1929.
Dominion of Canada, Department of National Defense, Ottawa, 1930, pp. 100, ill., maps.
- Royal Air Force. Information relating to enlistment, terms of service, pay, etc., of airmen and boys in the Royal Canadian Air Force.
Ottawa, F. A. Achland, printer to the King, 1930, two numbers pp. 1, 3-10, tabls.
- See Clark, Kenneth: Canada's cities and solitudes lure the air nomad.
- See Hume, D. C. M.: Branch lectures. Some technical notes on Canadian aviation.
- See Montagnes, James: Aviation development in Canada doubled.
- See Montagnes, James: Canada's aerial expansion during 1929.
- See Montagnes, James: Making an Indian treaty by air in Canada.
- See Ring, Laurence E.: Airports in Canada and Newfoundland.
- See Rowse, Francis W.: Private flying in Canada.
- See Sandwell, Arnold H.: Canadian fixed base operator has good year.
- CANNEGIETER, H. G.** Ballonvaarten van de "Hollandia" en "Neerlandia."
Het Vliegveld, 14de Jaarg., No. 8 (Aug. 1930), Amsterdam, pp. 248-249.
- CANNEY, FRANK.** The Boeing 80-A.
Aviation, Vol. 28, No. 19 (May 10, 1930), New York, pp. 943-945, ill.

CAPON, R. S., and G. V. BROOKE. The application of dimensional relationships to air compressors, with special reference to the variation of performance with inlet conditions.

Aer. Res. Comm., Rep. Mem., No. 1336 (E. 40), June 1930, London, 1930, pp. 22, illus., diagrs., tabs.

CAPRONI. The Caproni "90 P. B." military airplane (Italian). A giant biplane of 6,000 horsepower.

National Advisory Committee for Aeronautics, Aircraft Circulars No. 121, July 25, 1930, Washington, July 1930, pp. 7, illus.

— See Rysky, Carlo de: Caproni—90 P. B.—6,000 PS.

CAPTIVE balloons. See Balloons: Un nouveau ballon captif.

— See Jouglard, P.: Note sur les ballons captifs d'observation.

— See Kamm, Wunibald: Betriebsverhältnisse und Konstruktionsgrundlagen der Fesselballone.

— See Neant: L'instruction d'observation donnée en salle aux élèves-observateurs en ballon captif.

CARAFOLI, ELIE. Aérodynamique des ailes d'avions. Théorie et applications. Paris, E. Chiron.

— Le calcul des performances d'un avion.

L'Aérophile, 38e année, Nos. 11-12 (15 juin 1930), Paris, pp. 173-179, diagrs.

— Considerazioni teoriche sul "girante a paletta."

Atti della Reale Accademia Nazionale dei Lincei, Anno 327, 1930 (VIII). Rendiconti, Classe fisiche, matematiche e naturali, Vol. 11, Serie 6a, fasc. 3 (2 Feb. 1930), Roma, pp. 288-293, ill.

— Sur la stabilité statique longitudinale et le centrage des avions.

L'Aéronautique (Aérotechnique 8me année, No. 85) 12me année, No. 128 (janvier 1930), Paris, pp. 15-21, ill., diagr.

— Sur le calcul des avions: Détermination des forces extérieures.

L'Aéronautique (L'Aérotechnique, 8me année, Nos. 90, 91), 12me année, No. 133, 134 (juin, juil. 1930), Paris, pp. 213-220, 263-270, ill.

— See Toussaint, A., et E. Carafoli: Théorie et tracés des profils d'ailes sustentatrices.

CARGANICO, VICTOR. Kurzer Bericht über die Geschäftliche Sitzung der XIX. Ordentlichen Mitglieder-Versammlung der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. am 11. September 1930, 14.10 Uhr, in der Aula der Technischen Hochschule Breslau, Uferzeile.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 621-623.

— Kurzer Bericht über den Verlauf der XIX. Ordentlichen Mitglieder-versammlung der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. (WGL) vom 10. bis 13. September 1930, in Breslau.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 18. Heft (29. Sept. 1930), München, pp. 461-469.

CARIA, UGO DE. Counter-propeller.

National Advisory Committee for Aeronautics, Technical Memorandums No. 587, Oct. 16, 1930, Washington, October 1930, pp. 11, ill.

CARLIER, A. H. La photographie aérienne.

Paris, Delegrave, pp. 204, ill.

CARNEVALE, ERNESTO. Ricerca della migliore rotta per un aereo che si approssima ad un batteria nemica.

Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 235-240, ill.

CAROLL, THOMAS. Relative flight safety of the autogiro.

Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, p. 72, ill.

- CARPENTER, DONALD MARSHALL. Aviation engines.
Scranton, Pa., International Textbook Company [1929], three volumes, ill.
- CARR, C. F. See Howland-Flanders, Leonard, and C. F. Carr: Gliding and motorless flight.
- CARRERA JUSTIZ, PABLO. La aviación.
Habana, Editorial Hispano-American [1929], pp. 43, ill.
- Aviation.
Havana, Times of Cuba Press, [1929], pp. 43, ill.
- CARRIERS. See Webb, L. D.: Flying from the "Lexington" and "Saratoga."
- CARROLL, JOHN R. The aircraft rigger's handbook, being extracts from the notes of an "old-timer" airplane builder, rigger and airplane mechanics instructor.
Champaign, ill., College Publishing Company, 1929, pp. 117.
- CARROLL, MITCHELL B. The Warsaw convention.
Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 19, 59-60.
- CARROLL, THOMAS. Progress along conservative lines.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 526-527.
- CARTER, B. C., and N. S. MUIR. Torsional vibration of crankshafts. Beardmore "Tornado" airship engine investigations.
Aer. Res. Comm., Rep. Mem., No. 1303, (E. 39), July 1930, London, 1930, pp. 56, illus., diagrs.
- CARTER, W. G. Flying boat development for speed research.
The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. (1068a-1068c), 65-67, ill.
- CASPARI, WALTER. Der Deutsche Luftfahrzeugausschuss.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 11. Heft (14. Juni 1930), München, pp. 280-281.
- Gewichtzerlegung für Flugzeuge.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 18. Heft (29. Sept. 1930), München, pp. 469-471.
- Internationale Normensitzung im Haag.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 6. Heft (28. März 1930), München, pp. 142-143.
- CASSINIS. The third international meeting of photogrammetry.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, pp. 979-980.
- CASTAGNA, A. Prove su di una pompa ad ingranaggi.
L'Aerotecnica, Vol. 10, N. 7-8 (Luglio-Agosto 1930), (Anno VIII), Roma, pp. 613-628, illus., diagrs.
- CASTLE, B. F. The needs of the private owner as I see them.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, p. 139.
- CATAPULTS. Catapult launching of aircraft.
Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1157, ill.
- See Heinkel: Heinkel-Flugzeug-Katapult K 4 auf dem Schnelldampfer "Europa" des Norddeutschen Lloyd.
- See Webb, L. D.: Off the catapult.
- CATERPILLAR CLUB. See Knowland, Russell: Leaping headlong into space.
Members of the Caterpillar Club have all made emergency leaps.
- CAUDRON. The Caudron C. 232. A French light 'plane to be marketed in Great Britain.
Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, p. 1102, ill.
- CAUNTER. An interesting new engine.
Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, p. 510, ill.

CAUNTER. A two-stroke aero engine. The Caunter radial.

Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, pp. 1158-1159, ill.

CAUNTER, C. F. Light aero engines; a practical manual describing the chief types of light aero engines, and giving instructions for their maintenance. London, Sir Isaac Pitman and Sons., Ltd., 1930, pp. xiii, 288, ill. *

CAVE, C. B. Wireless apparatus for aircraft.

Journ. Roy. Aer. Soc., Vol. 34, No. 237 (Sept. 1930), London, pp. 794-802.

CAYGILL, L. E. *See* Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel experiments on steam condensing radiators.

— *See* Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel tests on Gloster and Supermarine wing radiators.

CAZAUD, R. Recherches sur la fatigue des métaux.

Bulletin Technique, Services Techniques de l'Aéronautique, N. 68 (juni 1930), Paris, pp. 62, ill.

Translated into the Italian. *See* Metals: Ricerche sulla fatica dei metalli.

CAZAUX. *See* Guyomar: Le camp d'instruction de Cazaux.

CAZENEUVE. L'escadrille 3 E-1 et la base de Berre.

Revue des Forces Aériennes, No. 8, mars 1930, Paris, pp. 251-260, ill.

CHAIRS: *See* Brill: Brill airplane chair.

— *See* Hardecker, John L.: The development of the airplane chair.

CHALAIS-MEUDON. Museo de aeronáutica de Chalais-Meudon (Paris): Ibérica, Afio 17, Tomo 2.º, Vol. 34, No. 852 (15 nov. 1930), Barcelona, pp. 294-295.

CHALLE et LARRE BORGES. Raids dramatiques. Challe et Larre Borges traversent l'Atlantique sud.

L'Illustration, 88e, année, No. 4532 (11 jan. 1930), Paris, pp. 43-44, ill.

CHAMBE, RENÉ. La première victoire de Navarre.

Revue des Forces Aériennes, No. 6, 1930, Paris, pp. 4-20, ill.

CHAMBER OF COMMERCE OF THE UNITED STATES OF AMERICA. Committee Aeronautics. Chamber of Commerce air manual.

Washington, D. C., Transportation and Communication Department, Chamber of Commerce of the United States, 1930, pp. 40.

CHANCE. The Chance floodlight.

Flight, No. 1133, Vol. 22, No. 37 (Sept. 12, 1930), London, p. 1026, ill.

CHANUTE, OCTAWE. The crystal gazing of Octave Chanute.

The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 24, 54.

CHAPMAN, THOMAS H. Traveling historic trails by air.

National Aeronautic Magazine, Vol. 8, No. 9 (Sept. 1930), Washington, pp. 33, 36-37, 40-42, 45, 47-48, ill.

— Where veterans find a thrill.

National Aeronautic Review, Vol. 8, No. 4 (April, 1930), Washington, pp. 17, 19, 25.

CHAPUT, JEAN. *See* Langevin, H.: La vie et la mort de Jean Chaput aviateur de chasse.

CHARPENTIER, PAUL. Arbeit und Kampf. Erlebnisse eines deutschen Luftschiff-Ingenieurs.

Straatsburg, Heitz & Cie., 1930, pp. 3, ill.

CHARTS. *See* Stevens, H. L., and A. E. Woodward Nutt: Charts for aircraft performance reduction.

— *See* United States Department of the Navy: Special notice to mariners. One hundredth anniversary number 1830-1930.

- CHASSIS.** *See* Niles, Alfred S.: Airplane chassis design—The shock absorbing unit.
- CHATTANOOGA.** *See* Youngstead, R. W.: Lovell field Chattanooga's new municipal airport.
- CHEMICALS.** *See* Dust-Laying: The use of dust-laying chemicals.
- CHENEY, Robert.** Salesmanager uses plane.
Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 828, 830, ill.
- CHICAGO.** Chicago prepares for great air races.
U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 41-43.
- National Air Races. Chicago—August 23-September 1.
The Sportsman Pilot, Vol. 4, No. 2 (Aug. 1930), New York, pp. 13, 56, ill.
- *See* McReynolds, Charles F.: How Chicago took the air races.
- *See* Taylor, C. Fayette: Chicago base.
- *See* Wines, James P.: The Curtiss-Chicago airport.
- CHICANOT, E. L.** The Northland is proving to be the realm of the airplane.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 45-48, ill.
- CHICHESTER, FRANCIS C.** Solo to Sydney. Introduction by Baron von Zeditz.
London, J. Hamilton, Ltd. [1930], pp. 208, ill.
- CHILE.** *See* James, Earle K.: Chile's national air lines.
- *See* Montgomery, John K.: Chile's aviation progress.
- CHILTON, R.** Airplane engine development and operating reliability.
Journ. Soc. Automotive Engineers, Vol. 26, No. 6 (June 1930), New York, pp. 771-781, ill.
- CHILTON CLASS JOURNAL COMPANY.** Aircraft executives; a mailing list of purchasing, engineering and production officials in American and Canadian aircraft and engine factories.
Philadelphia, Pa., Chilton Class Journal Company, 1930, 49 numbers.
- CHINA.** Elements of aeronautical meteorology.
Academia Sinica National Research Institute of Meteorology, Pei-Chi-Ko, Nanking, China [1930], pp. [81], ill. (In Chinese.)
- Luftverkehr in China.
Zeitschr. Ver. deutscher Ing., Bd. 74, 47 (22. Nov. 1930), Berlin, p. 1620.
- *See* Over, Wing: China as an aeronautic market.
- CHITTY, LETITIA.** *See* Southwell, R. V., and Letitia Chitty: On the problem of hydrodynamic stability.—1. Uniform shearing motion in a viscous fluid.
- CHRISTMAS.** De Christmas eendekker.
Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 8-10, ill.
- CHRISTOPHER, LUKE.** Backstage at the air races.
National Aeronautic Magazine, Vol. 8, No. 9 (Sept. 1930), Washington, pp. 50-53, ill.
- CHRISTOPHER, LUKE, and R. F. DE MAROLLES.** The life history of a world's record. Part 1: From the flying field to Washington, by Luke Christopher.
Part 2: From Washington to Paris, by R. F. de Marolles.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 158-161, ill.
- CHURCHER, B. A. G., and A. J. KING.** Analysis of measurement of noise emitted by machinery.
Journal Institute Electrical Engineer., Vol. 68, No. 397 (Jan. 1930), London, p. 97.
- CIAMBERLINI, U.** Gli strumenti aeronautici di bordo, di navigazione, di controllo del motore.
Milano, U. Hoepli (U. Allegretti), 1930, pp. viii, 208 con due tavole.

CIERVA. *See* Autogiro: La Cierva viene a España a bordo de su autogiro.

— *See* La Cierva.

CIERVA, JUAN DE LA. The autogiro.

Journ. Roy. Aer. Soc., Vol. 34, No. 239 (Nov. 1930), London, pp. 902-921, ill.

— Uses and possibilities of the autogiro.

Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, p. 35.

— *See* Renfro, Robert B.: Juan de la Cierva's windmill.

CINÉCLINOGRAPHE. Le Cinéclinographe Estienne-du Cluzel.

L'Aéronautique (L'Aérotechnique, 8me année, No. 87) 12 me année, No. 130 (mars 1930), Paris, 89-95, ill.

CIRCULATION. *See* Water: Notes complémentaires sur la circulation d'eau et la circulation d'huile.

CIRENAICA. L'aviazione nella Cirenaica. (Novembre 1929-maggio 1930).

Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 405-434, ill.

CIRRUS. The Cirrus American derby.

Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, p. 978.

CITY OF TACOMA. *See* Ogawa, Taitiro: The attempted take-off of the "City of Tacoma" for the trans-Pacific flight at Kasumigaura, Japan.

CITY planning. *See* Nolen, John: Airports and airways and their relation to city and regional planning.

CIVIL aeronautics. *See* Société des Nations: Société des Nations. Comité de coopération entre aéronautiques civiles.

CIVIL aviation. Civil aviation report. Progress in 1929.

Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, pp. 815-817.

— *See* Australia: Civil aviaon in Australia and New Guinea. Review of progress, 1929. Aerodromes and emergency landing fields.

— *See* Canada: Civil aviation in Canada.

— *See* Escailla, H. de l': Le contrôle et la règlementation technique de l'aviation civile.

— *See* Great Britain: Civil aviation in the House of Lords.

— *See* Great Britain: Report on the progress of civil aviation, 1929.

— *See* Gubbins, M. N. T.: The development of civil aviation and night flying.

— *See* Shelmerdine, F. E.: Civil aviation in India, 1929-30.

— *See* South Africa: Civil aviation in South Africa.

— *See* Svehla, George: A survey of civil aviation in the southwest. Part 1: Air transport operations.

— *See* Svehla, George: A survey of civil aviation in the southwest. Part 2: Airports, Manufactures, etc.

CLAGETT, BRICE. The new air mail law.

Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 23-24.

CLAPP, V. O. The formation of ice on aircraft.

Proc. U. S. Nav. Inst., Vol. 56, No. 330 (Aug. 1930), Annapolis, Md., pp. 743-744

- CLARK, KENNETH.** Canada's cities and solitudes lure the air nomad.
National Aeronautic Review, Vol. 8, No. 4 (April 1930), Washington, pp. 26-27, 29, 32, ill.
- CLARK, K. W.** See Jones, E. T., and K. W. Clark: Full scale maximum lift coefficient of R. A. F. 28 section wing.
- CLARK, MILTON T.** Trends in hangar construction.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 100, 102, ill.
- CLARKSON, CHRISTOPHER.** Flying tests of modern light aircraft. II. The Hermes-Avian.
The Aeroplane, Vol. 38, No. 19 (May 7, 1930), London, pp. 850-852, ill.
- CLASSIFICATION.** See Bureau Veritas: Règlement aéronautique.
- CLAUDY, CARL HARRY.** Beginner's book of model airplanes. (They fly!) With illustrations by James T. Berryman.
Indianapolis, The Bobbs-Merrill Company, [1930], pp. xi, 184, ill., diagrs.
- CLAY, WILLIAM C.** See Knight, Montgomery, and William C. Clay: Refrigerated wind tunnel tests on surface coatings for preventing ice formation.
- CLEPHANE, DOUGLAS W.** Introducing American aircraft in foreign countries.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 66-67, 234, ill.
- Planes for big business. Firms rapidly finding company owned airplanes indispensable.
Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 391-393, ill.
- CLERGET.** See Léglise, Pierre: Le moteur Clerget 100 HP à huile lourde.
- CLÉRIOT, MARCEL.** Le radiophare de Bobigny pour la navigation aérienne.
L'Aeronautique (l'Aerotechnique, 8e année, No. 90), 12me année, No. 132, 133 (mai, juin, 1930), Paris, pp. 174-181, 221-226, ill.
- CLIMB.** See Lee, John G.: The climb of the commercial airplane.
- CLOGETT, BRICE.** Air transportation and legal problems.
Aviation, Vol. 28, No. 13 (March 29, 1930), New York, pp. 636-639, ill.
- CLOTHING.** See Byers, Margaretta Manning: Fashions for air and field.
- CLOUDS.** See Dobler, Martin L.: Cloud nomenclature for pilots.
- CLUBS.** Flying clubs.
Air annual of the British Empire 1930, London, pp. 200-202, tabs.
- Flying clubs of the world.
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, pp. 34-35, 54, ill.
- See Muller, J. P.: Exchange clubs aid aviation.
- See Steinmetz, Charles P.: America's first glider club.
- See Turner, C. C.: Flying club progress. Private ownership and maintenance.
- See Williams, Harvey L.: Clubs aid aviation progress.
- CLUZEL.** Un nouvel instrument de navigation: le calculateur du Cluzel.
L'Aeronautique, l'Aerotechnique, 82 année, No. 95), 12me année, No. 138 (nov. 1930), Paris, pp. 401-402, ill.
- COBHAM, ALAN.** Twenty thousand miles in a flying boat.
London, George G. Harrap & Co., Ltd., David McKay Company, 1913, pp. 249, ill.
- Twintig duizend mijlen in een vliegboot.
Amsterdam, Uitgave Scheltens & Giltay.

- CODE. *See* Avico: Avico aviation code . . . compiled and arranged by Acme Code Company . . .
- COGLIOLO, PIETRO. Il registro aeronautico e la sua efficacia giuridica nei rapporti di diritto privato.
Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 277-279.
- COLLAR, A. R. *See* Duncan, W. J., and A. B. Collar: Tail flutter of a particular aeroplane.
— *See* Lock, C. N. H., and A. R. Collar: Exploration of the flow near the screw proposed for the N. P. L. compressed air tunnel.
- COLLEGE flying. *See* Holme, John C., jr.: College sport flying.
- COLLIER'S. The aviation industry and its market; past progress, present trends and future sales, prepared by Collier's the national weekly, New York.
New York, The Crowell Publishing Company, 1930, pp. 42, ill.
- COLLINS, JOHN H. *See* Spanogle, J. A., and John H. Collins: A balanced dia-phragm type of maximum cylinder pressure indicator.
- COLLINS, JOHN H., jr. Alterations and tests of the "Farnboro" engine indicator
National Advisory Committee for Aeronautics, Technical Notes No. 348, Sept. 23, 1930,
Washington, September 1930, pp. 14, ill.
- COLOMBIA. *See* Biedermann, George: Achievements of commercial aviation in Colombia and Ecuador.
- COLSMAN, ALFRED. Probleme der Wirtschaftlichkeit des Luftverkehrs.
Friedrichshafen, Verlag August Linke, 1929, pp. 36.
- COLVIN, F. H. and H. F. The aircraft handbook. A collection of facts and suggestions concerning the construction and care of planes, motors, and instruments for those interested in modern aircraft.
New York, McGraw-Hill, 1929, 4th edition, pp. xi, 690, ill.
- COMITÉ FRANÇAISE DE PROPAGANDE AÉRONAUTIQUE. Ce qu'il faut savoir de l'aviation.
Paris, Bibliothèque Larousse, pp. 146.
- COMMERCIAL aeronautics. Het luchtverkeer bij nacht.
Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 3-4, map.
- La science des transports au service de l'aéronautique marchande. L'aéronautique et les problèmes actuel en matière de transports.
L'Aéronautique, 12me année, No. 132 (mai 1930), Paris, pp. 190-192.
- *See* Australia: Het luchtverkeer in Australië.
- *See* Barker, Fowler W.: Statistical sources for market analysis.
- *See* Becker, Hellmuth: Wirtschaftliche probleme des deutschen luftverkehrs . . .
- *See* Biddlecombe, C. H.: Greater sales effort needed.
- *See* Biedermann, George: Achievements of commercial aviation in Colombia and Ecuador.
- *See* Black, Archibald: Record and trend of the industry.
- *See* Bowen, R. Sidney, jr.: Where is my wandering market to-day?
- *See* China: Luftverkehr in China.
- *See* Collier's: The aviation industry and its market . . .

COMMERCIAL aeronautics. *See* Deutsche Luft Hansa a. g.: Tarif für die beförderung von luftfrachtund flugeisenbahngütern innerhalb Deutschlands sowie von und nach dem europäischen auslande; gültig für die linien der Deutschen Luft Hansa under im anschluss fliegenden ausländischen luftverkehrs-gesellschaften. Ausgabe vom 1. mai 1930 . . .

- *See* Deutsche Luft Hansa a. g.: 10 Jahre deutsche Handelsluftfahrt.
- *See* DeVantery, Eve: Airline fares and passenger traffic.
- *See* Doane, Robert R.: Capital investment in the industry.
- *See* Doane, Robert R.: The industry's income for 1929.
- *See* Doane, Robert R.: Rate of growth of the aircraft industry.
- *See* Edgar-Bonnet, George: Les problèmes de l'aviation marchande.
- *See* Gragg, Charles I.: Marketing problems in the aviation industry.
- *See* Grey, Charles Grey: On trade crusading.
- *See* Hayes, Robert: Selling the private market.
- *See* International Air Traffic Association: De International Air Traffic Association.
- *See* Jambon, Bernard J.-L.: L'état de l'industrie aéronautique aux Etats-Unis.
- *See* James, Earle K.: Chile's national air lines.
- *See* Junior Air Service of America, inc.: Commercial aeronautics—1.
- *See* Kahn, Maurice: L'industrie aeronautique Allemande.
- *See* Knauss: Luftverkehr und Politik.
- *See* Koyemann, A.: Ist das Problem der Rentabilität des Luftverkehrs lösbar?
- *See* Kunkel, John Henry: What is the matter with our advertising?
- *See* Lees, Robert E.: Sales policies and the private plane prospect.
- *See* Luftig, William W.: Financing airplane manufacturers.
- *See* Luftig, William W.: Financing private owners.
- *See* McReynolds, Charles F.: The aircraft market in the West.
- *See* Manning, Leroy: European aeronautics and American foreign sales possibilities.
- *See* Matthias, Joachim: Handelsluftfahrt. Der französische Luftverkehr.
- *See* Mingos, Howard: The birth of an industry.
- *See* Mitchell, L. W., jr.: Operation and analysis of the aviation credit corporation.
- *See* Parker, Willis: Dealers wanted—but what kind?
- *See* Pirath, Carl: Les courants des transports aériens.
- *See* Plesman, A.: De commercieele luchtvaart.
- *See* Putnam, Lawson L.: What it is worth to them?
- *See* Putnam, Russell L.: Selling airplanes to business houses.
- *See* Reeves, Earl: Aviation's place in tomorrow's business.

COMMERCIAL aeronautics. *See* Rocca, Carlo: La navigazione aerea dal punto di vista economico opera insignita col primo premio dall' Istituto Centrale; di Statistica del Regno d' Italia.

- *See* Rogers, Leighton W.: Aviation's contribution to international trade.
- *See* Rogers, Leighton W.: Competition in the world market.
- *See* Rogers, Leighton W.: Developing the foreign aircraft market.
- *See* Russia: Das Luftverkehrsprogramm der Sowjet-Union.
- *See* Savage, E. W.: Consider the buyer.
- *See* Sayre, Daniel: The purchasing department's relation to airline operation.
- *See* Shannon, Homer H.: Breaks records with express traffic.
- *See* Shope, Leslie R.: "Merchandising". The much discussed need of aviation—yet to be properly applied—Who will be the leader?
- *See* Van Dusen, W. I.: That foreign commerce may fly.
- *See* Walter, Franz: Der Flugzeugvertrieb.
- *See* White, C. W.: Selling the de luxe plane market.
- *See* White, Thomas D.: Far eastern airways.
- *See* Willcox, H. Case: Air transportation in Latin America.
- *See* Wronsky, Martin: Deutsche handelsluftfahrt . . . ein vortrag vor dem Institute of Transports und der Royal Aeronautical Society of London.
- *See* Wronsky, Martin: Deutschlands Luftverkehrspolitik und Luftverkehrsbetrieb im Jahre 1929.

COMMERCIAL aviation. *See* Bennett, Richard Rea: Aviation. Its commercial and financial aspects.

- *See* Pollog, Carl Hanns: German commercial aviation in 1929.
- *See* Ramsey, Ligan C.: Avigation in commercial aviation.
- *See* Saint-Denis, Pierre de: L'aviation commerciale et son avenir au Canada.

COMMUNICATION. *Communicazioni da o verso aeroplani in volo.*
Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 133-139.

- *See* Grey, Charles Grey: On Imperial Communications.
- *See* Hoover, Herbert, jr.: Communication problems in scheduled air transportation.
- *See* Jones, R. L., and F. M. Ryan: Abridgment of air transport communication.
- *See* Sibley, Eugene: Aeronautical radio communications.

COMPAGNIE GÉNÉRALE AÉROPOSTALE. *See* Grey, Charles Grey: The technical organisation of the Compagnie Générale Aéropostale.

COMPASSES. Kelvin, Bottomley & Baird, Ltd. Pioneers in design and construction of aircraft compasses.

Air annual of the British Empire 1930, London, pp. 628-635, ill.

- Magneto compass now on market.

Airway Age, Vol. 11, No. 4 (April 1930), New York, p. 564, ill.

- COMPASSES.** *See* Bumstead, A. H.: The Bumstead sun compass.
 — *See* Dévé, Max: La régulation des compas montés sur avions.
 — *See* Hauptmann, Friedrich: Ein Magnet-kompass mit pneumatischer Fernübertragung.
 — *See* Midden van Opmeer, J. P. F. van der: Het gevaar van verandering in de afwijking van het kompas voor het vliegtuig.
 — *See* Möller, W.: Die Entwicklung des Fernkompasses und seine Bedeutung für die automatische Steuerung.
 — *See* Tenani, M.: La bussola magnética in volo.
- COMPER.** The Comper C(LA)7 "Swift" airplane (English). A high-wing single-seat monoplane.
 National Advisory Committee for Aeronautics, Aircraft Circulars No. 108, Feb. 14, 1930, Washington, February 1930, pp. 6, ill.
- COMPER, TENENTE NICHOLAS.** Apparato Comper per assorbire le vibrazioni. Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 560-561, ill.
- COMPRESSION ignition.** *See* Swan, Andrew: Compression-ignition engines.
- COMTE A. C. 3.** The "Comte A. C. 3" military airplane (Swiss). A high-wing semicantilever monoplane.
 National Advisory Committee for Aeronautics, Aircraft Circulars No. 122, July 31, 1930, Washington, July 1930, pp. 7, ill.
- CONGRESO INTERNACIONAL DE NAVEGACIÓN AÉREA.** V Congreso Internacional de Navegación Aérea.
 Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, pp. 13-14.
- CONGRÈS INTERNATIONAL DE LÉGISLATION AÉRIENNE.** Huitième Congrès International de Législation Aérienne du Comité Juridique International de l'Aviation, tenu à Madrid du 29 mai au 2 juin 1928, sous la présidence de son excellence Don Galo Ponte.
 Paris, Per Ordem, 1929, pp. ii, 270.
- CONGRÈS INTERNATIONAL DE LA SÉCURITÉ AÉRIENNE.** Rapports . . .
 Paris, Comité Français de Propagande Aéronautique, 1930, 2 vols., ill., diagrs.
- CONGRESSES.** *See* Berch van Heemstede, I. L. van den: Internationale Luchtvaart-Congressen.
 — *See* H. H.: Van twee luchtvaart-congressen.
 — *See* Sacré, H. Walaart: De organisatie van het Vijfde Internationale Luchtvaart-congres.
 — *See* Veer, E. Th. de: De beteekenis van het Internationale Luchtvaart-Congres.
 — *See* Vogel, J. F. de: De algemeene beteekenis van het Vijfde Internationale Luchtvaartcongres.
- CONNECTICUT.** *See* Sands, A. B.: State control of aviation in Connecticut.
- CONNOR, H. P. MCLEAN.** Navigation on the non-stop flight from New York to Bermuda and return.
 Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 40-43, 182, 186, ill.
- CONSTANTIN.** La stabilité automatique des avions et leur rendement aérodynamique.
 L'Aéronautique (L'Aérotechnique, 8me année, No. 93), 12me année, No. 136 (sept. 1930), Paris, p. 336.

CONSTANTIN. *See* Léglise, Pierre: *La stabilisation automatique au moyen des girouettes Constantin.*

CONSTITUTION. *See* Newman, Arthur L.: *Aviation law and the constitution.*

CONSTRUCTION. *See* Abraham, Martin: *Drähte, Litzen und Seile im Flugzeugbau.*

— *See* Minelli, Carlo: *Sulle tensioni e sulle deformazioni di particolari strutture spaziali ad aste con due cerniere.*

— *See* Schrenk, Martin: *Aufbau und Einzelheiten deutscher Leicht- und Sportflugzeuge.*

— *See* Serragli, G.: *Considerazioni sul momento laterale di un' elica autorotante di costruzione rigida.*

— *See* Teichmann, Alfred: *Einspannwirkung bei Knickstäben in Flugzeug-Fachwerken.*

— *See* Warner, Edward P.: *Building the plane and its engine.*

CONTESTS. Flying contests.

Air annual of the British Empire 1930, London, pp. 197-199.

— *See* Unsere Luftstreitkräfte 1914-1918.

Berlin, C. A. Weller, pp. 560, ill.

CONTINENTAL. The Continental aircraft engine.

U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, p. 51.

CONTROL. *See* Arens: The Arens control.

— *See* Irving, H. B.: Safety and control.

CONTROL forces. *See* Hertel, Heinrich: Determination of the maximum control forces and attainable quickness in the operation of airplane controls.

CONTROL surfaces. Balanced and servo control surfaces.

National Advisory Committee for Aeronautics, Technical Memorandums No. 563, May 1, 1930, Washington, May 1930, pp. 15, ill., diagrs.

CONTROLS. *See* Hertel, Heinrich: Ermittlung der grössten aufbringbaren Steuerkräfte und erreichbaren Geschwindigkeiten der steuerbetätigungen.

— *See* Stevens, H. L.: Testing aeroplane controls.

CONVERSATION. *See* Deane: Comfortable conversation. (The Deane laryngaphone arrangement.)

COOLING. Aeronautical engineering. High-temperature liquid cooling.

Mech. Eng., Vol. 52, No. 1 (Jan. 1930), New York, p. 63.

Review of paper by Gerhardt W. Frank in: Journ. Soc. Automotive Engineers, Vol. 25, No. 4 (Oct. 1929), New York, pp. 329-340, ill.

— *See* Foord, F. A.: Air-cooled aero engines.

— *See* Forsyth, Graham: Water-cooled aero engines.

— *See* Green, F. M.: The resistance of air-cooled engines.

— *See* Lamé, M.: Refroidissement des moteurs à l'éthylène glycol.

— *See* Swan, Andrew: Compression-ignition engines.

COOMBES, L. P., and A. S. CROUCH. The accelerations of a Fairey "Flycatcher" seaplane during acrobatic manoeuvres.

Aer. Res. Comm., Rep. Mem., No. 1288, (Ae. 437), April 1929, London, 1930, pp. 4, ill., diagrs.

COOMBES, L. P. The testing of seaplanes and flying boats.

Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 190-209, ill., diagrs.

- COOMBES, L. P. *See* Garner, H. M. and L. P. Coombes: The determination of the water resistance of seaplanes.
- COOPER, H. J. *See* Bauer, L. H., and H. J. Cooper: Regulating air commerce Article V—Medical.
- COOPER, MABEL C. The airlines and airports of Mexico.
U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 27-28.
- First steps which lead to the first solo.
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 42-43, ill.
- CORD. *See* Abraham, Martin: Drähte, Litzen und Seile im Flugzeugbau.
- CORD, E. L. Low-price plan of merchandising. An explanation of why the Lycoming-Stinson price was made.
Airway Age. Vol. 11, No. 4 (April 1930), New York, p. 538.
- CORLETT, E. H. Weather influence on mapping by airplane. Best time, season and cloud conditions as learned through experience. Effect of special requirements.
Engineering News-Record, Vol. 105, No. 12 (Sept. 18, 1930), New York, pp. 462-463, ill.
- CORNERING. *See* Jennings, W. G.: "Cornering" at high speeds.
- CORROSION. *See* Nelson, William: Protecting flying boats against corrosion.
- *See* Weinig, Fritz: Kavitation als primäre Ursache von Korrosionserscheinungen an Flugzeug-Schwimmkörpern.
- CORTESANI, GIUSEPPE. La responsabilità nel diritto aereo.
Torino, Fratelli Bocca, 1929, pp. 86. Nuova Collezione di Opere giuridiche, N. 250.
- COST. *See* Irwin, R. Randell: Price isn't everything. (Prices of approved airplanes.)
- COSTA, MARCO ANTONIO. *See* Italy: L'aeronautica nelle città italiane. Napoli II.—Il primo napoletano in pallone.—Ascensioni a Napoli avvenute in vari tempi.—I saggi aeronautici dell' abate Professor Vincenzo Curzio (1805) e del tenente colonnello del Genio Marco Antonio Costa (1837).
- COSTES. *See* Ll.: Costes.
- COSTES, DIEUDONNÉ. Deux records du monde.
Paris, La Nouvelle Revue Critique, 1930, pp. 228, ills., map.
- The first non-stop flight from Paris to New York.
Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 50-52, ills., map.
- *See* Seyffardt, H. A.: Nieuwe plannen van Dieudonné Coste.
- COSTES et BELLONTE. Primer viaje en avión desde Europa al continente norteamericano.
Iberica, Año 17, Nám. 857 (20 dic. 1930), Barcelona, pp. 372-373, map, ill.
- *See* Franck, P.: La traversée de l'Atlantique par Costes et Bellonte.
- COTTON, F. T. *See* Fenning, R. W., and F. T. Cotton: Experiments on the ignition of gases by sudden compression.
- COTTON, HARRY E. Strength and arrangement of pipe for airport drainage systems. A discussion of the fundamentals of such drainage. Together with tabular data for calculating plane impact effects.
Engineering News-Record, Vol. 104, No. 22 (May 29, 1930), New York, pp. 887-888, ill., tabs.
- COUNTER-PROPELLER. *See* Caria, Ugo de: Counter-propellor.
- COUNTY OF LONDON. *See* Robertson, F. A. de V.: No. 601 (County of London) (Bomber) Squadron, A. A. F.

- COURNOT, JEAN. *See* Grard, Charles Albert Marie, and Jean Cournot: Métaux et alliages . . .
- COURRÈGELONGUE, J., et H. MAUGEIN. Hydrodynamique expérimentale. Sur quelques expériences d'auto-oscillation et d'autorotation de plaques immergées. C. R. Acad. Sci., T. 191, No. 2 (6 juil. 1930), Paris, pp. 90-92, ill.
- COURTNEY, C. L. The strategic mobility of air forces. Air annual of the British Empire, 1930, London, pp. 21-32. Aeroplane, Vol. 38, No. 5 (Jan. 29, 1930), London, pp. 184-185.
- COURTNEY, FRANK T. The future of air navigation. Aviation, Vol. 29, No. 5 (Nov. 1930), New York, pp. 264-268, illus.
- COUSIN, J. La locomotion aérienne de l'homme, d'après le vol des oiseaux. Paris, Librairie des Sciences aéronautiques, F.-Louis Vivien, éditeur.
- COVERING. *See* Thivat, Anthony. The covering of curved surfaces.
- COVINGTON, G., jr. Short cuts. Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, p. 1564, ill.
- COWIE, ROBERT E. M. Via air . . . shoes and ships and sealing wax. National Aeronautic Magazine, Vol. 8, No. 12 (Dec. 1930), Washington, pp. 31-35, ill.
- COWLEY, W. L., and SYLVIA W. SKAN. A simplified analysis of the stability of aeroplanes. Aer. Res. Comm., Rep. Mem., No. 1333 (Ae. 465), March 1930, London, 1930, pp. 13.
- A study of polynomial equations. Aer. Res. Comm., Rep. Mem., No. 1325 (Ae. 459), February, 1930, London, 1930, pp. 20, tabls.
- COWLEY, W. L., and R. WARDEN. Tests of models of high-speed seaplanes for the Schneider trophy contest of 1927. Section I. Aer. Res. Comm., Rep. Mem., No. 1296 (Ae. 430), November 1927, London, 1930, pp. 62, ills., tabls., diagrs.
- Tests of models of high-speed seaplanes for the Schneider trophy contest of 1927. Section II. Tests of the Gloster IV models. Aer. Res. Comm., Rep. Mem., No. 1297 (Ae. 431), February 1928, London, 1930, pp. 48, ills., tabls., diagrs.
- Tests of models of high-speed seaplanes for the Schneider trophy contest of 1927. Section 3.—Tests on the Crusader models. Aer. Res. Comm., Rep. Mem., No. 1298 (Ae. 432), September 1928, London, 1930, pp. 35, ills., tabls., diagrs.
- Tests on quarter-scale models of high-speed seaplanes for the Schneider trophy contest of 1927. Section IV. Comparison with full scale and conclusions. Aer. Res. Comm., Rep. Mem., No. 1299 (Ae. 433), October 1929, London, 1930, pp. 32, diagrs., tabls.
- COWLING. *See* Gough, Melvin N.: Effect of the angular position of the section of a ring cowling on the high speed of an XF7C-1 airplane.
- *See* Green, F. M.: The resistance of air cooled engines.
- *See* Schey, Oscar W., Ernest Johnson, and Melvin N. Gough: Comparative performance obtained with XF7C-1 airplane using several different engine cowlings.
- *See* Schey, Oscar W., and Arnold E. Biermann: The effect of cowling on cylinder temperatures and performance of a Wright J-5 engine.

- COWLING. *See* Townend, H. C. H.: Reduction of drag of radial engines by the attachment of rings of aerofoil section, including interference experiments of an allied nature, with some further applications.
- *See* Townend, H. C. H.: The Townend ring.
- COWLS. Wind tunnel tests of Venturi type cowls and engine nacelles suitable for multi-engine airplanes.
 Air Corps Information Circular, Vol. 7, No. 647 (March 1, 1930), Washington, United States Government Printing Office, 1930, pp. 16, ills., diagrs.
 Air Corps Technical Report No. 3133.
- COX, H. L. *See* Gough, H. J., and H. L. Cox: The behaviour of a single crystal of antimony subjected to alternating torsional stresses.
- *See* Gough, H. J., and H. L. Cox: Further experiments on the behavior of single crystals of zinc subjected to alternating torsional stresses.
- CRANKSHAFTS. *See* Matthaes, Kurt: Kurbelwellenbrüche und Werkstofffragen.
- *See* Stieglitz, Albert: Neuere Ergebnisse auf dem Gebiet der Kurbelwellenschwingungen.
- CRARY, HAROLD. Boeing experiment in specialized training is meeting a definite public demand.
 U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 38-39, ill.
- Things learned after 9,000,000 miles of flying.
 U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, p. 32.
- CRAWFORD, O. G. S. Air photographs of the middle east.
 The Geographical Journal, Vol. 73, No. 6 (June 1929), London, pp. 497-.
- Ordnance survey professional papers. New Series No. 12. Air photography for archaeologists.
 Published by order of the Director General, Ordnance Survey, under the authority of the Ministry of Agriculture and Fisheries. London, H. M. S. O., Southampton, pp. 44, ill.
- CROCCO, G. ARTURO. Elementi di aviazione.
 Roma, Ministero dell'aeronautica, 1930, ills., diagrs.
- Meccanica. Considerazioni sulla dell'aeroplano nella nebbia.
 Atti della Reale Accademia Nazionale de Lincei Anno 326, 1929 (VII), series sesta. Renid conti, Vol. 9, fasc. 1, Roma, 1929 (VII), pp. 25-29.
- CROCÉ-SPINELLI, JOSEPH. *See* Hegener, Henri: De noodlottige hoogtevaart van de "Zenith."
- CROCHU, M. La manœuvre et l'aviation de renseignement.
 Revue des Forces Aériennes, No. 16, nov. 1930, Paris, pp. 1287-1304, tabs., maps.
- CROSSLAND, HUGH J. The trans-Atlantic odds—6 to 1 in your favor.
 Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Cal., pp. 42-44, ill.
- CROUCH, A. S. *See* Coombes, L. P., and A. S. Crouch: The accelerations of a Fairey "Flycatcher" seaplane during aerobatic manoeuvres.
- CROWELL, MARION BARTON. *See* Williams, Archibald: Conquering the air; the romance of the development and use of aircraft. Revised and enlarged by Marion Barton Crowell.
- CROYDON. The imperial conference at Croydon. A concentrated extract of Hendon.
 Flight, No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, pp. 1188-1190, ills.
- *See* London: London's central airport.
- CRUISADER. Un nuovo velivolo americano tipo "Cruisader."
 Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 147-148, ill.

CUBA. Reglamento de navegacion aerea civil sobre el territorio de la Republica de Cuba y sus aguas jurisdiccionales . . . y modificaciones y aclaraciones al mismo que se han dictado hasta el 4 de diciembre de 1928, por decretos, resoluciones y ordenes del Estado mayor del Ejercito.

Habana, Imprenta del Ejercito, 1929, pp. iv, 44.

— See Allen, C. B.: *Sky road to Cuba*.

— See Hammond, William C.: *Flying the air route to Cuba*.

CURRAN, JOHN W. See Zollman, Carl: *Cases on air law*.

CURRENTS of air. See Hankin, E. Hanbury: *Descending currents*.

CURRY, MANFRED. Wind and water.

London, Country Life, Ltd., pp. 28, illus.

CURTIS PUBLISHING COMPANY. The aviation industry; a study of underlying trends.

Philadelphia, The Advertising Department, The Curtis Publishing Company, 1930, pp. 176, illus., diagrs.

CURTISS. Curtiss-Bleeker helicopter.

Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 110-112, illus.

— See Bakker, G. E.: *Curtiss-fabrieken*.

— See Brown, William G.: The Guggenheim safety competition tests and the Curtiss "Tanager".

— See Guggenheim: Curtiss awarded first Guggenheim prize amounting to \$100,000.

— See Helicopters: Curtiss-Bleeker helicopter.

— See Schneider: Curtiss Conqueror, Type G V 1570 600 PS, die Motoren der Do X.

— See Stimson, Thomas E., jr.: The safest plane.

— See Trailing edge: Fortschritte der Flugsicherheit. Die Erfolge des Guggenheim-Sicherheitswettbewerbs.

— See Webb, L. D.: The eleventh annual Curtiss Marine Trophy Race.

— See Wines, James P.: The Curtiss-Chicago airport.

CURTISS, GLENN HAMMOND. Glenn H. Curtiss.

L'Aerophile, 38e année, No. 8 (15 août 1930), Paris, p. 245, ill.

— Glenn Hammond Curtiss honoured.

Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, p. 837, ill.

— See Hegener, Henri: De baanbrekers der dynamische luchtvaart XVIII. Glenn Hammond Curtiss.

— See K.: La muerte de Curtiss.

— See Seely, Lyman J.: Flying pioneers at Hammondsport, New York.

— See Zahm, Albert Francis: Some memories of Mr. Curtiss.

CURTISS-WRIGHT. See Dobbins, R. N.: Maintenance at Valley Stream, N. Y. Curtiss-Wright repair shop has modern equipment for rebuilding all types of engines.

CURTISS-WRIGHT SALES CORPORATION. Curtiss-Wright aircraft sales manual.

New York City, Curtiss-Wright Sales Corporation, 1930, one volume, ill., diagr.

Manual No. 199.

CURZIO, VINCENZO. *See* Italy: *L'aeronautica nelle città italiane.* Napoli II.—Il primo napoletano in pallone.—Ascensioni a Napoli avvenute in vari tempi.—I saggi aeronautici dell'abate Professor Vincenzo Curzio (1805) e del tenente colonnello del Genio Marco Antonio Costa (1837).

CUSHING, R. K. Controllability at low speeds and full-scale measurement of lift and drag of Parnall "Peto" fitted with R. A. F. 15 and R. A. F. 31 section wings (slotted and unslotted).

Aer. Res. Comm., Rep. Mem., No. 1320 (Ae. 456), January 1930, London, 1930, pp. 11, ill., diagrs., tabls.

CUSHMAN, FRANK. *See* United States Federal Board for Vocational Education: Vocational training for airplane mechanics . . .

CUTHELL, CHESTER W. The scope of state aeronautical legislation.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 521-528.

CYPRIUS. By Cyprus to the East.
The Aeroplane, Vol. 39, No. 16, (Oct. 15, 1930), London, pp. 879-882, ill.

D

D. Per Aviolanda-vliegboot op zoek naar een rif.

Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, pp. 41-43, ill.

D., CH. D'Allemagne en Amérique.

L'Aéronautique, 12me année, No. 136 (sept. 1930), Paris, p. 351, ill.

— Le congrès de la Fédération Nationale Aéronautique.

L'Aéronautique, 12me année, No. 134 (juil. 1930), Paris, p. 280, ill.

— Notes sur la disposition générale des cabines.

L'Aéronautique, 12me année, No. 133 (juin 1930), Paris, pp. 210-212, ill.

— Protection météorologique de la ligne San Francisco-Los Angeles par un réseau spécialisé.

L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, pp. 149-150, ill.

— Le style Breguet en aviation.

L'Aéronautique, 12me année, No. 135 (août 1930), Paris, pp. 309-310, ill.

DANGERS. *See* Koppe, Heinrich: *Von den Gefahren des Luftmeeres.*

DANIEL GUGGENHEIM FUND. The Daniel Guggenheim international safe aircraft competition; final report January 31, 1930.

New York City, The Daniel Guggenheim Fund for the Promotion of Aeronautics 1930, pp. 147, ill., diagrs.

— Equipment used in experiments to solve the problem of fog flying; a record of the instruments and experience of the Fund's full flight laboratory.

New York City, The Daniel Guggenheim Fund for the Promotion of Aeronautics, inc., 1930, pp. 57, ill., diagrs.

— Solving the problem of fog flying; a record of the activities of the fund's full flight laboratory to date.

New York City, The Daniel Guggenheim Fund for the Promotion of Aeronautics, inc., 1929, pp. ii, 52.

— *See* Guggenheim, Daniel.

— *See* Spaulding, Roland H.: Report; problems of aeronautics in the schools, a course given during the 1928 summer session, School of Education, New York University, under the auspices of the Daniel Guggenheim Fund Committee on Elementary and Secondary Aeronautical Education.

DANILOVICS, P. DE, et V. DE SZONDY. Les infractions à la loi pénale commises à bord des aéronefs.

Droit Aérien, Juillet, Août, Septembre 1930, Paris, pp. 402-414.

- D'ANNUNZIO, GABRIELE. *See* Mendoza, Saverio Laredo de: Gabriele D'Annunzio, aviatore di guerre. Documenti e testimonianze raccolti dell'aviatore Saverio Laredo de Mendoza.
- DA RIOS, L. S. Corso di aerotechnica. Parte I.—Nozioni fondamentali. Milani di Padova, Edito dalla Cassa Dott. Antonio, pp. 71, ill.
- DARMON, J. Dictionnaire des estampes & livres illustrés sur les ballons & machines volantes. Montpellier, H. Barral.
- D'ASCANIO. The D'Ascanio helicopter. A successful Italian experiment. Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, p. 1249, ill.
- See G., R.: The D'Ascanio helicopter.
- DAVIS, H. H. Running a flying school. Airways, Vol. 6, No. 11 (Aug. 1930), London, pp. 419-420, ill.
- DAVIS, MERLIN. *See* Peters, Melville F., Wayne L. Summerville, and Merlin Davis: An investigation of the effectiveness of ignition sparks.
- DAVIS, WALTER C. *See* Warrington, C. H.: The Davis monoplane.
- DAVIS, W. F. In-line versus radial aircraft engines. Journ. Soc. Automotive Engineers, Vol. 27, No. 4 (Oct. 1930), New York, pp. 451-453, 454-458.
- DAVIS, W. JEFFERSON. Aeronautical law. Los Angeles, Parker, Stone & Baird Co., 1930, pp. 451. Reviewed in Georgetown Law Journal, Vol. 18, No. 4 (May 1930), Washington, D. C., pp. 406-409, by Allen J. Krouse.
- Liability of aircraft carriers, owners and operators of aircrafts. Georgetown Law Journal, Vol. 18, No. 3 (March 1930), Washington, D. C., pp. 241-264.
- DAVIS, WARREN J. The state regulation of aircraft common carriers. Air Law Review, Vol. 1, No. 1 (Jan. 1930), New York, pp. 47-61.
- DAVISON, F. TRUBEE. Aviation and preparedness. National Aeronautic Review, Vol. 8, No. 4 (April 1930), Washington, pp. 15-16.
- Glancing back at 1929. As seen by the Army. Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 60-61, port.
- DAY, CHARLES HEALY. Work for safety—research on ultra-light alloys. Aviation, Vol. 28, No. 11 (March 15, 1930), New York, p. 524.
- DEANE. Comfortable conversation. (The Deane laryngaphone arrangement.) The Aeroplane, Vol. 39, No. 18 (Oct. 29, 1930), London, p. 1001, ill.
- DEANE, GERALD N. The purchase of naval and military aircraft. The Aeroplane, Vol. 39, No. 19 (Nov. 5, 1930), London, p. 1047.
- DECKARD, H. C. Plane operation in Alaskan area is largely successful despite many handicaps. Airway Age, Vol. 11, No. 8 (July 1930), New York, pp. 1063-1067, ill.
- DEEDS, ED. Mist in the pilot's eyes. The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 18-19, ill.
- DEFOSSEZ, L. *See* Jaquerod, A., L. Defossez, and H. Mügeli: Experimental research on the friction of pivots.
- DE HAVILLAND. Care and maintenance of the 100-h. p. D. H. Gipsy I aero engine. Edgware, Eng., The De Havilland Aircraft Company, Ltd. [1930?], pp. 18, ill., diagrs.
- The De Havilland Aircraft Co., Ltd. Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, p. 72.

- DE HAVILLAND.** The De Havilland Aircraft Company, Ltd.
Air annual of the British Empire 1930, London, pp. 456-467, ill.
- The De Havilland "Moth three" airplane (British). A high-wing commercial monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 117, May 23, 1930, Washington, May 1930, pp. 10, ill.
- The new De Havilland policy.
Aeroplane, Vol. 38, No. 17 (April 29, 1930), London, p. 756.
- Notes on the rigging, care and maintenance of the D. H. Puss moth 2-3 seater light aeroplane fitted with 120-h. p. D. H. Gipsy three engine . . .
Edgware, Eng., The De Havilland Aircraft Co., Ltd., 1930, pp. 25.
- On De Havilland history.
Aeroplane, Vol. 38, No. 14 (April 2, 1930), London, pp. 563-564.
- Rigging instructions and notes on the general maintenance of Gipsy moth two-seater light aeroplanes (D. H. type 60 G.).
Edgware, Eng., The De Havilland Aircraft Co., Ltd., 1930, pp. 17, ill.
- DELANNEY.** L'attaque aérienne massive du territoire.
Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 499-523, ill., maps, tabl.
- DELSEMBRE.** La part de la météorologie dans la victoire de Costes et Bellonte.
L'Aérophile, 38me année, No. 10 (15 oct. 1930), Paris, p. 289, 293-294.
- DELLAERT, U. F. M.** De Gemeente-luchthaven van Amsterdam.
Het Vliegveld, 13de Jaarg., Nos. 11, 12 (Nov.-Dec. 1929), Amsterdam, pp. 406-411, 436-443, ill.
- DELLINGER, JOHN HOWARD, H. DIAMOND, and F. W. DUNMORE.** Development of the visual type airway radiobeacon system.
Bureau of Standards, Journal of Research, Vol. 4, No. 3 (March 1930), Washington, pp. 425-459, ill.
- DE MOK.** See J.: Het 12 ½ jarig bestaan van het marine-vliegkamp "De Mok."
- DE MAROLLES, R. J.** The Breguet 270 general-purpose military airplane (French). A two-seat all-steel sesquiplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 127, Sept. 26, 1930, Washington, September 1930, pp. 15, ill.
- DENHAM, T. S.** Speed. With an introduction by Professor A. M. Low.
London, The Pilot Press [1929], pp. xiii, 112, ill.
- DENMARK.** Bekendtgørelse fra Ministeriet for Offentlige Arbejder om bevagelige radiotelegraf og telefonstationer om bord i skibe eller luftfartøjer.
København, Trykt hos J. H. Schultz a/s., 1930, pp. 21.
- Selling by air in Denmark.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1466-1467, ill.
- DENT, PAXTON H.** Eagle hunting for sport and profit.
Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Cal., p. 47.
- DEPARTMENT OF COMMERCE.** See MacCracken, William P., jr.: The Department of Commerce position in accident publicity.
- See Schmeckebier, Laurence F.: The aeronautics branch, Department of Commerce.
- See United States Department of Commerce.
- DESCHAMPS.** L'aviation au Sahara et les voies de pénétration aérienne dans le Sahara oriental.
Revue des Forces Aériennes, No. 15, oct. 1930, Paris, pp. 1191-1213, ill., map.

- DESIGN. *See* Dunlap, W. M.: Aluminum welding in aircraft design.
- *See* Huntington, Dwight: Design of low-priced airplanes.
- *See* Osborn, Robert R.: Future aircraft-design trends.
- *See* Prentice, James: The influence of aircraft design on the trend of motor vehicle construction.
- *See* Radcliffe, Frank: Elements of detail design.
- DE SILVA, WOODRUFF. The municipal airport of Los Angeles.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 96, 98, 102, illus.
- DESOUTTER. Desoutter Mark II.
Flight, No. 1133, Vol. 22, No. 37 (Sept. 12, 1930), London, pp. 1011-1014, illus.
- DETROIT. Air terminals—airports and landing fields in Detroit metropolitan area. City of Detroit, Department of Public Works.
Detroit, 1930, pp. 32, ill.
- The all American aircraft show.
Airway Age, Vol. 11, No. 4, 5 (April, May 1930), New York, pp. 511-517, 673-674, ill.
- *See* Bowen, R. Sidney, jr.: Here and there at the Detroit affair.
- *See* Nevill, John T.: The new Detroit city airport.
- *See* Numann, Fief: De All-American Aircraft Show te Detroit.
- *See* Scupholm, Ross C.: Detroit show big success.
- DETROIT AIRCRAFT CORPORATION. U. S. Navy ZMC-2 . . . world's first metal-clad airship, constructed at Grosse Ile airport, Detroit, for the U. S. Navy, by the Aircraft Development Corporation, Division of Detroit Aircraft Corporation.
Detroit, Speaker Hines Printing Co., 1929, pp. 31, illus.
- DETTMANN, L. Mit dem Zeppelin nach Amerika. Das Wunder von Himmel und Ozean.
Berlin, Verlag Reimar Hobbing, 1929, pp. 145, ill.
- DEUBLE, N. L. Modern aircraft engine steels.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 192-196, ill.
- DEUEL, JOHN VANDERVEER. Speed wings.
New York, London, The Century Co., 1930, pp. x, 223, ill.
- DEUTSCHE LUFT HANSA A. G. Plane facts. Deutsche Luft Hansa (The German airways).
Berlin, Print. by Gebr. Radetzki, 1930, pp. 15, illus.
- Tarif für die beförderung von luftfracht- und flugeisenbahngütern innerhalb Deutschlands sowie von und nach dem europäischen auslande; gültig für die linien der Deutschen Luft Hansa und der im anschluss fliegenden ausländischen luftverkehrsgesellschaften. Ausgabe vom 1. mai 1930. . . .
Berlin, E. S. Mittler und Sohn, Buch-druckerei g. m. b. h., 1930, pp. 18, tabs.
- 10 jahre deutsche handelsluftfahrt.
Berlin, 1930, pp. 42, illus.
- DEUTSCHE VERSUCHSANSTALT FÜR LUFTFAHRT, e. v. Vorläufige belastungsannahmen für die festigkeitsberechnung von flugzeugen--- Dezember 1930.
Berlin-Adlershof, Deutsche Versuchsanstalt für Luftfahrt, e. v., 1930, pp. 10, illus., diagrs.
- *See* Hoff, Wilh: Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt e. v., Berlin-Adlershof.
- *See* Seewald, F.: Deutsche Versuchsanstalt für Luftfahrt im Jahre 1929/30.

- DEVANTERY, EVE. Airline fares and passenger traffic.
Aviation, Vol. 29, No. 2 (Aug., 1930), New York, pp. 60-62, maps.
- DÉVÉ, MAX. La régulation des compas montés sur avions.
Revue des Forces Aériennes, No. 12, juil. 1930, Paris, pp. 821-828, diagrs.
- DEVELOPMENT. See Blee, Harry H.: Aeronautic development.
- DEVÈZE. Le tir en avion sur objectif aérien.
Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 594-624, ill.
- DEWEY, N. S. See Simmons, L. F. G., and N. S. Dewey: Photographic records of flow in the boundary layer.
- DIAMOND, HARRY. Applying the visual-modulation type radio range to the airways.
Bureau of Standards, Journal of Research, Vol. 4, No. 2 (Feb. 1930), Washington, pp. 265-287, ill., diagrs., tabls.
- A course-shift indicator for the double-modulation type radiobeacon.
Bureau of Standards, Journal of Research, Vol. 3, No. 1 (July 1929), Washington, p. 10, ill., diagrs.
- DIAMOND, HARRY, and F. G. GARDNER. Engine-ignition shielding for radio reception in aircraft.
Bureau of Standards, Journal of Research, Vol. 4, No. 3 (March 1930), Washington, pp. 415-424, ill.
- DIAMOND, HARRY, and FRANCIS WINKLEY DUNMORE. A radiobeacon and receiving system for blind landing of aircraft.
United States Bureau of Standards, Journal of Research, Vol. 5, No. 4 (Oct. 1930), Washington, pp. 897-931, ill., diagrs.
- DIAMOND, HARRY, and F. G. KEAR. A 12-course radio range for guiding aircraft with tuned reed visual indicator.
Bureau of Standards, Journal of Research, vol. 4, No. 3 (March 1930), Washington, pp. 351-369, ill.
- DIAMOND, HARRY. See Dellinger, John Howard, H. Diamond, and F. W. Dunmore: Development of the visual type airway radiobeacon system.
- DÍAZ ARQUER, GRACIANO, y PEDRO VINDEL. Historia bibliográfica e iconográfica de la aeronáutica en España, Portugal, países hispano-americanos y Filipinas desde los orígenes hasta 1900--- con un prólogo de Emilio Herrera.
Madrid, P. Vindel, 1930, pp. xvii, 76, ill.
- DICTIONARY. See Vanièr, J.: Dictionary of aeronautical terms.
- See White, Thomas D.: Acrobatics on paper or how to write a Chinese dictionary.
- DIESEL engines. Diesel developments abroad.
Airway Age, Vol. 11, No. 4 (April 1930), New York, p. 505.
- Dieselmashinen IV.
Sonderheft der VDI-Zeitschrift. Berlin, VDI-Verlag, 1929, pp. iv, 104, ill.
- The Junkers heavy-oil aero engine.
Engineering, Vol. 129, No. 3352 (April 11, 1930), London, pp. 471-473, ill.
- Il motore Diesel-Packard.
Riv. Aeron, Anno 6, N. 8 (Agosto 1930), Roma, pp. 373-374.
- Scavenging and supercharging blower developed for Diesel aircraft engine.
Automotive Ind., Vol. 63, No. 2 (July 12, 1930), New York, pp. 47-48, ill.
- See Bielefeld, Ernst: Doppeltwirkender Zweifakt-Luftfahrzeug-Diesel-motor.

- DIESEL engines. *See* Ford: Ford transport equipped with three Packard Diesel radial air-cooled motors.
- *See* Gasterstädt: Development of the Junkers-Diesel aircraft engine.
- *See* Hausfelder, L.: The Junkers Diesel plane.
- *See* Lorenzen, Christian: The Lorenzen gas turbine and supercharger for gasoline and Diesel engines.
- *See* Neumann, Kurt: Diesel-chamber investigations ignition-chamber engines.
- *See* Ordonyez, C.: El motor Diesel en la aviaci^{on}.
- *See* Packard: The Packard Diesel.
- *See* Packard: The Packard Diesel engine.
- *See* Packard: The Packard Diesel is ready and approved.
- *See* Packard: Der Packard-Dieselflugmotor.
- *See* Woolson, L. M.: The Packard Diesel engine.
- DIFESE, (Le).** Le difese contro gli aerei e contro i gas.
Roma, Ist. poligr. Stato, 1930, pp. 48. Manualetti di tecnica militare a cura della riv. Esercito e Nazione, No. 3.
- DIJK, EVERT VAN.** Over den ocean.
Amsterdam, Uitgave Scheitens & Giltay.
- *See* H.: De terugkeer van Evert van Dijk.
- DILLE, HARRY C.** Practical aviation and flight instructions.
Kansas City, 1930, pp. 127, illus., diagrs.
- DI MAIO, RAFFAELLO.** Altimetro barotermico D. M.
Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 23-27, ill.
- DINES, L. H. G.** Dines balloon meteorograph and the method of using it.
London, 1929, pp. iv, 47, illus. (Met. off. 321.)
- DINGLINGER.** Luftfahrt und Polarforschung.
Luftschau, 3. Jahrg., Nr. 6 (24. März 1930), Berlin, p. 46.
- DIXON, CHARLES.** Amy Johnson—lone girl flyer.
London, S. Low, Marston & Co., Ltd. [1930], pp. vii, 151, ill., map.
- Flying equipment. Irvin parachutes.
Air annual of the British Empire 1930, London, pp. 662-664, ill.
- The parachute in the Royal Air Force.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 29-30, ill.
- Parachutes for airmen.
London, Sir Isaac Pitman & Sons, Ltd., 1930, pp. 124, 32, illus.
- Parachuting.
London, S. Low, Marston & Co., Ltd., 1930, pp. viii, 216, illus.
- DOANE, ROBERT R.** Aircraft demand past, present and future.
Aviation, Vol. 28, No. 3 (Jan. 18, 1930), New York, pp. 97-103, diagrs., tabls.
- Capital investment in the industry.
Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 897-902, diagrs., tabls.
- The industry's income for 1929.
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 75-80, diagrs., tabls.
- Rate of growth of the aircraft industry.
Aviation, Vol. 28, No. 15 (April 12, 1930), New York, pp. 755-757, diagrs., tabls.

- DOBBINS, R. N. Maintenance at Valley Stream, N. Y. Curtiss-Wright repair shop has modern equipment for rebuilding all types of engines.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1179-1181, ill.
- DOBBLER, MARTIN L. Cloud nomenclature for pilots.
Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, p. 41, ill.
- Interpreting the weather map.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 59, 262, map.
- Thunderstorms and line-squalls.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, p. 53, ill.
- The weather factor in flying.
The Sportsman Pilot, Vol. 3, No. 1, 3 (Jan., March, 1930), New York, pp. 40, 45.
- DÖRING, HERMANN. Convention concernant le contrat de transport aériens.
Droit Aérien, Juil. Août, Sept. 1930, Paris, pp. 415-433.
- Neuordnung der Haftflicht im Lufttransportwesen.
Luftschau, 3. Jahrg., Nr. 2 (24 Jan. 1930,) Berlin, pp. 12-13.
- DOLCH, E. Motorad- und Leichtflugzeugmotoren. Konstruktion und Berechnung.
Bd 1-2, Berlin, 1929.
- DOLLFUS, CHARLES. Le deuxième challenge international des avions de tourisme.
L'Aéronautique, 12me année, No. 136 (sept. 1930), Paris, p. 323.
- Henry de La Vaulx.
L'Aéronautique, 12me année, No. 133 (juin 1930), Paris, pp. 205-206, port., ill.
- Notes sur l'histoire des freins d'avions.
L'Aéronautique, 12me année, No. 135 (août 1930), Paris, p. 310, ill.
- Les traversées du "R. 100".
L'Aéronautique, 12 me année No. 136 (Sept. 1930), Paris, pp. 346-347, ill.
- See Hirschauer, L., et Ch. Dollfus: L'année aéronautique 1929-1930.
- DOMINIONS. Aircraft production in the dominions. Canada, Australia.
Air annual of the British Empire 1930, London, pp. 697-702.
- DOOLEY, L. R. A new sales policy for 1930. A discussion of the advantages of a change in the present system.
Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 388-390, ill.
- DOOLITTLE, JAMES H. Flying in fog.
Journ. Soc. Automotive Eng., Vol. 26, No. 3 (March 1930), New York, p. 318.
- See Barker, Samuel: Outside loops.
- DOORS. See Landis, George G.: New motor driven hangar doors.
- DOPES. Airplane dopes, doping and dope room requirements.
Air Corps Information Circular, Vol. 7, No. 655 (Dec. 1, 1930), Washington, United States Government Printing Office, 1930, pp. 19, ill.
- Air Corps Technical Report No. 3290.
- See Dunstan, A. E., and F. B. Thole: Fuels and dopes for aircraft engines.
- See McCutcheon, W. W.: Airplane dopes and lacquers and their application.
- DORNIER. Das Dornier-Flug-oot Do-S.
Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 274-277, ill.
- See Gustosa, Corrado: Structural details of the giant Dornier seaplane "Do X."

DORNIER. *See* Louis, Richard: *Das Dornier-Flugschiff. The Dornier Flying-Ship Do-X.*

Do-S. *De Do-S.*

Het Vliegveld, 14de Jaarg, No. 12 (Dec. 1930), Amsterdam, pp. 411-413, ill.

— *See* Dornier: *Das Dornier-Flugboot Do S.*

DOUGLAS. *See* Rhode, Richard V., and Eugene E. Lundquist: *The pressure distribution over a Douglas wing tip on a biplane in flight.*

DOUGLAS, G. P., W. G. A. PERRING, and R. A. FAIRTHORNE. *Wind tunnel tests with high tip speed airscrews. Experimental investigation of blade twist under load.*

Aer. Res. Comm., Rep. Mem., No. 1272 (Ae. 418), May 1929, London, 1930, pp. 7, ills., tabls.

DOUHET, GIULIO. *La guerra del 19 . . .*

Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 409-502, map.

— *Der Krieg im Jahre 19 . . .*

Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 261-268.

DOWN, R. E. *The "Cape Codder" sailplane.*

Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 134-136, ills.

— *The "Dragon fly" model.*

Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 144-146, ills.

— *Glider flying at Cape Cod.*

Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 61, 170, ills., map.

— *Horrocks' twin pusher canard.*

Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, pp. 154-156, ills.

— *The Junior autogiro.*

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 202-204, ills.

— *Kwei "Fleming-Williams" racer.*

Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 100-102, ills.

— *Mechanical launching of gliders.*

Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 114-115, 183, ills., diagr.

— *Tournament stunt plane.*

Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 122-123, 114, ills.

— *Watkins "Canard" type "Floater."*

Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 132, 134, 136, ills.

DOWNEY, H. C. *Airplane maintenance in the tropics. The problems of wood decay and metal corrosion and how they are met.*

Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 344-347, ill.

— *Maintenance of aircraft engines and accessories.*

Airway Age, Vol. 11, Nos. 5, 6 (May, June 1930), New York, pp. 654-657, 796-797, ill.

— *Rigging and maintenance of aircraft. The problems of wing and fuselage adjustment and some suggestions as to their solution.*

Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 496-499, ill.

DOWTY, GEORGE H. *Undercarriage developments.*

Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 170-183, ills., diagrs.

Do-X. *The coming of the Do-X.*

Aeroplane, Vol. 39, No. 20 (Nov. 12, 1930), London, pp. 1075-1076, ill.

— *The doings of the Do. X.*

The Aeroplane, Vol. 39, No. 21 (Nov. 19, 1930), London, pp. 1116-1122, ills.

— *The Dornier "Do-X" flying boat (German).* A giant high-wing monoplane.

National Advisory Committee for Aeronautics, Aircraft Circulars No. 109, Feb. 21, 1930, Washington, February 1930, p. 14, ills., diagrs.

- Do-X.** Do-X. Das grösste Flugschiff der Welt.
Zürich, Orell Füssli Verlag.
- The Do-X in England.
Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, pp. 1246-1248, ill.
- A propos du Do-X.
L'Aérophile, 38e année, Nos. 3-4 (1er-15 fév. 1930), Paris, pp. 52-53, ill., diagr.
- Technical details of the Dornier X.
Aviation, Vol. 28, No. 1 (Jan. 4, 1930), New York, pp. 4-9, ill., diagrs., tabls.
- A "Whale" among "Minnows" of the air: The "Do-X" in England.
Illustrated London News, Vol. 177 No. 4778 (Nov. 15, 1930), London, p. 882, ill.
- See Burgerhout, Els: Met de Do-X boven Amsterdam.
- See Gustosa, Corrado: I primi risultati dei voli dell'aerovascello Do-X.
- See Gustosa, Corrado: Structural details of the giant Dornier seaplane "Do-X".
- See H. H.: In en om de Do-X.
- See Ide, John Jay: A flight in the Dornier Do-X flying ship.
- See Louis, Richard: Das Dornier-Flugschiff. The Dornier Flying-Ship Do-X.
- See Rozendaal, John: Berlijnsche brief. R. 101.—De "Do-X" en het Rohrbachoctrooij.—De "eend" rédixivus.
- See Rozendaal, John : Het vliegende wonderschip van Dornier.
- See Schneider: Curtiss Conqueror, Type G V 1570 600 PS, die Motoren der Do-X.
- See Scholte, J. B.: De Zeppelin en de Do-X.
- DRÄGER.** Das lungenautomatische Höhenathemgerät, System "Dräger".
Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, 1930, Berlin, p. 114, ill.
- DRAG.** See Durand, W. F.: A proof of the theorem regarding the distribution of lift over the span for minimum induced drag.
- See Fage, A., and J. H. Warsap: The effects of turbulence and surface roughness on the drag of a circular cylinder.
- See Herrnstein, William H., jr.: Full scale drag tests on various parts of Fairchild (FC-2W2) cabin monoplane.
- See Shrenk, Martin: Measurement of profile drag on an airplane in flight by the momentum method.
- See Ower, E., and C. T. Hutton: Investigation of the boundary layers and the drags of two streamline bodies.
- See Simmons, L. F. G.: Experiments relating to the flow in the boundary layer of an airship model.
- DRAGO, FURIO.** Passi e voli sul deserto.
Torino, f. Ili Ribet edit. tip., 1929, pp. 188.
- DRAKE, G. H., and A. W. PARKES, jr.** The shielding effect of N. A. C. A. cowlings.
Aviation, Vol. 28, No. 2 (Jan. 11, 1930), New York, pp. 59-60, ill., tabls.
- DRAINAGE.** See Cotton, Harry E.: Strength and arrangement of pipe for airport drainage systems.

64 NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

- DRAPER, MURIEL. A Blériot veteran resumes.
The Sportsman Pilot, Vol. 3, No. 6 (June 1930), New York, pp. 14-15, 42.
- DRISCOLL, MARJORIE. Flying 50 miles over land and sea for a dance or two.
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, p. 53.
- DROUAS, DE. L'aviation de la division de cavalerie.
Revue des Forces Aériennes, No. 9, avril 1930? Paris, pp. 417-454, ill., maps, tabl.
- DRYDEN, H. L., and P. S. BALLIF. The characteristics of two-blade propeller fans.
Bureau of Standards, Journal of Research, Vol. 5, No. 1 (July 1930), Washington, pp. 185-211, ill., diagrs., tabls.
- DRYDEN, H. L., and A. M. KUETHE. Effect of turbulence in wind tunnel measurements.
National Advisory Committee for Aeronautics, Report No. 342, April 24, 1930, Washington, U. S. Government Printing Office 1930, pp. 26, diagrs., tabls.
- DUCHÈNE, M. R. Contribution to the study of normal burning in gaseous carbureted mixtures. Parts I and II.
National Advisory Committee for Aeronautics, Technical Memorandums Nos. 547, 548, Jan. 9 and 16, 1930, Washington, January 1930, pp. 18 and 35, ill., diagrs.
- DUCLAUX, F. BAYARD. Electricité atmosphérique.—La conductibilité électrique de l'air à Paris.
C. R. Acad. Sci. T. 192, No. 13 (30 mars 1930), Paris, pp. 810-812.
- DUGAL, XELPHIN VENNUSS. Readings on aviation.
Boston, The Christopher Publishing House, 1929, pp. 113, ill.
- DUNCAN, RICHARD. Stunt flying.
Chicago, The Goodheart-Willcox Company, inc., 1930, pp. 183, ill.
- DUNCAN, W. J., and A. R. COLLAR. Tail flutter of a particular aeroplane.
Aer. Res. Comm., Rep. Mem., No. 1247 (Ae. 401), May 1930, London, 1930, pp. 24, ill., diagrs., tabls.
- DUNCAN, W. J. The wing flutter of biplanes.
Aer. Res. Comm., Rep. Mem., No 1227 (Ae. 382), September 1929, London, 1930, pp. 60, ill., tabls.
- See Frazer, R. A., and W. J. Duncan: Conditions for the prevention of flexural-torsional flutter of an elastic wing.
- See Frazer, R. A., and W. J. Duncan: The flutter of aeroplane tails.
- DUNLAP, W. M. Aluminum welding in aircraft design.
Aviation, Vol. 28, No. 21 (May 24, 1930), New York, pp. 1028-1031, ill.
- DUNMORE, FRANCIS WINKLEY. A tuned-reed course indicator for the four- and twelve-course aircraft radio range.
Journal of Research, United States Bureau of Standards, Vol. 4, No. 4 (April 1930), Washington, pp. 461-474, ill., diagrs.
Proceedings, Institute Radio Engineers, vol. 18, No. 6 (June 1930), New York, pp. 963-982, ill.
- See Dellinginger, John Howard, H. Diamond, and F. W. Dunmore: Development of the visual type airway radiobeacon system.
- See Diamond, Harry, and Francis Winkley Dunmore: A radiobeacon and receiving system for blind landing of aircraft.
- DUNN, RAY A. Aviation and life insurance; a study of the death rate and the hazard of flying in relation to policy underwriting.
New York City, The Daniel Guggenheim Fund for the Promotion of Aeronautics, inc., 1930, pp. 112, diagrs.
- DUNSTAN, A. E., and F. B. THOLE. Fuels and dopes for aircraft engines.
Journ. Roy. Aer. Soc., Vol. 34, No. 232 (April 1930), London, pp. 329-343.

- DUPIN, PIERRE. Hydrodynamique. Sur la vibration des tiges cylindriques dans l'eau sous l'influence des tourbillons alternes.
C. R. Acad. Sci., T. 191, No. 12 (22 sept. 1930), Paris, pp. 482-484.
- DUPONT. Lexique militaire moderne allemand-français et français-allemand.
Paris, Boccard.
- DUPONT, P. Application des tourbillons conjugués à l'aérodynamique du cercle et des profils.
Service Technique de l'Aéronautique, Bulletin technique No. 63, Paris.
- DURALUMIN. Wie das Duralumin entstand.
Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, p. 82.
- See Focaccetti, Carlo: Stato attuale delle cognizioni sul fenomeno dell' invecchiamento e della corrosione delle leghe tipo durraluminio.
- See Meissner, Karl Leo: Neue Untersuchungen über den Einfluss von Fe, Si und Mn auf die Duralumin Veredelung.
- DURÁN, HERIBERTO. El bombardeamiento aéreo de Nueva York.
Ibérica, Año 16, Núm. 783 (22 junio 1929), Barcelona, p. 394.
- DURAND, W. F. A proof of the theorem regarding the distribution of lift over the span for minimum induced drag.
National Advisory Committee for Aeronautics, Report No. 349, Aug. 18, 1930, Washington, U. S. Government Printing Office 1930, pp. 15, ill.
- DURATION flights. See Hendrickson, Henry Brenton: Duration flights during 1929.
- DURWARD, J. Air photography surveys.
Journ. Roy. Aer. Soc., Vol. 34, No. 232 (April 1930), London, pp. 344-358, ill.
- The Photographic Journal, Vol. 70 (n. s. vol. 54) (Sept. 1930), London, pp. 412-419, ill.
- DUSTING. See Ringnalda, Mark: Dusting—An enlarged market for airplanes.
— See Lathrop, Frank Heidtman, and C. B. Nickels: A comparative study of dusting by means of airplane and ground machine for the control of the blueberry maggot.
- DUST-LAYING. The use of dust-laying chemicals.
Airway Age, Vol. 11, No. 5 (May 1930), New York, p. 677.
- DUSTON, F. C. Building the framework of the Moth plane.
Machinery, Vol. 36, No. 12 (Aug. 1930), New York, pp. 970-972, ill.
- DUVERNOIS. La propagande aérienne et l'instruction du pilotage en Allemagne.
Revue des Forces Aériennes, No. 16 nov. 1930, Paris, pp. 1315-1339, ill., tabl.
- DYLE and BACALAN. The Dyle and Bacalan "DB 70" commercial airplane (French). An all-metal high-wing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 113, Mar. 31, 1930, Washington, March 1930, pp. 6, ill.
- The Dyle and Bacalan "D. B. 80" day mail airplane (French). An all-metal high-wing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 123, Aug. 8, 1930, Washington, August 1930, pp. 5, ill.
- E
- EAKER, IRA C. Covered wagon flyers.
U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 21-24, port.
- EAR. See Galeone, Claudio: Sull'importanza dell'apparato vestibolare nell'uomo che vola.
— See Mangiacapra, Armando: Il labirinto vestibolare nel volo.

- EARHART, AMELIA.** The most traveled road.
 National Aeronautic Magazine, Vol. 8, No. 11 (Nov. 1930), Washington, pp. 47-48, ill.
- Women's influence on air transport luxury.
 Aeronautic Review, Vol. 8, No. 3 (March 1930), Washington, pp. 32-33, ill.
- Women's influence on aviation.
 The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, p. 15, ill.
- EARL, H. W.** A compact aero engine.
 Journ. Soc. Automotive Eng., Vol. 26, No. 3 (March 1930), New York, p. 341.
- EAST INDIES.** See Snijders, C. J.: *Het Nederlandsch-Indische luchtverkeer*.
- EATON, J. M.** Selling air passenger transportation.
 Aviation, Vol. 28, No. 14 (April 5, 1930) New York, pp. 713-714.
- EBERHARDT, WALTER VON.** *Unsere Luftstreitkräfte 1914-18. Ein Denkmal deutschen Heidentums.*
 Berlin, Vaterländischer Verlag E. U. Weller, 1930, pp. ix, 467-91, ill.
- ECKENER, HUGO.** See R 101: Dr. Eckener zur Katastrophe des R 101.
 — See Snow, V. G.: Dr. Eckener sees a dream fulfilled.
- ECLIPSE AVIATION CORPORATION.** Eclipse, series "16" aviation engine starter, concentric hand inertia type for engines up to 1,000 cu. in.; instruction book No. 7, installation and clearance drawings, application information and instructions, operating instructions, care and maintenance, parts list . . .
 East Orange, N. J., Eclipse Aviation Corporation, Division of Bendix Aviation Corporation, 1930, 1 vol., ills.
- ECORCHON, F.** Le moteur diesel et ses dérivés.
 Paris, Delagrave.
- ECUADOR.** See Biedermann, George: Achievements of commercial aviation in Columbia and Ecuador.
- EDDY, MYRON F.** Radio for aircraft.
 Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Cal., p. 41, ill.
- EDGAR, PENDLETON.** Regulating air commerce. Article VI—Accidents.
 Aviation, Vol. 28, No. 13 (March 29, 1930), New York, pp. 642-644, tabs.
- EDGAR-BONNET, GEORGE.** Les problèmes de l'aviation marchande.
 Revue de France, T. 10, No. 20 (15 oct. 1930), Paris, pp. 677-707.
- EDMUND, JOHN K.** Aircraft passenger ticket contracts.
 Journal of Air Law, Vol. 1, No. 3 (July 1930), Chicago, pp. 321-333.
- EFFICIENCY.** See McLeod, Albert K.: Aeronautic efficiency keeping pace with automobile.
- EHRHARDT, GUSTAV, und WALTER MITTELHOLZER.** Mittelmeerflug. Mit 120 Fliegeraufnahmen und einer Einleitung von Walter Mittelholzer.
 Zürich, Leipzig, Stuttgart, Wien, Rascher & Co., 1930, pp. 164.
- EISNER, FRANZ.** Anwendung der Silbenverständlichkeitsmessungen in der drahtlosen Telephonie.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, e. v., München und Berlin, 1930, pp. 544-551, diagrs., tabs.
- See Fassbender, Henrich, und Franz Eisner: Der gegenwärtige Stand der Technik und der Betriebsorganisation des Deutschen Flugfunkwesens.
- See Fassbender, Heinrich, Franz Eisner und Georg Kurlbaum: Untersuchung über die Ausbreitungsdämpfung elektromagnetischer Wellen und die Reichweiten drahtloser Stationen im Wellenbereich 200 bis 2,000 m.
- ELASTIC AXIS.** See Atlantic: Determination of the elastic axis and natural periods of vibration of the Atlantic C-2A monoplane wing.

ELECTRICITY. See Duclaux, F. Bayard: *Électricité atmosphérique.—La conductibilité électrique de l'air à Paris.*

— See Graffigny, H. de: *On peut capter et utiliser l'électricité atmosphérique au moyen des ballons.*

ELECTRODYNAMOMETRIC balance. See Rebuffet, P.: *The electrodynamometric balance of the small wind tunnel of the French service of aeronautical research.*

ELECTRON alloy. See Tapsell, H. J., S. L. Archbutt, and J. W. Jenkin: *Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.*

ELM, IENAR EWALD. *Manual of flight.*

Philadelphia, David McKay Company, 1930, p. 157, illus.

— *Weather and why; an aviator's presentation of aeronautical meteorology.* Philadelphia, David McKay Company, 1929, pp. 109, ill.

ELSNER, MRS. ELEANOR. *The airway to see Europe; a woman round the airways of Europe . . . with a foreword by Lord Thomson.*

London, A. E. Marriott, Ltd., 1930, pp. x, 150, illus., diagrs.

ELY, CATHERINE BEACH. *Aviation enters the historic Bridgewater.*

U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 48, 50.

ENGINE indicator. See Collins, John H., jr.: *Alterations and tests of the "Farnboro" engine indicator.*

ENGINES. *Aircraft engine efficiency.*

Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Cal., p. 34.

— All major parts contribute to failures in A. T. C. aircraft engine tests. Automotive Ind., Vol. 63, No. 4 (July 26, 1930), New York, pp. 118-121, 132, ill.

— Engines and accessories at the St. Louis show.

Aviation, Vol. 28, No. 10 (March 8, 1930), New York, pp. 470-481, illus.

— Die Entwicklung des Flugmotors.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 9 (1. März 1930), Berlin, p. 288.

— L'équipement de groupe moteur. VI. Eléments de liaison des circuits.

L'Aéronautique (L'Équipement aéronautique, No. 5) 12e année, No. 118 (jan. 1930), Paris, pp. 27-35, ill.

— Liquid cooled power plants.

U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, p. 42.

— Machining airplane engine cylinder heads.

Machinery, Vol. 36, No. 928 (July 24, 1930), London, pp. 521-523, ill.

— Motore di aviazione con demoltiplicatori automaticamente variabile.

Ala d'Italia, Anno 11, N. 8 (Agosto 1930), Milan, pp. 669-670, ill.

— Origin and development of heavy oil aero engines.

Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, pp. 1491-1492.

— Water-cooled aero engines.

Aeroplane, Vol. 38, No. 10 (March 5, 1930), London, pp. 388, 390, 392, illus.

— See Abell, C. F.: *Some recent progress in air-cooled aero-engine development.*

— See Andriani, Oronzo: *La lubrificazione scientifica e razionale dei motori di aviazione.*

— See Armstrong-Siddeley: *Completing the family. Some recent additions to the Armstrong-Siddeley range of engines.*

- ENGINES. *See* Axelson Aircraft Engine Co.: Instruction book for Axelson aircraft engine type B complete with parts list.
- *See* Barrau, Raymond: *Rélage des moteurs d'aviation*.
- *See* Beisel, R. B.: Possibilities of the liquid-cooled aircraft engine.
- *See* Bielefeld, Ernst: *Doppeltwirkender Zweifakt-Luftfahrzeug-Dieselmotor*.
- *See* Bristol: The Bristol "Jupiter XI.F." Full throttle type test of the commercial type geared engine.
- *See* Bruce, Clarence S.: Automobile-engine acceleration.
- *See* Cailleux, J.: *Le moteur Renault 95 CV 4 cylinders en ligne*.
- *See* Carpenter, Donald Marshall: Aviation engines.
- *See* Carter, B. C., and N. S. Muir: Torsional vibration of crankshafts Beardmore "Tornado" airship engine investigations.
- *See* Caunter: An interesting new engine.
- *See* Caunter: A two-stroke aero engine. The Caunter radial.
- *See* Caunter, C. F.: Light aero engines.
- *See* Chilton, R.: Airplane engine development and operating reliability.
- *See* Continental: The Continental aircraft engine.
- *See* Cowls: Wind tunnel tests of venturi type cowls and engine nacelles suitable for multi-engine airplanes.
- *See* Davis, W. F.: In-line versus radial aircraft engines.
- *See* De Havilland: Care and maintenance of the 100 H. P. D. H. Gypsy I aero engine.
- *See* Deuble, N. L.: Modern aircraft engine steels.
- *See* Diesel engines: *Dieselmaschinen IV*.
- *See* Diesel engines: Il motore Diesel-Packard.
- *See* Downey, H. C.: Maintenance of aircraft engines and accessories.
- *See* Earl, H. W.: A compact aero engine.
- *See* Fedden, A. H. R.: Air-cooled heavy oil engines.
- *See* Fedden, A. H. R.: 1,000-Hp. air-cooled engine will power future aircraft.
- *See* Fell, L. F. R.: Limit of racing power plant performance.
- *See* Fell, L. F. R.: The Rolls-Royce Condor III. B engine.
- *See* Fiat: *Progrès dans le dessin et la construction des moteurs d'aviation Fiat*.
- *See* Foord, F. A.: Air-cooled aero engines.
- *See* Ford: Ford transport equipped with three Packard Diesel radial air-cooled motors.
- *See* Forsyth, Graham: Water-cooled aero engines.
- *See* Gasterstädt: Development of the Junkers-Diesel aircraft engine.
- *See* Geisse, John H.: Gaging airplane-engine performance.

ENGINES. *See* Geisse, John S.: Recent developments in aircraft engines.

- *See* Gelalles, A. G., and A. M. Rothrock: Experimental and analytical determination of the motion of hydraulically operated valve stems in oil engine injection systems.
- *See* Glyde, H. S.: Combustion chamber research.
- *See* Green, F. M.: The resistance of air cooled engines.
- *See* Gustosa, Corrado: Chiarimenti sulla comparsa dei primi motori di aviazione a nafta.
- *See* Hardecker, John F.: Standardization of small engine parts.
- *See* Haydock, John, jr.: Metallurgy for Wasps and Hornets.
- *See* Heldt, P. M.: Engine performance at high altitudes studied by the Bureau of Standards.
- *See* Helmore, W.: Engine performance with gaseous fuels. Part I.—Characteristics and engine performance of gaseous fuels obtained from oil. Part II.—Engine performance from kerosene/oil gas mixtures.
- *See* Hispano-Suiza: Due nuovi motori Hispano-Suiza.
- *See* Janson, Walter: Versuchseinrichtungen für Forschungsarbeiten an Flugmotoren.
- *See* Jardine, Frank: Thermal expansion in automotive-engine design.
- *See* Joachim, William F., Chester W. Hicks, and Hampton H. Foster: The design and development of an automatic injection valve with an annular orifice of varying area.
- *See* Judge, Arthur W.: Automobile and aircraft engines.
- *See* Jupiter: Where the Jupiter engine is built.
- *See* Kamm, Wunibald: Die Gestaltung des Luftfahrzeugmotors.
- *See* Kamm, Wunibald, und Albert Stieglitz: Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."
- *See* Kozeluh: Il motore Kozeluh.
- *See* Kuipers, C.: Motoren voor sportvliegtuigen.
- *See* Kuipers, C.: Nieuwe Lorraine-Dietrich motoren.
- *See* Kuns, Ray F.: Aviation engines.
- *See* Lamé, M.: Refroidissement des moteurs à l'éthylène glycol.
- *See* Lauro, G.: Gli sviluppi del motore di aviazione dal 1912 al 1930.
- *See* Löhner, Kurt: Thermodynamische Aufgaben der Luftfahrtforschung.
- *See* Lorenzen, Christian: The Lorenzen gas turbine and supercharger for gasoline and Diesel engines.
- *See* Lürenbaum, Karl: Die Schwingungen in Luftfahrzeug-Triebwerk-anlagen.
- *See* Lycoming: Manual for inspection, servicing and maintenance of Lycoming R-680 aviation engine.
- *See* Matthaes, Kurt: Kurbelwellenbrüche und Werkstofffragen.
- *See* Merrill, Louis J.: Ascendancy of the air-cooled radial-diesels on largest sizes—higher r. p. m.

- ENGINES. *See* Montelucci, Giuliano: Il fenomeno della detonazione nei motori a scoppio e gli antidetonanti.
- *See* Moore; Moore three-valve engine.
- *See* Moss, S. A.: Superchargers for engines.
- *See* Nägele, Karl Fr.: Prüfstand mit Einzylinder-Versuchsmotor der Deutschen Versuchsanstalt für Luftfahrt, Berlin-Adlershof.
- *See* Nayler, J. L., and E. Ower: Aviation of to-day, its history and development . . . with a chapter on aircraft engines by W. J. Stern. . . .
- *See* Neumann, Kurt: Diesel-chamber investigations ignition-chamber engines.
- *See* Neville, Leslie E.: Planes, engines and accessories at the Detroit show.
- *See* Nutt, Arthur: Aircraft-engine installation.
- *See* Obata, Jūichi, and Yugio Munetomo: On the possibility of applying the cathode-ray oscillograph to the indicator for high-speed engines.
- *See* Ordonyez, C.: El motor Diesel en la aviaciōn.
- *See* Packard: The Packard Diesel engine.
- *See* Packard: Der Packard-Dieselflugmotor.
- *See* Packard: Le moteur Packard-Diesel.
- *See* Pagé, Victor Wilfred: Aviation engine examiner.
- *See* Plugs: Aero engine accessories.
- *See* Powerplus: Powerplus (1927) Limited, London. Rotary displacement blowers for aircraft engines.
- *See* Pye, D. R.: The evolution of the modern aero engine.
- *See* Rackwitz, Erich, und Alexander v. Philippovich: Beurteilung von Flugmotorenkraftstoffen in Deutschland.
- *See* Redrup: Il motore assiale Redrup.
- *See* Redrup: The Redrup-lever axial engine.
- *See* Ricardo, H. R.: The aero engine. Its development and progress.
- *See* Ricardo, H. R.: The development and progress of the aero engine.
- *See* Ricardo, H. R.: The supercharging and compounding of aero engines.
- *See* R 101: R 101 has two reversible engines.
- *See* Rothrock, A. M.: Injection lags in a common-rail fuel injection system.
- *See* Rowledge, A. J.: Water-cooled aero engines (Six years' progress).
- *See* Royal Aircraft Establishment: Torsional vibration of crankshafts. A description of the R. A. E. MK.III torsigraph.
- *See* Ryder, E. A.: Factors involved in developing light weight design.
- *See* Schatzki: Motorschonung durch Drosseln.
- *See* Schey, Oscar W., and Arnold E. Biermann: The effect of cowling on cylinder temperatures and performance of a Wright J-5 engine.
- *See* Schnauffer, Kurt: Aufzeichnung raschverlaufender Druckvorgänge mittels des Verfahrens der halben Resonanzkurve.

- ENGINES. *See* Schneider: Curtiss Conqueror, Type G V 1570 600 PS, die Motoren der Do. X.
- *See* Schneider, Helmut: Flugmotoren der Schneider-Trophäe 1929.
- *See* Schneider, Helmut: Der "Packard Diesel"—Flugmotor.
- *See* Schrenk, Martin: Der Einfluss des Triebwerksgewichts auf die Flugleistungen.
- *See* Schubert: Schubert valveless engine.
- *See* Schulz, R.: Industrie und Technik. Die Entwicklung des Junkers-Schwerölfugmotors. Höher siedende Kühlmittel. Junkers G 38.
- *See* Shoemaker, J. M.: Sea-level supercharging—better reliability—unified responsibility for installation.
- *See* Smith, Karl F: Engine performances at altitude.
- *See* Spanogle, J. A., and H. H. Foster: Performance of a high-speed compression-ignition engine using multiple orifice fuel injection nozzles.
- *See* Stieglitz, Albert: Neuere Ergebnisse auf dem Gebiet der Kurbelwellenschwingungen.
- *See* Swan, Andrew: Compression-ignition engines.
- *See* Szekely, O. E.: New cylinder arrangements—self-contained power plants.
- *See* Taylor, C. Fayette, and A. Rehbock: Rate of heat transfer from finned metal surfaces.
- *See* Thiemann, A. E.: Baustähle und Triebwerksbemessung in amerikanischen Flugmotoren.
- *See* Thomas, W. E. *Tommy*: The old and new aircraft engines.
- *See* Thompson, James G.: Engine service and maintenance. Part I—Routine inspection.
- *See* Tilley, N. N.: Small aero engines.
- *See* Tilley, N. N.: Small airplane-engines.
- *See* Townend, H. C. H.: Reduction of drag of radial engines by the attachment of rings of aerofoil section, including interference experiments of an allied nature, with some further applications.
- *See* Townend, H. C. H.: The Towend ring.
- *See* United States Department of Commerce. Aeronautics Branch: Airworthiness requirements of air commerce regulations for engines and propellers.
- *See* United States Navy Department, Bureau of Aeronautics: Naval aviation engine manual.
- *See* Vogel, H.: Zur Frage der Flugmotorenschmierung.
- *See* Volpert, J.: La normalisation des nez de moteurs.
- *See* Warner, Edward P.: Building the plane and its engine.
- *See* Warner, Edward P.: Engines before the S. A. E.
- *See* Warner, Edward P.: Multi-engined performance with one engine dead.
- *See* Webb, L. D.: Concerning aircraft engines.

- ENGINES.** *See* Wilbur Wright Memorial Lecture: The Wilbur Wright Memorial Lecture. (Lecture by H. R. Ricardo on aircraft engine development.)
- *See* Wilson, Eugene E.: Radials, air-cooled, for dependability—controllable pitch propellers—magnesium soon.
- *See* Witt, C. O.: Über Betriebsstoffe für Flugmotoren.
- *See* Woolson, L. M.: The Packard aviation Diesel engine.
- *See* Woolson, L. M.: The Packard Diesel aircraft engine.
- *See* Young, Clarence M.: Engine testing laboratory.
- *See* Zannelli, N. A.: La pratica dei motori d'aviazione.
- ENGLAND.** *See* Kronfeld, Robert: Deutscher Segelflug in England.
- *See* King's Cup: La copa del Rey de Inglaterra.
- *See* Schwencke, D.: English airplane construction.
- *See* Schwencke, D.: Konstruktive und fabrikationstechnische Fragen des englischen Flugzeugbaus. Ergebnisse einer Studienreise nach England.
- ENSLOW, RANDY.** *See* Iseman, John W., N. J. Boots, Randy Enslow . . . : The aviation manual . . .
- EQUIPMENT.** The utilization of equipment.
- Airway Age, Vol. 11, Nos. 8-10 (Aug.-Oct. 1930), New York, pp. 1048-1051, 1201-1205, 1312-1316, ill., diagrs., tabs.
- *See* Fair, Ernest W.: Equipment for the aircraft service station.
- *See* Stewart: High altitude equipment of aircraft.
- EREDIA, FILIPPO.** I nuovi metodi di sondaggi aerologici dell'alta atmosfera ai fini pratici della previsione del tempo.
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 479-487, ill.
- ERNST, D.** Das 1000 Jährige Island im kommenden Welt-Luft-Verkehr.
Mitteilungen der Islandfreunde, Bd. 18, Nr. 1-2 (Juli-Okt. 1930), Wien, pp. 12-18.
- ERVIN, R. G.** Exploring the Grand Canyon by airplane.
National Aeronautic Magazine, Vol. 8, No. 11 (Nov. 1930), Washington, pp. 37, 41, 43, 45, ill.
- ESCAILLE, H. DE L'.** L'aéronautique maritime.
Revue des Forces Aériennes, No. 8, mars 1930, Paris, pp. 301-319, ill.
- Le contrôlé et la réglementation technique de l'aviation civile.
L'Aérophile, 38e année, No. 9 (15 sept. 1930), Paris, pp. 257, 263-265.
- Une escadrille d'avions de la marine française au Canal de Suez (1914-1916).
Revue des Forces Aériennes, No. 12 juil. 1930, Paris, pp. 785-803, ill., map.
- ESNAULT-PELTERIE, ROBERT.** L'astronautique.
Paris, Imprimerie A. Lahure, 1930, 1 vol.
- ESTIMATES.** *See* Great Britain: The air estimates.
- *See* Grey, Charles Grey: On the air estimates.
- ETHYL.** Ethyl for civilian aircraft.
Flight, No. 1124, Vol. 22, No. 28 (July 11, 1930), London, p. 787.
- ETHYLENE glycol.** *See* Lamé, M.: Refroidissement des moteurs à l'éthylène glycol.
- ÉTIENNE, P.** Note sur l'interprétation des renseignements aéronautiques.
Revue des Forces Aériennes, No. 14, sept. 1930, Paris, pp. 1085-1089, map.

- ETIENNE, P.** Recherche du reseignement par action combinée.
Revue des Forces Aériennes, No. 7, fev. 1930, Paris, pp. 153-165, ill., map.
- EULA, ANTONIO.** La velocità minima dell' aeroplano e la perdita di velocità.
Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 237-280.
- EURINGER, RICHARD.** Fliegerschule 4.
Hamburg, Hanseatische Verlagsanstalt.
- EUROPA.** See Heinkel: Heinkel-Flugzeug-Katapult K 4 auf dem Schnelldampfer "Europa" des Norddeutschen Lloyd.
- EUROPE.** The aircraft in the Challenge de Tourisme International.
Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 5 (July 30, 1930), London, pp. 293-300, ills.
- On the start of the tour of Europe.
The Aeroplane, Vol. 39, No. 4 (July 23, 1930), London, pp. 217-238, ills.
- La vuelta a Europa en aviones de turismo.
Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 13-26, maps, diagr.
- See Fokker, Anthony H. G.: Trend of aeronautics in Europe.
- See Rozendaal, John: De Europeesche rondvlucht.
- EVANS, EDWARD S.** See La Roe, Arthur: An elementary course in glider flying.
With an introduction by Edward S. Evans.
- EVANS, F. G.** The cross-section of the semi-rigid airship.
Journ. Roy. Aer. Soc., Vol. 34, No. 236 (Aug. 1930), London, pp. 690-722, ill.
- EVERETT, G. E.** T. A. T.-Maddux two-way radio communication.
Aviation, Vol. 28, No. 15 (April 12, 1930), New York, pp. 752-754, ills.
- EVERLING, E.** Flugrekorde.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 636-640, diagrs., tabl.
- Die "Luftkrankheit."
Verkehrstech. Woche, 52. Jahrg., Dez. 1930, pp. 739-742.
- EVERSHED, SYDNEY.** Ravens flying upside down.
Nature, Vol. 126, No. 3190 (Dec. 20, 1930), London, pp. 956-957.
- EXHIBITIONS.** See Numann, Fief: De All-American Aircraft Show te Detroit.
- See Spit, Gijsbert: De luchtvart-tentoonstelling te Londen.
- EXPLORATION.** See Wilkins, Sir Hubert: Wings over the wasteland.
- EXPORT.** See Fair, Ernest W.: Production and export.
- See Hanawalt, Wilbur R.: 1929 exports indicate 1930 markets.
- See Love, Francis H.: The future of aeronautic exports.
- See Potter, W. F.: Conditions affecting the aircraft export market.
- See Rogers, Leighton W.: Five months' exports off little.
- See Tuxhill, F. Wesley: This export situation.
- EXPOSITION.** 1930 International Aircraft Exposition.
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 39-41, ill.
- EYES.** See Deeds, Ed.: Mist in the pilot's eyes.

F

- F 6 C-4.** See Rhode, Richard V.: Die Lastverteilung über Höhen- und Seitenleitwerk eines F 6 C-4 Jagdflugzeuges bei aussergewöhnlichen Flugbewegungen.

- FABRE.** L'appareil Fabre, moteur Gnôme 50 cv.
L'Aérophile, 38e année, Nos. 7-8 (15 avril 1930), Paris, p. 111, ill.
- FAENZI, ALDO.** Esercizi fisici in rapporto al pilotaggio. Considerazioni fisiologiche ed igieniche, progetto razionale e concreto di campo sportivo presso i reparti di aviazione.
Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 53-78, ill.
- FAGE, A., and J. H. WARSAP.** The effects of turbulence and surface roughness on the drag of a circular cylinder.
Aer. Res. Comm., Rep. Mem., No. 1283 (Ae. 429), October 1929, London, 1930, pp. 8, diagrs.
- FAGG, FRED D.** A survey of state aeronautical legislation.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 452-481.
- FAIR, ERNEST W.** Equipment for the aircraft service station.
Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 20-22, ill.
- High altitude.
The Sportsman Pilot, Vol. 4, No. 1 (July 1930), New York, pp. 18-19, 56, ill.
- The "How" of spray painting. A review of spraying practices in some aircraft plants.
Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1558-1560, ill.
- Production and export.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 70, 216.
- Transport terminal maintenance.
Aviation, Vol. 28, No. 19 (May 10, 1930), New York, pp. 937-939, ill.
- FAIRBANKS.** Fairbanks portable scale for airplanes.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, p. 254, ill.
- FAIRBANKS, ANDREW J.** Airplane performance chart.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 118-119, diagr.
- FAIRCHILD.** See Herrnstein, William H., jr.: Full scale drag tests on various parts of Fairchild (FC-2W2) cabin monoplane.
- FAIRCHILD, SHERMAN M.** Air photography for amateurs.
The Sportsman Pilot, Vol. 3, No. 3 (March 1930), New York, pp. 16-17, ill.
- FAIREY.** The Fairey Aviation Company, Ltd.
Air Annual of the British Empire 1930, London, pp. 468-478, ill.
- The Fairey "Firefly IIM." An interceptor fighter with Rolls-Royce "F" engine.
Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, pp. 800-801, ill.
- The Fairey metal airscrew (Reed License).
Air annual of the British Empire 1930, London, pp. 409-412, ill.
- See Coombes, L. P., and A. S. Crouch: The accelerations of a Fairey "Flycatcher" seaplane during acrobatic manœuvres.
- FAIREY, C. R.** The growth of aviation.
The Aeroplane, Vol. 39, No. 16 (Oct. 15, 1930), London, pp. 856-862, diagrs.
Flight, No. 1138, 1139, Vol. 22, No. 42, 43 (Oct. 17, 24, 1930), London, pp. 1147-1151, 1171-1174, diagrs.
- Range of aircraft.
Journ. Roy. Aer. Soc., Vol. 34, No. 231 (Mar. 1930), London, pp. 223-256, diagrs.
- FAIRTHORNE, R. A.** See Bradfield, F. B., and R. A. Fairthorne: Hinge moments of balanced and unbalanced ailerons on R. A. F. 14 wing, to large angles of incidence.
- See Bradfield, F. B., and R. A. Fairthorne: Maximum force on the fin and rudder of a Bristol fighter.

- FAIRTHORNE, R. A.** *See* Douglas, G. P., W. G. A. Perring, and R. A. Fairthorne: Wind tunnel tests with high tip speed airscrews. Experimental investigation of blade twist under load.
- *See* Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel experiments on steam condensing radiators.
- *See* Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel tests on Gloster and Supermarine wing radiators.
- FALKNER, V. M.**, and **SYLVIA W. SKAN**. Some approximate solutions of the boundary layer equations.
Aer. Res. Comm., Rep. Mem., No. 1314, (Ae. 457, April 1930), London, 1930, pp. 35, illus., diagrs.
- FALU**. Bericht des Fachnormenausschusses für Luftfahrt (FALU).
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 2.-23. Heft (28, Jan.-15, Dez. 1930), München, pp. 45-46, 66-68, 116-117, 143-146, 203-205, 228-230, 257, 281-282, 338, 364-365, 472-474, 535-539, 586-587 610, illus., tables.
- FARKAS, HAROLD M.** Miami air meet colorful event.
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 44-47, ill.
- FARMAN**. The Farman "F.300" commercial airplane (French). A high-wing semicantilever monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 115, April 30, 1930. Washington, April 1930, pp. 6, illus.
- FARNBORO**. *See* Collins, John H., jr.: Alterations and tests of the "Farnboro" engine indicator.
- FASSBENDER, HEINRICH**, und **FRANZ EISNER**. Der gegenwärtige Stand der Technik und der Betriebsorganisation des Deutschen Flugfunkwesens.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 557-570, illus., diagrs., tables.
- FASSBENDER, HEINRICH**, und **PAUL VON HANDEL**. Neuere Versuche über die Ausbreitung von ultrakurzen Wellen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 529-530, diagr.
- FASSBENDER, HEINRICH**, **FRANZ EISNER** und **GEORG KURLBAUM**. Untersuchung über die Ausbreitungsdämpfung elektromagnetischer Wellen und die Reichweiten drahtloser Stationen im Wellenbereich 200 bis 2000 m.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 597-610, diagrs., tables.
- FASSBENDER, HEINRICH**. Versuche mit ultrakurzen Wellen im Flugzeugverkehr.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 525-529, illus., diagrs.
- FAUCHER, D.** Toulouse, tête de lignes aériennes.
Rev. Geog. d. Pyrénées et du Sud-Ouest, T. 1, No. 3 (15 juil. 1930), pp. 249-256.
- FAURE-FAVIER, LOUISE**. L'aviation au Centenaire de Mistral.
L'Aérophile, 38e année, No. 10 (15 oct. 1930), Paris, pp. 302-303.
- L'aviation démocratique.
L'Aérophile, 38e année, Nos. 3-4 (1er-15 fev. 1930), Paris, p. 41.
- Au Salon de l'Aéronautique et l'Art. L'art et l'avion.
L'Aérophile, 38e année, No. 12 (15 dec. 1930), Paris, pp. 365-368, ill., port.
- FECHET**. Extracts from the annual report of General Fechet, Chief of Air Corps.
U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 26-28.

- FECHET, JAMES E.** Identifying army aircraft.
National Aeronautic Magazine, Vol. 8, No. 10 (Oct. 1930), Washington, pp. 53-56, ill.
- The training of air corps reserve officers.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 53-54, port, chart.
- FEDDEN, A. H. R.** Air cooled heavy oil engines.
Aircraft Engineering, Vol. 2, No. 20 (Oct. 1930), London, pp. 261-262, ill.
- 1,000-Hp. air-cooled engine will power future aircraft.
Automotive Ind., Vol. 63, No. 9 (Aug. 1930), New York, pp. 307-308.
- FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE.** La Fédération aéronautique internationale a tenu son congrès annuel à Paris, du 10 au 15 juin.
L'Aérophile, 38e année, Nos. 13-14 (15 juil. 1930), Paris, pp. 195-196, ill.
- FÉDÉRATION NATIONALE AÉRONAUTIQUE.** See D., Ch.: Le congrès de la Fédération Nationale Aéronautique.
- See Soreau, Rodolphe: La Fédération Nationale Aéronautique.
- FEDIAEVSKY, K.** L'effetto del gradiente di pressione statica sull'aumento di resistenza.
Rendiconti dell' Istituto Centrale Aero-Idrodinamico di Mosca, N. 63, (1930).
- FELL, L. F. R.** Limit of racing power plant performance.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 145-147, ill., diagrs.
- The Rolls-Royce Condor III. B engine.
Aeronautical Engineering, suppl. to Aeroplane, Vol. 38, No. 18 (April 30, 1930), London, pp. 791a-794, ill.
- FENNING, R. W., and F. T. COTTON.** Experiments on the ignition of gases by sudden compression.
Aer. Res. Comm., Rep. Mem., No. 1324, (E. 36), November 1929, London, 1930, pp. 43, ill., diagrs., tabls.
- FERBER, R.** La photographie aérienne de précision.
L'Aéronautique, 12me année, No. 128 (jan. 1930), Paris, pp. 12-14, ill.
- FERENC dr., JÓZSEF.** Szárnyas praiapákon.
Aviatika, 6.évt., 4.szám (1930 április) Budapest, p. 75.
- FERRARI, C.** La determinazione sperimentale dei campi aerodinamici a due e a tre dimensioni per mezzo della loro analogia coi campi elettrici.
L'Aerotecnica, Vol. 10, N. 6 (Giugno 1930), (Anno VIII), Roma, pp. 453-469, ill.
- FERRARIN, ARTURO.** Voli per il mondo.
Milano-Verona, A. Nondadori edit. tip. 1929, pp. xv, 282 con quaranta tavole.
- FERRIES.** See Tyson, Otis R.: Air Ferries, Ltd., in operation.
- FEUERSTEIN, VALENTIN.** Der Heimatluftschutz in Tirol während des Weltkrieges.
Die Luftwacht, Heft 3, März 1930, Berlin, pp. 117-123, maps.
- FEWKES, CHARLES K.** The plane for the purpose.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1449-1451, ill.
- FIAT.** The Fiat "T. R. 1" training and touring airplane (Italian). A two-seat highwing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 130, Dec. 24, 1930, Washington, December 1930, pp. 11, ill., diagr.
- Progrès dans le dessin et la construction des moteurs d'aviation Fiat.
L'Aéronautique, 12me année, No. 128 (jan. 1930), Paris, pp. 36-37, ill.
- FICKEL.** Colonel Fickel's nonstop flight to Canal Zone of great military value.
U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, p. 43, ill.

FIFE, GEORGE BUCHANAN. Lindbergh, the Lone Eagle, his life and achievements, with a valuable chapter on the navigation of "The Spirit of St. Louis", by Captain Robert Schofield Wood . . . including the flights of Col. Lindbergh, New York to Paris, and to every state in the U. S., Latin American tour, to flying the Spirit of St. Louis from St. Louis to the Smithsonian Institution, Washington, D. C.

New York, A. L. Burt Company, 1930, pp. iv, 300, illus.

FIN. See Bradfield, F. B., and R. A. Fairthorne: Maximum force on the fin and rudder of a Bristol fighter.

FINANCE. See Adams, Alvin P.: Aviation finance.

— See Williams, Harvey L.: Aviation finance.

— See Williams, Harvey L.: Trends in aviation.

FINANCING. Luftfahrthypotheken ein Mittel zur Finanzierung von Flugzeugbau und -beschaffung.

Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 133-134.

— See Luftig, William: Financing airplane sales.

— See Luftig, William W.: The finance company's function.

— See Luftig, William W.: Finance costs and charges.

— See Luftig, William W.: Financing airplane manufacturers.

FINCH, VOLNEY C. Airplane fuel and oil tank design. A discussion of their construction, installation and maintenance.

Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 926-930, ill.

— Simplified flight.

Western Flying, Vol. 7, No. 4 (April 1930), Los Angeles, Cal., pp. 46-49, illus.

FINDLEY, ROGER S. If it had been a real war they would know.

U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 28.

FIRE. Fire extinguishing appliances. Fittings for air service reservoirs.

Air annual of the British Empire 1930, London, pp. 685-686, ill.

— See Brouwer, D.: Brandweer-vliegtuigen.

— See Brunat, Henri: Combating airplane fires.

— See Brunat, Henri: La lutte contre l'incendie à bord des avions.

— See Mailfert: L'aviation et les incendies de forêts.

FISCHER, A. Zum Segelflugproblem.

München, Verlag: G. J. Manz A.-G., 1929, pp. 32.

FISCHETTI, UGO. Le isole Galleggianti.

Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 435-450, ill.

FISCHL, HANNS. Das österreichische Luftfahrtrecht.

Wien und Leipzig, 1929, Verlag M. Kuppitsch Wwe.

FITTINGS. See Hardecker, John F.: Aircraft hardware.

FIXEL, ROWLAND W. The regulation of airports.

Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 483-492.

FLACHBART, O., and G. KRÖBER. Experimental investigation of aircraft propellers exposed to oblique air currents.

National Advisory Committee for Aeronautics, Technical Memorandums No. 562, April 24, 1930, Washington, April 1930, pp. 18, illus., diagrs.

- FLACHBART, O. and G. KEÖBER.** Experimentalle Untersuchungen an schraeg angeblasenen Schraubenpropellern.
Zeitschr. Flug. Motorluftsch., 20. Jahrg., Nr. 23 (14. Dez. 1929), München, pp. 605-614, ills.
- FLANDERS, L. HOWARD.** See Jane, Fred T., Charles Grey, Grey, Leonard Bridgman, and L. Howard Flanders: All the World's Aircraft of 1929.
- FLANDIN, PIERRE-ETIENNE.** Le passé et l'avenir de l'Aéro-Club de France.
L'Aérophile, 38e année, Nos. 9-10 (15 mai 1930), Paris, pp. 129-130.
- FLAPS.** See Guggenheim Safe aircraft Competition: Slots and flaps take the lead.
- FLAT plates.** See Schuman, Louis, and Goldie Back: Strength of rectangular flat plates under edge compression.
- FLEETWOOD, FRANK.** See Nobile, Umberto: With the "Italia" to the North Pole.
- FLIGHT.** See Grey, Charles Grey: Mr. Spooner's coming of age. (Honoring the editor of Flight on the twenty-first anniversary of the first issue of that journal.)
- FLOATS.** See Munro, William: Floats for racing craft.
- FLOW.** See Johansen, F. X.: Flow through pipe orifices at low Reynolds numbers.
— See Mueller, H., and H. Peters: Coefficients of flow of standard nozzles.
- FLOYD BENNETT.** See Wright, Hamilton M.: Floyd Bennett field, New York.
- FLUIDS.** See Lock, C. N. H.: The equations of motion of a viscous fluid in tensor notation.
— See Riabouchinsky, D.: Aperçus théoriques sur la mécanique des fluides.
— See Villat, M. Henri: Mécanique des fluides.
- FLYING.** See Airworthiness.
— See Macmillan, Norman: The art of flying landplanes and seaplanes.
— See Soaring.
- FLYING schools.** See Lee, T., jr.: Flying schools and state legislation.
- FOCACCHETTI, CARLO.** Stato attuale delle cognizioni sul fenomeno dell'invecchiamento e della corrosione delle leghe tipo duralluminio.
L'Aerotecnica, Vol. 10, N. 6 (Giugno 1930), (Anno VIII), Roma, pp. 470-480.
- FOCKE-WULF.** See Rozendaal, John: Berlijnsche brief. R. 101.—De "Do-X" en het Rohrbachoctrooi.—De "eend" redivivus.
- FOG.** Air transport in fog.
Flight, No. 1141, Vol. 22, No. 45 (Nov. 7, 1930), London, pp. 1226-1227.
— Equipment used in the experiments to solve the problem of fog flying.
New York, The Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc., March 1930, pp. 57, ills.
— Flying in fog.
Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 18 (Oct. 29, 1930), London, pp. 984-988, ills.
— See Anderson, S. H.: The penetration of light through fog.

FOG. *See* Crocco, G. A.: Meccanica. Considerazioni sulla dell'aeroplano nella nebbia.

— See Daniel Guggenheim Fund: Equipment used in experiments to solve the problem of fog flying; a record of the instruments and experience of the Fund's full flight laboratory.

— See Daniel Guggenheim Fund: Solving the problem of fog flying; a record of the activities of the fund's full flight laboratory to date.

— See Doolittle, J. H.: Flying in fog.

— See Giovine, Vittorio: Ill problema dell'atteramento nella nebbia.

— See Hutchinson, Howard B.: Fog situation in the United States during the Winter 1928-29.

— See Jones, Bradley: Some random remarks on fog-flying.

— See Willett, H. C.: Synoptic studies in fog.

FOKKER. Het Fokker jachtvliegtuig D.XVI.

Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 6-7, ill.

— Fokker. Nederlandsche Vliegtuigenfabriek 1919 bis 1929.
Amsterdam, pp. 172, ills.

— De ontwikkeling van het Fokker-concern in Amerika.

Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 58-60, ill., port.

— See Mounier, P. J. J.: Hoe Amerika luchtlijnen exploiteert. Fokker en de Western Air Express.

— See P.: Fokker 40 jaar.

FOKKER, ANTHONY H. G. Trend of aeronautics in Europe.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 67, 226, port.

FOORD, F. A. Air-cooled aero engines.

Air annual of the British Empire 1930, London, pp. 292-306, ill.

FORCED landings. *See* Accidents: Statistical studies of aircraft accidents and forced landings.

FORD. Ford aircraft for Europe.

Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1165, ills.

— Ford three-engined monoplanes. Two types described.
Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, pp. 1233-1237, ills.

— Ford tour successfully completed.

Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, p. 1448, ill.

— Ford transport equipped with three Packard Diesel radial air-cooled motors.

U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, p. 48, ill.

FORD, EDSSEL B. Reliability tour for Edsel B. Ford trophy.

U. S. Air Services, Vol. 15, No. 9. (Sept. 1930), Washington, p. 40.

FORESTRY. *See* Mailfert: L'aviation et les incendies de forêts.

FORLANINI, ENRICO. Un pioniere dell'aeronautica: Enrico Forlanini.

Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 589-593, ill., port.

FORMS. *See* Rhenstrom, E. G.: Basic forms for operations.

FORSYTH, GRAHAM. Water-cooled aero engines.

Air annual of the British Empire 1930, London, pp. 366-392, ill.

FORT WORTH. *See* Thelin, C. Milo: Long bascule doors in new Fort Worth hangar.

- FOSTER, HAMPTON H. *See* Joachim, William F., Chester W. Hicks, and Hampton H. Foster: The design and development of an automatic injection valve with an annular orifice of varying area.
- *See* Spanogle, J. A., and H. H. Foster: Performance of a high-speed compression-ignition engine using multiple orifice fuel injection nozzles.
- FRAIDISS, JEAN, and ARMAND THIEBLOT. Construction of airfoil sections and wing generation.
Aviation, Vol. 28, No. 2 (Jan. 11, 1930), New York, pp. 61-64.
- FRAIDISS, JEAN. Thick airfoil sections with smaller center of pressure travel—superchargers—magnesium alloys.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 523-524.
- FRAENKEL, KNUT HJALMAR FERDINAND. *See* Svenske Sällskapet för Anthropologi och Geografi: Andrée's story; the complete record of his polar flight, 1897, from the diaries and journals of S. A. Andrée, Nils Strindberg, and K. Fraenkel, found on White Island in the summer of 1930 and edited by the Swedish society for anthropology and geography; translated from the Swedish by Edward Adams-Ray.
- *See* Svenska Sällskapet för Anthropologi och Geografi: Dem pol entgegen; auf Grund der während Andrées polarexpedition 1897 geführten und 1930 auf Vitö gefundenen Tagebücher S. A. Andrées, N. Strindbergs und K. Fraenkels, herausgegeben von der Schwedischen Gesellschaft für Anthropologie und Geographie.
- FRAICHE, L. Erreurs de mesure. Erreurs et tolérances de fabrication des calibres. Interchangeabilité des pièces filetées.
Service Technique de l'Aéronautique, Bulletin technique No. 61, Paris.
- FRANCE. Le budget de l'aéronautique devant la Chambre.
L'Aérophile, 38e année, Nos. 5-6 (15 mars 1930), Paris, pp. 67-70.
- Le budget de 1930 devant la chambre.
L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, p. 78.
- Deux nouveaux records rentrent en France.
L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, p. 78.
- Guide aérien. (France, Afrique du Nord, A. O. F.), réalisé sous les auspices et avec la collaboration du Ministère de l'Air (Service Central de la Sécurité Aérienne).
 Paris, Michelin et Cie., propriétaires éditeurs, Clermont-Ferrand, 1930, pp. 500.
- *See* Faucher, D.: Toulouse, tête de lignes aériennes.
- *See* Gale, Charles H.: The French airboat line to South America.
- *See* Maschino, M.: Les servitudes aériennes. Un projet de loi français.
- *See* Matthias, Joachim: Handelsluftfahrt. Der französische Luftverkehr.
- *See* Rebiffet, P.: The electrodynamometric balance of the small wind tunnel of the French service of aeronautical research.
- *See* Thomas, Francis: La crise de l'aéronautique française et l'œuvre du Ministère de l'Air.
- *See* Weymann-Lepère: The Weymann-Lepère W. E. L. 10 observation airplane (French). A high-wing monoplane.
- FRANCIS, W. E. *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim.
- *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim. Part II.—Simplified formulae and curves.

- FRANCK, P.** Les instruments de bord des avions et la navigation aérienne.
La Science Moderne, 7e année, No. 7 (juil. 1930), Paris, pp. 313-322, ill.
- Les performances des avions.
La Science Moderne, 7e année, No. 9 (sept. 1930), Paris, pp. 424-426, ill.
- La traversée de l'Atlantique par Costes et Bellonte.
La Science Moderne, 7e année, No. 10 (oct. 1930), Paris, pp. 444-453, ill.
- FRANK, GERHARDT W.** See Cooling: Aeronautical engineering. High-temperature liquid cooling.
- FRANQUINET, E.** Vogels vliegen over Limberg.
Maastricht, Uitgevers-Mij v/h Cl Goffin.
- FRASER, CHELSEA CURTIS.** Heroes of the air.
New York, Thomas Y. Crowell Company, 1930, pp. xvi, 562, illus., maps.
- See Maclean, John Kennedy, and Chelsea Curtis Fraser: Heroes of the farthest North and farthest South.
- FRAZER, R. A., and W. J. DUNCAN.** Conditions for the prevention of flexural-torsional flutter of an elastic wing.
Aer. Res. Comm., Rep. Mem., No. 1217 (Ae. 376), December 1928, London, 1930, pp. 16.
- The flutter of aeroplane tails.
Aer. Res. Comm., Rep. Mem., No. 1237 (Ae. 392), January 1930, London, 1930, pp. 27, illus., tabs., diagrs.
- FREDERIKSON, ANTON.** The graphic navigator of aircraft for cross country flights.
San Francisco, 1930, pp. 3, diagrs.
- FREEMAN, HARRY J.** Survey of state aeronautical legislation, 1928-1929.
Air Law Review, Vol. 1, No. 1 (Jan. 1930), New York, pp. 61-85.
- FREIGHT carriers.** See Guinea Airways: An aerial freight-carrier for Guinea Airways.
— See New Guinea: Deutsche Frachtflugzeuge für Neu-Guinea.
- FRENCH, JOSEPH LEWIS.** Aces of the air: Introduction by Captain Eddie Rickenbacker.
Springfield, Mass., McLoughlin Bros., 1930, pp. 316, illus.
- FRERI, PROSPERO.** Scendendo dal cielo . . . La storia e la practica del salvataggio aereo. Prefazione di Italo Balvo.
Milano, U. Hoepli (Stucchi Ceretti), 1930, pp. xii, 408, 3 tables.
- FRIEDRICH, K., und T. v. KARMAN.** Zur Berechnung freitragender Fluegel.
Zeitschr. Angew. Math. Mech., Vol. 9, No. 4 (April 1929), Berlin, pp. 261-269, ill.
- FRIER, JOHN DRUMMOND.** Definitions and formulae for students (Aeronautics).
London, 1930, Pitmans, pp. 30.
- FRIEZ.** See Pinkerton, Robert M.: Calibration and lag of a Friez type cup anemometer.
- FRITSCHE, CARL B.** The economics of the metalclad airship.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 55, 214, 216, 218, 220, ill.
- The metalclad airship.
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, p. 142.
- FUCHS, RICHARD, and WILHELM SCHMIDT.** Air forces and air-force moments at large angles of attack and how they are affected by the shape of the wing.
National Advisory Committee for Aeronautics, Technical Memorandums No. 573, July 10, 1930, Washington, July 1930, pp. 20, illus., diagrs.

- FUCHS, RICHARD, und WILHELM SCHMIDT. Der gefährliche flache Trudelflug und seine Beeinflussung.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg. 13. 14. Heft (14. 28. Juli 1930), München, pp. 325-333, 359-364, illus., diagrs.
- Luftkräfte und Luftkraftmomente bei grossen Anstellwinkeln und ihre Abhängigkeit von der Tragwerksgestalt.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 37-48, ill., diagrs.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 1. Heft (14. Jan. 1930), München, pp. 112, illus.
- FUCHS, RICHARD. Mathematical treatise on the recovery from a flat spin.
National Advisory Committee for Aeronautics, Technical Memorandums No. 591, Nov. 13, 1930, Washington, November 1930, pp. 16, diagrs.
- FUCINI, MARIO. L'addestramento al volo a vela.
Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 25-31, ill.
- Ancora in tema di velivoli giganti e monoposti.
Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 66-72.
- Il combattimento aereo e la radiotelefonìa.
Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 209-225.
- FUEL. See Bauer, W. C.: Vapor-locking tendencies of automotive fuel-systems.
— See Bridgeman, Oscar C., and Elizabeth W. Aldrich: Effect of weathering on the vapor-locking tendency of gasolines.
— See Duchêne, M. R.: Contribution to the study of normal burning in gaseous carbureted mixtures.
— See Dunstan, A. E., and F. B. Thole: Fuels and dopes for aircraft engines.
— See Ethyl: Ethyl for civilian aircraft.
— See Finch, V. C.: Airplane fuel and oil tank design.
— See Helmore, W.: Engine performance with gaseous fuels. Part I.— Characteristics and engine performance of gaseous fuels obtained from oil. Part II.— Engine performance from kerosene oil gas mixtures.
— See King, R. O., and H. Moss: Detonation and lubricating oil.
— See Neville, Leslie E.: The S. A. E. discusses fuel.
— See Oberfell, G. G., T. W. Legatski, and Billy Parker: Aviation natural and its relation to other aviation gasolines.
— See Rothrock, A. M.: Injection lags in a common-rail fuel injection system.
— See Vacuum Oil Company: Aviation fuels; a brief treatise on how and why they differ from automobile fuels.
— See Vaughan, G. W.: Fuel problems in aviation engines.
— See Wendlandt, Rudolf: Experimental investigation concerning the limits of detonation in gaeous mixtures.
- FUEL injection. See Rothrock, A. M.: Pressure fluctuations in a common-rail fuel injection system.
— See Spanogle, J. A., and H. H. Foster: Performance of a high-speed compression-ignition engine using multiple orifice fuel injection nozzles.
- FUEL oil. See Gelalles, A. G.: Some effects of air and fuel oil temperatures on spray penetration and dispersion.
- FUEL sprays. See Rothrock, A. M., and D. W. Lee: Some characteristics of fuel sprays from open nozzles.

FUHLBERG-HORST, JOHN. Auto, schiff und flugzeug; ein buch von technik und abenteuern.

Berlin, Ullstein, [1930], pp. 195, ill.

FULD, E. Luchtschip en of vliegtuig?

Het Vliegveld, 13de Jaarg., No. 12 (Dec. 1929), Amsterdam, pp. 432-433, port.

FUMAGALLI, RODOLFO. Ali e alati.

Milano, "L'Eroica," 1930.

FUSCALDO. L'hélice métallique Fuscaldo à pas variable en vol.

L'Aéronautique (L'Aérotechnique, 8e année, No. 88) 12me année, No. 131 (avril 1930), Paris, pp. 129-130, ill.

FUSELAGE. Constructing fuselages for airplanes.

Machinery, Vol. 36, No. 922 (June 12, 1930), London, pp. 321-325, ill.

— La résistance aérodynamique des fuselages avec moteurs en étoile.

L'Aérophile, 38e année, No. 8 (15 août 1930), Paris, p. 250, ill.

— See McReynolds, Charles F.: Lockheed monocoque fuselage construction.

— See Mossman, Ralph W., and Russell G. Robinson: Bending tests of metal monocoque fuselage construction.

— See Newell, Joseph S.: The static testing of fuselage structures.

— See Parkin, J. H., and G. J. Klein: The interference between the body and wings of aircraft.

FUSELAGE adjustment. See Downey, H. C.: Rigging and maintenance of aircraft. The problem of wing and fuselage adjustment and some suggestions as to their solution.

G

G., J. A. Aircraft law of Illinois—comparison with uniform state law.
St. Louis Law Review, Vol. 15, No. 1 (Dec. 1929), St. Louis, pp. 85-87.

G., L. Una nueva travesía del Atlántico.
Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, p. 28.

G., R. The D'Ascanio helicopter.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, pp. 980-982.

GABEL, S. L., and HORACE C. KNERR. The story of aircraft tubing.
Aviation, Vol. 28, No. 13, 15, 17 (March 29, April 12, 26, 1930), New York, pp. 632-635
763-766, 847-850, ills.

GABRIELLI, GIUSEPPE. Ancora sul peso ideale delle ali a sbalzo.
L'Aerotecnica, Vol. 10, N. 4 (Aprile 1930), (Anno VIII), Roma, pp. 262-275, diagrs., tabls.

GAIL, OTTO. Per raketvliegtuig naar de maan.
Leiden, Uitgave N. V. A. Sijthoff's litgever Mij.

GALE, CHARLES H. America's airport problem to date.
Aviation, Vol. 29, No. 6 (December 1930), New York, pp. 330-334, ills., maps.

— Flying clubs and American aviation.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 175-179.

— The French air-boat line to South America.
Aviation, Vol. 28, No. 5 (Feb. 1, 1930), New York, pp. 192-197, ill., map.

— The second national airport conference.
Aviation, Vol. 28, No. 21 (May 24, 1930), New York, pp. 1037-1040, ports.

— Where stands the glider?
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 63-68, ills., tabls.

GALEONE, CLAUDIO. Sull'importanza dell'apparato vestibolare nell'uomo che vola.

Riv. Aeron., Anno 6, N. 5 (Maggio 1930) Roma, pp. 265-276.

GALLET. La pénétration saharienne.

Revue des Forces Aériennes, No. 11, juin 1930, Paris, pp. 684-695, ill., map.

GAMA. La sécurité sur la ligne aérienne transafricaine.

Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 553-565, ill., maps.

GANNETT, WILLIAM HOWARD. Adventuring by air over Alaska's wonderland.

National Aeronautic Magazine, Vol. 8, No. 12 (Dec. 1930), Washington, pp. 13-25, 29, ill.

— 16,000 miles on schedule.

National Aeronautic Review, Vol. 8, No. 6 (June 1930), Washington, pp. 19, 21, 25, 29, 31, 33-34, ill.

GARDNER, F. G. See Diamond, Harry, and F. G. Gardner: Engine-ignition shielding for radio reception in aircraft.

GARDNER, LESTER D. Aviation honors a beloved leader.

National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 37-38.

GARDNER, M. B. Aerial acrobatics—its place in military flying.

U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 20-23, ill., port.

GARNER, H. M., and L. P. COOMBES. The determination of the water resistance of seaplanes.

Aer. Res. Comm., Rep. Mem., No. 1289, (Ae. 438), October 1929, London, 1930, pp. 10, diagrs.

GARROD, A. G. R. The influence of aviation on international relations.

Air annual of the British Empire 1930, London, pp. 10-14.

GAS. See Tamm, Wilhelm: Anhang. Die Versuchsanordnungen für Gaswechselversuche.

GAS welding. See Kirkbridge, Charles E.: Gas welding in the aircraft industry.

GASES. See Fenning, R. W., and F. T. Cotton: Experiments on the ignition of gases by sudden compression.

— See Helmore, W.: Engine performance with gaseous fuels. Part I.—Characteristics and engine performance of gaseous fuels obtained from oil. Part II.—Engine performance from kerosene oil gas mixtures.

— See Helmore, W.: Experiments on flame extinction in gaseous mixtures.

— See Stevens, F. W.: The gaseous explosive reaction at constant pressure—the reaction order and reaction rate.

GASOLINE. See Bridgeman, Oscar C., and Elizabeth W. Aldrich: Effect of weathering on the vapor-locking tendency of gasolines.

— See Kaye, Emy: Aviation gasoline.

GASSAWAY, GORDON. Inside dope on the outside loop.

U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 41-42.

GASSNER, A. A. The airplane weight complex.

Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 217-222, illus., tabls.

— Weight saving by structural efficiency.

Journ. Soc. Automotive Engineers, Vol. 27, No. 4 (Oct. 1930), New York, pp. 466-469, 472.

GASTERSTÄDT. Development of the Junkers-Diesel aircraft engine.

National Advisory Committee for Aeronautics, Technical Memorandums No. 565, May 15, 1930, Washington, May 1930, pp. 20, illus., diagrs.

GAUGES. See Liquidometer: Liquidometer fuel gauges.

GAVO. En torno a la catástrofe del R. 101.

Aérea, Año 8, Núm. 86 (Sept.-Oct. 1930), Madrid, pp. 6-7.

- GEDDES, ERIC. *See* Mail: Air mail fees. G. P. O. reply to Sir Eric Geddis.
- GEER, WILLIAM C., and MERIT SCOTT. The prevention of the ice hazard on airplanes. National Advisory Committee for Aeronautics, Technical Notes No. 345, July 8, 1930, Washington, July 1930, pp. 23, ills.
- GEHRES, L. E. Shooting the moon's shadow. U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 36-38, ill.
- GEIGER, Jos. Vibrations de torsion des vilesbrequens et vibrations de flexion des pales d'hélices. *L'Aéronautique*, (L'Aérotechnique, 8e année, No. 95), 12me année, No. 138 (nov. 1930), Paris, pp. 403-406, ill.
- GEISSE, JOHN H. Gaging airplane-engine performance. Journ. Soc. Automotive Engineers, Vol. 26, No. 2 (Feb. 1930), New York, pp. 221-225, ill.
- Low weight per H. P. or low fuel consumption. Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, p. 128.
- The road to noiseless flight. Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Cal., pp. 42-44, ills.
- GEISSE, JOHN S. Recent developments in aircraft engines. Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 76-77.
- GELALLES, A. G. Effect of orifice length-diameter ratio of spray characteristics. National Advisory Committee for Aeronautics, Technical Notes No. 352, Oct. 21, 1930, Washington, October 1930, pp. 14, ills., diagrs.
- GELALLES, A. G., and A. M. ROTHROCK. Experimental and analytical determination of the motion of hydraulically operated valve stems in oil engine injection systems. National Advisory Committee for Aeronautics, Report No. 330, Jan. 18, 1930, [Washington, U. S. Government Printing Office, 1929], pp. 20, ills., diagrs.
- GELALLES, A. G. Some effects of air and fuel oil temperatures on spray penetration and dispersion. National Advisory Committee for Aeronautics, Technical Notes No. 338, May 14, 1930, Washington, May 1930, pp. 11, ills., diagrs.
- GENEVA. *See* Julliot, Ch.-L.: La Convention de Genève, de 1929 et l'immunisation des appareils sanitaires aériens.
- GEODETIC SURVEYING. *See* Somerville, H. A.: Geodetic surveying by air.
- GEORGE, LLOYD, and JAMES Gilman. Grow up to fly. New York, R. M. McBride & Company, 1930, pp. x, 169, ills.
- GEORGII, WALTER. Beobachtungsergebnisse aerologischer Flugzeugaufstiege in Darmstadt und auf der Wasserkuppe in der Rhön Dezember 1927-Dezember 1928. München, 1929, pp. 37. (Veröffentl. des Forschungs-Inst. der Rhön-Rossitten-Gesellsch. e. R. Nr. 3).
- Der 40.Rhön-Segelflug-Wettbewerb auf der Wasserkuppe i. Rh. 1929. Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 4. Heft (28. Feb. 1930), München, pp. 80-91, ills., maps, diagrs.
- Ten years' gliding and soaring in Germany. Journ. Roy. Aer. Soc., Vol. 34, No. 237 (Sept. 1930), London, pp. 725-746, 749-757, ills., diagrs.
- GERHARDT, W. F. Flight instruction and flight theory. Aviation, Vol. 29, No. 5, 6 (Nov., Dec. 1930), New York, pp. 269-272, 349-352, ills., diagr.
- GERMANY. Commercial air transport in Germany. Aeroplane, Vol. 38, No. 12 (March 19, 1930), London, pp. 489-492.

GERMANY. Der deutsche Lufthaushalt 1930-31.

Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 245-248.

- Statistisches Jahrbuch 1929 über die deutsche Luftfahrt. I. Leitung der deutschen Luftfahrt. II. Die deutsche Luftfahrt im Dienste des Verkehrs und der Wirtschaft. III. Luftsport. IV. Ausbildung. V. Industrie. VI. Luftfahrtwissenschaft und -forschung. VII. Bodeneinrichtung und Flugsicherung. VIII. Luftfahrt und Presse.
Die Luftwacht, Heft 5, Mai 1930, Berlin, pp. 193-242, ill., tabls.
- Viaje de Alemania a Norte América.
Aérea, Año 8, Núm. 86 (Sept.-Oct. 1930), Madrid, p. 8.
- See Aero-Club von Deutschland: Mitteilungen des v. Tschudi-Archivs des Daniel Guggenheim Fund.
- See Battista, Gianni: Aviazione civile e militare in relazione allo sviluppo aeronautico della Germania.
- See Baur de Betaz, W.: Jahrbuch des Deutschen Luftfahrt-Verbandes 1929.
- See Becker, Hellmuth: Wirtschaftliche probleme des deutschen luftverkehrs . . .
- See D., Ch.: D'Allemagne en Amérique.
- See Deutsche Luft Hansa a. g.: 10 Jahre deutsche handelsluftfahrt.
- See Duvernois: La propagande aérienne et l'instruction du pilotage en Allemagne.
- See Eberharst, Walter von: Unsere Luftstreitkräfte 1914-18.
- See Helbig: Jugendbewegung und motorloser-Flug im Deutschen Luftfahrt-Verbande. Statistischer Rückblick 1929.
- See Hübner, Walter: Relation between the stability characteristics and the controllability of German airplanes.
- See Junkers: Un avion géant allemand en France.
- See MacColl, J. W.: Modern Aerodynamical research in Germany.
- See 1931. Deutscher Luftfahrt-Kalender 1931.
- See Pollog, Carl Hanns: German commercial aviation in 1929.
- See Pratt, John E.: Glider training in Germany.
- See Schrenk, Martin: Structural details of German light airplanes.
- See Walter, Franz: Der Motorflugsport im Deutschen Luftfahrt-Verband. Statistischer Rückblick 1929.
- See Wronsky, Martin: German commercial air transport.

GERNGROSS, OTTO. Über Sperrholzleime.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin 1930, pp. 428-433, tabls.

Luftfahrtforschung, Band 8, Heft 2, 1930, München und Berlin, R. Oldenbourg.

GERSCHGORIN, S. Ein Apparat zur mechanischen Ausführung der konformen

$$\text{Abbildung } G = \frac{1}{2} \left(Z + \frac{r^2}{Z} \right)$$

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 15. Heft (14. Aug. 1930), München, pp. 391-393, illus.

GEYER, H. Sicherheit des Flugsports.

Luftschau, 3. Jahrg., Nr. 19 (10. Okt. 1930), Berlin, p. 147.

- GHEORGHIU, T. D.** Etude de l'absorption dans le spectre visible de quelques huiles minérales.
Service Technique de l'Aéronautique, Bulletin technique No. 64, Paris.
- GHOSH, U. N.** Distribution of air density at M. S. L. over India.
India Meteorological Department, Scientific Notes, Vol. 3, No. 19, Calcutta, 1930, pp. 13-14, charts.
- GIACOMELLI, R.** The aerodynamics of Leonardo da Vinci.
Journ. Roy. Aer. Soc., Vol. 34, No. 240 (Dec. 1930), London, pp. 1016-1038, illus.
Mech. Eng., Vol. 52, No. 10 (Oct. 1930), New York, p. 888, port.
- La gara Guggenheim per il velivolo sicuro e i suoi risultati.
L'Aerotecnica, Vol. 10, N. 7-8 (Luglio-Agosto 1930), (Anno VIII), Roma, pp. 559-612, ill., tabls.
- A proposito del progetto di fondazione della prima associazione aerotecnica.
L'Aerotecnica, Vol. 10, N. 3 (Marzo 1930), (Anno VIII), Roma, pp. 171-176.
- GIANNINI, AMEDEO.** L'hydravion.
Droit Aérien, Juillet, Aout, Septembre 1930, Paris, pp. 434-435.
- GAINT aeroplanes.** Gaint aeroplanes and their design.
Nature, Vol. 124, No. 3116 (July 20, 1929), London, p. 100.
- GIBBONS, FLOYD.** The red knight of Germany.
London, Cassell & Co., Ltd., pp. 392, ill.
Story of the life and death of Captain Baron Manfield von Richthofen.
- GILLERT, ERNST.** Sitz und Gurte im Flugzeug als Einheit.
Zeitschr. Flugt. Motorluftsch., 21, Jahrg., 24, Heft (29. Dez. 1930), München, pp. 648-652, illus.
- GILLES, A., L. HOPF, und TH. v. KÁRMÁN.** Vörtrage aus dem gebiete der aerodynamik und verwandter gebiete (Aachen 1929).
Berlin, J. Springer, 1930, pp. 221, illus., diagrs.
- GILLIAM, R. E.** Practical guidance on the way to finish aircraft.
Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Calif., pp. 46-48, ill.
- GILLMORE, WILLIAM E.** General Gillmore to retire.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 28-29.
- Imagination cannot picture the possibilities in the air.
U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), "Washington, pp. 34, 36-37.
- GILMAN, JAMES.** See George, Lloyd, and James Gilman: Grow up to fly.
- GIOVINE, VITTORIO.** Il problema dell'atterramento nella nebbia.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 1-16, ill.
- GIRAULT, M.** Contribution à la construction de profils d'ailes par transformation conforme d'un cercle. Mesure des pressions qui s'exercent dans la section médiane d'un aile en fonction de l'allongement et pour différents profils.
Service Technique de l'Aéronautique, Bulletin No. 63, Paris.
- GLASSMAN, DON.** They gave up the ship.
Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 43, 62, ports.
- GLAUERT.** See Hooker, S. G.: On the vortex system in the wake of a cylinder in a fluid.
- GLAUERT, H.** Aerodynamic theory.
Journ. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 409-414.
- Some generalised curves for the accelerated motion of an aeroplane.
Aer. Res. Comm., Rep. Mem., No. 1291, (Ae. 440), November 1929, London, 1930, pp. 11, tabls., diagrs.

GLAUERT, H. The stability of a body towed by a light wire.

Aer. Res. Comm., Rep. Mem., No. 1312, (Ae. 451), February 1930, London, 1930, pp. 22, diagrs., tabs.

GLEN L. MARTIN COMPANY. See Van Dusen, C. A.: A twelve hundred acre airplane project.

GLENDALE, CALIFORNIA. See Kramer, George N.: The Grand Central airport.

Glendale, Cal., port opens \$150,000 passenger station and control tower—Design and construction noteworthy.

GLIDERS. Gliders aid the airport.

Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 522-524, ill.

— The glider license question.

Western Flying, Vol. 7, No. 3 (March 1930), Los Angeles, Calif., p. 130.

— Making America "glider-conscious."

Literary Digest, Vol. 104, No. 8 (Feb. 22, 1930), New York, pp. 39-40, 45-46, ill.

— Static test and determination of the elastic axis of the (Matériel Division) improved stressed skin type glider wing.

Air Corps Information Circular, Vol. 7, No. 646 (March 1, 1930), Washington, United States Government Printing Office, 1930, pp. 5, ills., diagrs., tabs.

Air Corps Technical Report No. 3099.

— See Alexander, J. Don: The significance of gliders.

— See Artran, A. P.: Combining primary and secondary training gliders.

— See Barnaby, Ralph Stanton: Gliders and gliding. Design, principles, structural features and operations of gliders and soaring planes.

— See Budwig, Gilbert C.: Construction and the operation of gliders.

— See Gale, Charles H.: Where stands the glider?

— See Hazen, R. I.: The new regulations for glider licensing.

— See Knott, Heinrich: Lessons from the glider.

— See Pratt, John E.: Glider training in Germany.

— See Sablier, G.: Manuel pratique de construction des planeurs; construction d'un biplan, d'un monoplan à poutre, et des fuselages—pilotage—résistance des matériaux.

— See Schroeter, John Paul: Starting and landing with gliders and soarers; a manual of instruction for glider clubs and pilots.

— See Steinmetz, Charles P.: America's first glider club.

— See Teale, Edwin Way: The book of gliders; with introduction by W. H. Bowlus.

— See Van Dusen, William L.: How to build pontoons for gliders.

— See Young, Clarence M.: After gliders what?

GLIDING. Gliding.

Flight, No. 1123, Vol. 22, No. 27 (July 4, 1930), London, pp. 755-756, ill.

— Gliding. The London gliding club.

Aeroplane, Vol. 38, No. 12 (March 19, 1930), London, pp. 484-486, ill.

— Inter-club gliding match. Lancashire v. London.

Flight, No. 1127, Vol. 22, No. 31 (Aug. 1, 1930), London, pp. 868-870, ills.

— See Ashwell-Cooke, J. R.: Gliding. The Rhön competitions.

— See Georgii, Walter: Ten years' gliding and soaring in Germany.

— See Halley, D. M.: Gliding; course of instruction, theory and practice, covering material essential for the beginner to know, followed by a complete practical course of instruction in outline form.

- GLIDING.** *See* Hawks, Frank M.: Gliding—an instructive sport.
 — *See* Hawks, Frank M.: The sport of gliding.
 — *See* Howard-Flanders, Leonard: Gliding.
 — *See* Howard-Flanders, Leonard, and C. F. Carr: Gliding and motorless flight.
 — *See* Kittredge, L. T.: Gliding in high school.
 — *See* Lafay, A.: Considerations sur le vol sans moteur.
 — *See* Pagé, Victor Wilfred: Henley's ABC of gliding and sailflying.
 — *See* Plath, Erich: Vom elften Segelflug-Wettbewerb auf der Rhön.
 — *See* Snow, V. G.: Gliding—modern airmen's sport—an early bird in flying history.
 — *See* Soaring.
 — *See* Stamer, Fritz, and A. Lippisch: Gliding and sail-planing; a beginner's handbook.
- GLOECKNER, M. H.** Über Flugfunkpeilungen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 571-578, illus., diagrs.
- GLOSTER.** The Gloster Aircraft Co., Ltd.
Air annual of the British Empire 1930, London, pp. 479-489, ill.
- Gloster-Hele-Shaw-Beacham variable pitch airscrew.
Air annual of the British Empire 1930, London, pp. 413-417, ill.
- "Gloster" metal construction.
National Advisory Committee for Aeronautics, Technical Memorandums No. 570, June 19, 1930, Washington, June 1930, pp. 9, ill.
- Introducing the Gloster survey.
Aeroplane, Vol. 38, No. 5 (Jan. 29, 1930), London, pp. 163-164, 173, ill.
- New Gloster works at Brockworth.
Flight, No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. 1069-1073, illus.
- *See* Hardy, J. K.: Experimental comparison between a series of turns of different diameter on a Gloster IV seaplane.
- *See* Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel tests on Gloster and Supermarine wing radiators.
- GLOVER, BYRON A.** Basic course in aviation.
Pittsburgh, Penn School of Aviation, 1930, 1 vol., illus.
- GLOVER, W. IRVING.** The air mail in Latin America.
Pan American Magazine, Vol. 43, No. 5 (Nov. 1930), Washington, pp. 297-301.
- GLUING.** *See* Gerngross, Otto: Über Sperrholzleime.
 — *See* Kraemer, Otto: Der Einfluss der Leimung auf die Güte von Flugzeugsperrholz.
 — *See* Truax, Thomas Roy: Gluing wood in aircraft manufacture.
- GLYDE, H. S.** Combustion chamber research.
Automobile Engineer, (Feb. 1930).
- GÖHRE, ERNST.** Schnitte und Stanzen.
Leipzig, Verlag Otto Spanner, p. 230, illus.

- GÖTT. *See* Beyne, and Göett: L'aptitude physique à la fonction d'observateur en avion.
- GÖTTINGEN. *See* Blenk, Hermann: Göttingen six-component scale measurements on a Junkers A 35 airplane model.
- *See* Blenk, Hermann: Göttinger Sechskomponentenmessungen an einem Modell des Flugzeugmusters Junkers A 35.
- GOGGLES. Meyrowitz Luxor goggles.
Air annual of the British Empire 1930, London, p. 665.
- GOLDSTROM, JOHN. A narrative history of aviation.
New York, The Macmillan Co., 1930, pp. xii, 319, ill.
- GÓMEZ, L. Concentración gigantesca de líneas aéreas americanas.
Aérea, Año 8, Núm. 86 (Sept.-Oct. 1930), Madrid, pp. 25-28, map.
- GOODYEAR. Goodyear—"Airwheel."
Deutsche Luftfahrt, 34. Jahrg., Heft 4-5, 1930, Berlin, p. 117, ill.
- GOODYEAR-ZEPPELIN. De Goodyear-Zeppelin luchtschiploods te Akron.
Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 26-28, ill.
- *See* Raube, W. C.: Goodyear-Zeppelin hangar doors.
- *See* Schwegler, H.: Die Luftschiffwerft der amerikanischen Zeppeline in Akron, Ohio.
- GORDON BENNETT. Gordon Bennett balloon race results.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, p. 1327, ill.
- GORRISEN, F. C. von. Luftfahrt und Flugzeugbau auf den deutschen Technischen Hochschulen.
Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 138-139.
- GORSKY, W. Ricerche aerodinamiche sugli impennaggi e sugli elevatori compensati e non compensati.
Rendiconti dell' Istituto Centrale Aero-idrodinamico di Mosca, N. 49, 1930.
- Una ricerca sull'effetto dell'interferenza della fusoliera sul piano fisso esul l'elevatore di un aeroplano.
Rendiconti dell' Istituto Centrale Aero-idrodinamico di Mosca, N. 49, 1930.
- GOUGH, H. J., and H. L. COX. The behaviour of a single crystal of antimony subjected to alternating torsional stresses.
Aer. Res. Comm., Rep. Mem., No. 1323, (M. 69), November 1929, London, 1930, pp. 18, ill., diagrs., tabs.
- Further experiments on the behaviour of single crystals of zinc subjected to alternating torsional stresses.
Aer. Res. Comm., Rep. Mem., No. 1322, (M. 68), August 1929, London, 1930, pp. 20, ill., diagrs., tabs.
- GOUGH, MELVIN N. Effect of the angular position of the section of a ring cowling on the high speed of an XF7C-1 airplane.
National Advisory Committee for Aeronautics, Technical Notes No. 355, Nov. 11, 1930, Washington, November 1930, pp. 15, ill., diagrs., tabs.
- *See* Schey, Oscar W., Ernest Johnson, and Melvin N. Gough: Comparative performance obtained with XF7C-1 airplane using several different engine cowlings.
- GOULD, BRUCE. The airman—miser of beauty.
National Aeronautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 10-13, ill.
- The airplane rivals the golf course.
National Aeronautic Review, Vol. 8, No. 6 (June 1930), Washington, pp. 10-13, ill.

GOULD, LAURENCE MCKINLEY. *See* Byrd, Richard Evelyn: Little America, aerial exploration in the antarctic, the flight to the South Pole.

GOUZY, RENÉ. *See* Mittelholzer, W.: Les ailes et les Alpes. Ouvrage publié avec la collaboration de H. Kempje. Adaptation de René Gouzy.

GOVI, LUIGI. La difesa antigas.

Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 433-449.

GRAF ZEPPELIN. Die bisherigen Leistungen des "Graf Zeppelin". Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, pp. 78-80, ill.

— El combustible del "Graf Zeppelin".

Iberica, Año 16, Núm. 774 (20 abril 1929), Barcelona, pp. 244-245.

— Fahrtenverzeichnis des "Graf Zeppelin" LZ 127.

Das Luftschiff, 2. Jahrg., Nr. 56, 1930, Berlin-Lichterfelde, pp. 38-39, tabl.

— The first airship flight around the world.

National Geographic Magazine, Vol. 57, (June 1930), Washington, D. C., pp. 653-688.

— The "Graf Zeppelin".

Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 206.

— The "Graf Zeppelin's" visit.

Aeroplane, Vol. 38, No. 18 (April 30, 1930), London, p. 780, ill.

— Le périple atlantique du "Graf Zeppelin".

L'Aéronautique, 12me année, No. 134 (juil. 1930), Paris, p. 279, ill.

— L. Z. 127 "Graf Zeppelin".

Berlin-Lichterfelde, Verlag für deutsches Flugwesen.

— Le voyage du "Graf Zeppelin".

L'Illustration, 88e année, No. 4555 (21 juin 1930), Paris, p. 302, ill.

— See Breihaupt, Joachim: Meine Erfahrungen auf der Atlantikfahrt des "Graf Zeppelin".

— See Breithaup, Joachim: Mit Graf Zeppelin nach Süd- und Nordamerika.

— See Hegener, Henri: De Amerika-vaart van de "Graf Zeppelin".

— See Herrera, Emilio: Primer viaje a sudamérica del "Graf Zeppelin" y doble viaje trasatlántico del "R-100".

— See Herrera, Emilio: Una turbonada en el viaje trasatlántico del "Graf Zeppelin".

— See Kamm, Wunibald, und Albert Stieglitz: Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."

— See Lacmann, Otto, und Walter Block: Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffs LZ127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL.

— See Mejias, Jeronimo, y Blanco Belmonte: La primera vuelta al mundo en el "Graf Zeppelin".

— See Rozendaal, John: De tocht van de "Graf Zeppelin".

— See Schw., A.: Temperaturdifferenzmesser für das Luftschiff "Graf Zeppelin".

GRAFFIGNY, H. DE On peut capter et utiliser l'électricité atmosphérique au moyen de ballons.

L'Aérophile, 38e année, Nos. 13-14 (15 juil. 1930), Paris, pp. 209-211, ill.

GRAGG, CHARLES I. Marketing problems in the aviation industry.

Harvard Business Review, Vol. 8, No. 4 (July 1930), Chicago, pp. 490-500.

- GRAHAM, LLOYD.** Care and maintenance of parachutes.
Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 360-361.
- GRAHAME-WHITE, CLAUDE.** Flying; an epitome and a forecast.
London, Chatto and Windus, 1930, pp. xi, 263, ill.
- GRANET, ANDRÉ.** Le 12e Salon de l'Aviation.
L'Aérophile, 38e année, No. 12 (15 déc. 1930), Paris, p. 353.
- GRANGER, J. E.** See Pilots: Getting them up in the air.
- GRANJON, R.** La soudure autogène dans les constructions aéronautiques.
L'Aéronautique, (L'Aérotechnique, 8^e année, No. 90) 12^{me} année, No. 132 (mai 1930), Paris, pp. 169-173, ill.
- GRARD.** L'école nationale supérieure de l'aéronautique.
L'Aérophile, 38e année, No. 8 (15 août 1930), Paris, p. 225.
- GRARD, CHARLES ALBERT MARIE, and JEAN COURNOT.** Métaux et alliages. . .
Paris, Berger-Levrault, 1930, ill., diagrs.
- GRASE, IR B.** Het meten van vliegtuigprestaties.
Het Vliegveld, 13de Jaarg., No. 6 (Juni 1929), Amsterdam, pp. 223-226, diagr.
- GRASÉ, J. C. G.** See Stephan, B.: In memoriam Ir. J. C. G. Grasé.
- GRASSO, RENATO.** La Carta aeronautica del R. Aero Club d'Italia.
Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 459-503, maps.
- Carte aeronautiche internazionali. Segni, simboli ed abbreviazioni convenzionali.
Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 241-264, ill., tabl.
- GREAT BRITAIN.** Agreement between His Majesty in respect of the United Kingdom and the President of the German Reich amending the Agreement of June 29, 1927, relating to air navigation. Berlin, July 5, 1930. The Agreement has not been ratified by His Majesty.
London, H. M. Stationery Office, 1930, pp. 5. Foreign Office. Germany No. 1. Parliament. Papers by command. Cmd. 3663.
- The air annual of the British Empire, 1930, founded and edited by C. G. Burge.
London, Gale & Polden, Ltd., [1930], pp. 774, ill.
- The air estimates.
Aeroplane, Vol. 38, No. 14 (April 2, 1930), London, pp. 560b-560d.
- The Air Transport bill.
The Aeroplane, Vol. 38, Nos. 19, 21 (May 7, 21, 1930), London, pp. 830, 922-928.
- Anti-aircraft searchlight drills, 1930.
London, H. M. Stationery Office [printed by William Clowes & Sons, Ltd.], 1930, pp. 87, ill. Notified in Army Orders for July 1930 . . . The War Office.
- Britain's municipal air ports.
Flight, No. 1145, Vol. 22, No. 49 (Dec. 5, 1930), London, pp. 1419-1420.
- Britain's place in the air. The threshold of a new age . . .
London, The Argus Press, Ltd., 1930, pp. 15. Reprinted from the Financial News, July 1930.
- The British aircraft industry.
Flight, No. 1143, Vol. 22, No. 47 (Nov. 21, 1930), London, pp. 1365-1368, ill.
- The British Arctic air route expedition.
The Geographical Journal, Vol. 76, No. 1, 5 (July, Nov. 1930), London, pp. 67-68, 426-427.
- The British Empire and the air.
Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 250-252.
- Civil aviation in the House of Lords.
The Aeroplane, Vol. 38, No. 24 (June 11, 1930), London, pp. 1122-1124.

GREAT BRITAIN. A comparison of England's two new aircraft. A description of the recently launched R. 100 and a comparison with R. 101.

Airway, Vol. 28, No. 2 (Jan. 11, 1930), New York, pp. 65-68.

— The co-ordination of defence services.

Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 258-260.

Resolution of E. L. Burgin in House of Commons for disarmament except for national defence.

— England—South Africa Civil Air Transport Service. Note by the Secretary of State for Air on the principal provisions to be embodied in a contract with Imperial Airways, Ltd., for a weekly air service between Egypt and South Africa, connecting with the existing service between England and Egypt.

London, H. M. Stationery Office, 1930, pp. 3, tabs. Parliament. Papers by Command, Cmd. 3696.

— The House of Lords on air power.

Aeroplane, Vol. 38, No. 16 (April 16, 1930), London, pp. 692-698.

— On British progress in 1929.—I.

Aeroplane, Vol. 38, No. 1 (Jan. 1, 1930), London, pp. 1-16, ill.

— On British progress in 1929.—II.

Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, pp. 37-53, ill.

— On British progress in 1929.—III.

Aeroplane, Vol. 38, No. 3 (Jan. 15, 1930), London, pp. 77-88, ill.

— On British progress in 1929.—IV.

Aeroplane, Vol. 38, No. 4 (Jan. 22, 1930), London, pp. 109-120, ill.

— On the air estimates.

Aeroplane, Vol. 38, No. 13 (March 26, 1930), London, pp. 501-510.

— Report on the progress of civil aviation, 1929.

London, His Majesty's Stationery Office.

— The state of air transport in the British Empire.

Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, p. 977.

— Het vliefeest der Britsche luchtmacht.

Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, pp. 219-220, ill.

— See Aircraft Investment Company: The Aircraft Investment Company.

— See Airways: The progress of Imperial Airways, 1929-1930.

— See Baring, Maurice: Flying corps headquarters, 1914-1918. (Royal Air Force).

— See Bourne, R.: Air survey within the Empire. A summary of the general conclusions reached in recent research.

— See Grey, Charles Grey: British sport flying.

— See Grey, Charles Grey: On building British trade.

— See Grey, Charles Grey: On floodlighting British industry.

— See Grey, Charles Grey: On the air estimates.

— See Grey, Charles Grey: On the revival of British aviation.

— See Harper, Harry: The romance of a modern airway.

— See Imperial Airways: Britain's share in building giant passenger aircraft: A 40-seater of the new Imperial Airways fleet.

— See King's Cup: King's Cup air race.

GREAT BRITAIN. *See* Matthias, Joachim: Entwicklung des britischen Segelflugwesens.

— *See* Outram, H. W. S.: British aeronautical inspection.

— *See* Potter, Leslie S.: Air routes of the British Empire.

— *See* Robertson, F. A. de V.: Air transport in the British Empire.

— *See* Sempill, Colonel, the master of: Flying for the private owner in Great Britain.

— *See* Valdecilla, J. H.: Las maniobras aéreas Inglesas.

GREAT LAKES AIRCRAFT CORPORATION. Learning to fly: a few words of practical counsel regarding flight training.

Cleveland, Great Lakes Aircraft Corporation, 1930, pp. 20, illus.

GREEN, F. M. The resistance of air-cooled engines.

Air annual of the British Empire 1930, London, pp. 307-354, ill.

Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 803-812, ill.

GREEN, FITZHUGH. "Byrd has been through Hell—"

Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, pp. 15-17, ill.

GREEN, H. N. *See* Lighting: L'illuminazione dell'aviolinea moderna.

GREEN, J. J. Viscous layer associated with a circular cylinder.

Aer. Res. Comm., Rep. Mem. Mem., No. 1313, (Ae. 452), April 1930, London, 1930, pp. 34, illus., diagrs., tabls.

GREENE, RALPH. Some notes on beach flying.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, p. 61, ill.

GREER, ROWAN A. Civil liability of an aviator as carrier of goods and passengers.

Journal of Air Law, Vol. 1, No. 3 (June 1930), Chicago, pp. 241-262.

GREGG, WILLIS RAY. Aeronautical meteorology.

New York, The Ronald Press Co., London, Simpkin, Marshall, 1930, pp. xvi+406, illus., maps. Second and enlarged edition.

GREY, CHARLES GREY. British sport flying.

The Sportsman Pilot, Vol. 4, No. 4 (April 1930), New York, pp. 16-17, ill.

— Mr. Spooner's coming of age.

Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, p. 54.

Honoring the editor of Flight on the twenty-first anniversary of the first issue of that journal.

— On a psychological problem.

The Aeroplane, Vol. 39, No. 16 (Oct. 15, 1930), London, p. 864.

— On a trip to Hooton.

The Aeroplane, Vol. 39, No. 10 (Sept. 3, 1930), London, pp. 537-544.

— On airworthiness.

Airplane, Vol. 38, No. 5 (Jan. 29, 1930), London, pp. 149-160, ill.

— On bridging the Atlantic.

The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, pp. 485-488.

— On building British trade.

The Aeroplane, Vol. 38, No. 21 (May 21, 1930), London, pp. 917-920, illus.

— On explaining accidents.

The Aeroplane, Vol. 39, No. 14 (Oct. 1, 1930), London, pp. 745-750.

— On floodlighting British industry.

Aeroplane, Vol. 38, No. 14 (April 2, 1930), London, pp. 549-554, ill.

— On how to get into aviation.—I., II.

Aeroplane, Vol. 38, Nos. 10, 12 (March 5, 19, 1930), London, pp. 369-376, 457-466, ill.

- GREY, CHARLES GREY. On hustling progress.
 The Aeroplane, Vol. 38, No. 22 (May 28, 1930), London, pp. 1005-1008.
- On imperial air transport.
 The Aeroplane, Vol. 38, No. 19 (May 7, 1930), London, pp. 821-830.
- On Imperial Communications.
 The Aeroplane, Vol. 39, No. 6 (Aug. 6, 1930), London, pp. 325-330, illus.
- On London's air port.
 The Aeroplane, Vol. 38, No. 25 (June 18, 1930), London, pp. 1149-1152.
- On some points of airworthiness.
 Aeroplane, Vol. 39, No. 20 (Nov. 12, 1930), London, pp. 1065-1066, 1068, 1070, illus.
- On the air estimates.
 Aeroplane, Vol. 38, No. 11 (March 12, 1930), London, pp. 413-414, 416, 418, 420-421, tables
- On the Challenge de Tourisme International IV.
 The Aeroplane, Vol. 39, No. 7 (Aug. 13, 1930), London, pp. 377-386, ill.
- On the exercises.
 The Aeroplane, Vol. 39, No. 8 (Aug. 20, 1930), London, pp. 429-434.
- On the front of British flying.
 The Aeroplane, Vol. 39, No. 21 (Nov. 19, 1930), London, pp. 1109-1114.
- On the growth of airmindedness.
 The Aeroplane, Vol. 38, No. 20 (May 14, 1930), London, pp. 873-878, illus.
- On the importance of Portugal.—I-IV.
 Aeroplane, Vol. 38, Nos. 15-18 (April 9-23, 1930), London, pp. 645-650, 685-690, 729-732, 769-772, ill.
- On the lighter side of science.
 The Aeroplane, Vol. 39, Nos. 18, 19 (Oct. 29, Nov. 5, 1930), London, pp. 957-960, 1017-1020.
- On the present and future.
 The Aeroplane, Vol. 39, No. 11 (Sept. 10, 1930), London, pp. 589-594.
- On the R. A. F. display.
 The Aeroplane, Vol. 39, No. 1 (July 2, 1930), London, pp. 1-10, illus.
- On the Royal Aeronautical Society.
 The Aeroplane, Vol. 39, No. 16 (Oct. 15, 1930), London, pp. 853-854.
- On the revival of British aviation.
 Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 241-244.
- The sailplane and glider.
 The Aeroplane, Vol. 39, No. 7 (Aug. 13, 1930), London, p. 408.
- The technical organisation of the Compagnie Générale Aéropostale.
 Aeroplane, Vol. 38, No. 15 (April 9, 1930), London, pp. 673-678.
- On trade crusading.
 Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, pp. 193-204, ill.
- The trailing antenna.
 Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 231.
- On weather and other service.
 Aeroplane, Vol. 39, No. 17 (Oct. 22, 1930), London, pp. 909-910, 912.
- See Jane, Fred T., Charles Grey Grey, Leonard Bridgman, and L. Howard Flanders: All the World's Aircraft of 1929.
- GRIMAUT, P. The technical organisation of the Compagnie Générale Aéropostale.
 Journ. Roy. Aer. Soc., Vol. 34, No. 239 (Nov. 1930), London, pp. 922-935.
- GROSSE. Temperaturen und Windrichtungen in grösseren Höhen.
 Luftschau, 3. Jahrg., Nr. 21 (10. Nov. 1930), Berlin, p. 165.

- GROVES, P. R. C. *See* Bouche, Henri, et P. R. C. Groves: *Etudes sur la situation économique, administrative et juridique de la navigation aérienne internationale.*
- GRUBER, O. V. *Fereinkurs in photogrammetrie.*
Stuttgart, Konrad Wittwer, 1930, pp. 510, ill.
- GUATEMALA. *Reglamento para el servicio de aviación en Guatemala. Cuerpo de aviación militar.*
Guatemala, C. A. Tipografía Nacional, 1929, pp. 32.
- GUBBINS, M. N. T. *The development of civil aviation and night flying.*
Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, pp. 1163-1164, illus.
- GUGGENHEIM. *Curtiss awarded first Guggenheim prize amounting to \$100,000.*
U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 43-46.
- *Documents sur le concours Guggenheim.*
L'Aéronautique, 12me année, No. 132 (mai 1930), Paris, pp. 185-188, ill., tabl.
- *Das Ergebnis des Guggenheim-Sicherheits-Wettbewerbs für Flugzeuge.*
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 23 (7. Juni 1930), Berlin, pp. 769-770, ill.
- *The Guggenheim prize winner.*
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 235-236, ill.
- *More about the Guggenheim competition.*
Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, p. 56.
- *A review of the work of the Guggenheim fund.*
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 42-43, ill., port.
- *See* Biche, Jean: *Le concours Guggenheim pour la sécurité en aviation.*
- *See* Brown, William G.: *The Guggenheim safety competition tests and the Curtiss "Tanager."*
- *See* Giacomelli, R.: *La gara Guggenheim per il velivolo sicuro e i suoi risultati.*
- *See* Pleines, Wilhelm: *Bericht über das Ergebnis des amerikanischen Guggenheim-Sicherheits-Wettbewerbs.*
- *See* Trailing edge: *Fortschritte der Flugsicherheit. Die Erfolge des Guggenheim-Sicherheitswettbewerbs.*
- GUGGENHEIM competition. *The Guggenheim competition controversy.*
Aeroplane, Vol. 38, No. 13 (March 26, 1930), London, pp. 541-542.
- GUGGENHEIM, DANIEL. *Daniel Guggenheim (1856-1930).*
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, p. 1444.
- *Daniel Guggenheim. His gift to aviation.*
Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Calif., p. 35, port.
- *See* Daniel Guggenheim.
- *See* Land, Emory S.: *Daniel Guggenheim.*
- GUGGENHEIM, HARRY FRANK. *The seven skies.*
New York, London, G. P. Putnam's Sons, 1930, pp. 216, illus.
- GUGGENHEIM fund. *The Guggenheim fund dissolves.*
Aeroplane, Vol. 38, No. 12 (March 19, 1930), London, p. 468.
- *Guggenheim fund's activities conclude.*
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 72, 258, ports.
- *See* Bryan, F. I.: *The fund is ended, but its work still carries on.*
- GUGGENHEIM SAFE AIRCRAFT COMPETITION. *Slots and flaps take the lead.*
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., pp. 54-55, 134, illus.
- *See* Stimson, Thomas E., jr.: *The safest plane.*

GUILLAUME. La question de l'ornithoptère. "Le vol ramé des oiseaux."
Revue des Forces Aériennes, No. 16 (nov. 1930), Paris, pp. 1340-1363, ill.

— Le rendement des sections photographiques dans la guerre de mouvement.
Revue des Forces Aériennes, No. 13 (août 1930), Paris, pp. 955-968, diagrs.

GUILLEMENEY. L'aviation et les services de renseignements dans une guerre moderne.
Revue des Forces Aériennes, No. 11 (juin 1930), Paris, pp. 644-683, maps.

— Le bombardment aérien des installations industrielles. Le blocus du bassin de Brie. Revue des Forces Aériennes, No. 15 (oct. 1930), Paris, pp. 1151-1190, ill., maps, diagrs., tabls.

GUINEA AIRWAYS. An aerial freight-carrier for Guinea Airways.
Flight, No. 1137, Vol. 22, No. 41 (Oct. 10, 1930), London, pp. 1119-1120, illus.

GUSTOSA, CORRADO. Aerocaccia da difesa, monoposti da caccia, monoposti da allarme.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 11-34, illus., map.

— Chiarimenti sulla comparsa dei primi motori di aviazione a nafta.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 17-42, ill.

— I primi risultati dei voli dell'aerovascello Do-X.
Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 32-52, ill.

— Structural details of the giant Dornier seaplane "Do-X."
National Advisory Committee for Aeronautics, Technical Memorandums No. 546, Jan. 2, 1930, Washington, January 1930, pp. 25, illus.

— Uno sguardo alle nascenti aviazioni militari dei piccoli Stati di Europa.
Riv. Aeron., Anno 6, N. 6 (Giugno 1930), Roma, pp. 439-460, ill.

GUYNEMER. Guynemer.

Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 49-51, ill., port.

GUYOMAR. Le camp d'instruction de Cazaux.

Revue des Forces Aériennes, No. 17 (dec. 1930), Paris, pp. 1380-1403, ill., diagr.

— Le problème du contrôle du bombardement et la méthode du Lieutenant-Colonel Tétu.

Revue des Forces Aériennes, No. 7 (fév. 1930), Paris, pp. 167-185, ill.

— Le viseur S. T. Aé. et le bombardement en dérive d'un objectif fixe.
Revue des Forces Aériennes, No. 15 (oct. 1930), Paris, pp. 1214-1225, ill.

GYMNICH, ALFRED. Die Flughöhe als Faktor der Flugsicherheit.
Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, p. 138.

GYRORECTOR. Le Gyrorector.

L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, p. 106, ill.

L'Aérophile, 38e année, Nos. 1-2 (1er-15 jan. 1930), Paris, p. 16, ill.

GYROSCOPIC control. See Huggins, Marion: Gyropilot goes cross-country.

H

H. De nieuwe Amerikaansche marine-luchtschepen.

Het Vliegveld, 13de Jaarg., No. 1 (Jan. 1929), Amsterdam, pp. 8-9, ill.

— De ontvangst van Kingsford Smith en Stannage.

Het Vliegveld, 14de Jaarg., No. 8 (Aug. 1930), Amsterdam, pp. 249-253, ill.

— De Pan American airways.

Het Vliegveld, 14de Jaarg., No. 4 (April 1930), Amsterdam, pp. 123-129, ill.

— De terugkeer van Evert van Dijk.

Het Vliegveld, 14de Jaarg., No. 8 (Aug. 1930), Amsterdam, pp. 242-247, ill.

- H. H. De Transcontinental Air Transport-Maddux luchtlijnen.
Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 361-365, ill.
- In en om de Do-X.
Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 354-357, ill.
- Van twee luchtvaart-congresSEN.
Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, pp. 318-319, ill.
- HABERKORN, ERNST ERWIN. See Schiller, Hans von: "Im Zeppelin über der Schweiz."
- HACKETT, W. W. Weldless steel tubes and their uses.
Air annual of the British Empire 1930, London, pp. 268-272.
- HALL. Aero wheel brakes.
Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 212-213.
- HALL, ELZOR E. See Hartz, Rutherford S., and Elsor E. Hall: Airplane mechanics rigging handbook.
- HALL, HARRY, and IRWIN WARSHAUER. We go skylarking to far places.
National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 10-13, ill.
- HALL, NORMAN B. The new coast guard seaplanes.
U. S. Air Services, Vo. 15, No. 11 (Nov. 1930), Washington, pp. 25-26.
- HALL, NORMAN S. American aircraft builders.
The Sportsman Pilot, Vol. 3, No. 6 (June 1930), New York, pp. 32-33, ill.
- HALLEY, D. M. Gliding; course of instruction, theory and practice; covering material essential for the beginner to know, followed by a complete practical course of instruction in outline form.
Omaha, Neb., Rapid Air Lines Corp., 1930, pp. 48, ills.
- Putting the air service company over.
Airway Age, Vol. 11, No. 2. (Feb. 1930), New York, pp. 197-199, ill.
- HALLIBURTON, RICHARD. New worlds to conquer.
Indianapolis, Bobbs-Merrill Co., 1929, pp. 368, ill.
McClelland.
- HALLIDAY, A. S., and C. H. BURGE. Lateral stability calculations for the Bristol fighter aeroplane.
Aer. Res. Comm., Rep. Mem., No. 1306, (Ae. 446), February 1930, London, 1930, pp. 13, diagrs., tabls.
- HALLIDAY, A. S. Stability derivatives of the Bristol fighter.
Aer. Res. Comm., Rep. Mem., No. 1277, (Ae. 423), October, 1929, London, 1930, pp. 14, tabls., diagrs.
- HAMBURG. See Hohoff: Die Verbassierung sowie Ent- und Bewässerung des Rollfeldes auf dem Hamburger Flughafen.
- HAMBURG, MERRILL. Beginning to fly; the book of model airplanes.
Boston and New York, Houghton Mifflin Company, 1930, pp. xiv, 282, ills., diagrs.
- HAMEL, J. R. Elements de navigation aérienne pratique.
Paris, Vivien, 1930, pp. 128, ills.
- HAMMOND, WILLIAM. C. Flying the air route to Cuba.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 70-71, 246, ills.
- The West Indies aerial express.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 67-68, 202, ills.

- HANAWALT, WILBUR R.** 1929 exports indicate 1930 markets.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 164-165.
- HANDEL, PAUL VON, KURT KRÜGER und HANS PLENDL.** Quarzsteuerung von Kurzwellen-Empfängern.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 531-535, ill.
- HANDEL, PAUL VON.** Untersuchungen über quarzgesteuerte Schwingvorgänge.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 552-556, ill., diagrs.
- See Fassbender, Heinrich, und Paul von Handel: Neuere Versuche über die Ausbreitung von ultrakurzen Wellen.
- HANDLEY PAGE.** Handley Page, Ltd.
Air annual of the British Empire 1930, London, pp. 490-500, ill.
- Handley Page new aerodrome.
Flight, No. 1124, Vol. 22, No. 28 (July 11, 1930), London, pp. 779-781, ill.
- De Handley Page, type 42.
Het Vliegveld, 14de Jaarg., No. 12 (Dec. 1930), Amsterdam, pp. 415-417, ill.
- The Handley Page type 42 commercial airplane (British). A metal sesquiplane.
National Advisory Committee for Aeronautics, Aircraft Circular No. 131, Dec. 31, 1930, Washington, December 1930, pp. 8, ill.
- Handley Page type 42. The 42-seater at Radlett.
Flight, No. 1143, 1144, Vol. 22, No. 47, 48 (Nov. 21, 28, 1930), London, pp. 1370-1371, 1381-1385, ill.
- Le profil Villiers A-6 a fentes Handley-Page.
L'Aérophile, 38e année, Nos. 13-14 (15 juil. 1930), Paris, p. 211, diagr.
- See Hannibal: Introducing Hannibal. (Handley-Page 42).
- See Trailing edge: Fortschritte der Flugsicherheit. Die Erfolge des Guggenheim-Sicherheitswettbewerbs.
- HANDLEY PAGE, FREDERICK.** Preface, British Aircraft Industry.
Air annual of the British Empire 1930, London, pp. 217-225.
- See Burney, C. Dennistoun, and F. Handley Page: Airship versus aeroplane.
- HANGARS.** La costruzione degli hangars semplificata.
Notiziario Tecnico de Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 39-45, ill.
- Le grand hangar à dirigeables d'Akron.
L'Aéronautique, 12me année, No. 136 (sept. 1930), Paris, pp. 343-346, ill.
- Hangar construction simplified. Junkers "Lamellendach" in England.
Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, pp. 804-806, ill.
- Le hangar hexagonal.
L'Aéronautique, 12me année, No. 133 (juin 1930), Paris, pp. 234-235, ill.
- See Clark, Milton T.: Trends in hangar construction.
- See Goodyear-Zeppelin: Goodyear-Zeppelin luchtschiploods te Akron.
- See Kramer, George N.: Hexagonal hangar feature of Western Air Express terminal.
- See Landis, George G.: New motor driven hangar doors.
- See Notrus: Notrus hangars.
- See Raube, W. C.: Goodyear-Zeppelin hangar doors.

HANGARS. *See* Songia, Roberto: Hangars smontabili.

— See Thelin, C. Milo: Long bascule doors in new Fort Worth hangar.

— See Watson, Wilbur J. Design factors of airship dock at Akron.

HANKIN, E. HANBURY. Descending currents.

Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, p. 1488, illus.

HANNA, JOSEPH V. Aviation as a career.

New York, Kiwanis Club of New York City, 1930, p. 32, illus.

The young man and his career. Vocational Bulletin, No. 5.

HANNIBAL. Introducing Hannibal. (Handley-Page 42.)

The Aeroplane, Vol. 39, No. 21 (Nov. 19, 1930), London, pp. 1137-1140.

HANSEN, M. Velocity distribution in the boundary layer of a submerged plate.

National Advisory Committee for Aeronautics, Technical Memorandums No. 585, Oct. 2, 1930, Washington, October 1930, pp. 18, illus., diagrs.

HANSHUE, HARRIS M. The economic status of airline operation.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 57, 258, ill., port.

HANSON, ANONA. When a chapter spreads its wings.

National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 30-32, ill.

HANSON, EARL. Armstrong seadrome project progresses. Plans complete for installing first drome within a year.

Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 353-357, ill., diagrs.

— Legal aspects of the seadrome. International considerations with respect to the Armstrong development.

Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1555-1556, ill.

HAPPE. *See* Bourdier, L.: Le Lieutenant-Colonel Happe.

HARDECKER, JOHN F. The aeronautical uses of bakelite and similar products.

Aviation, Vol. 28, No. 4 (Jan. 25, 1930), New York, pp. 144-148, ill.

— Aircraft hardware.

Airway Age, Vol. 11, No. 10, 11 (Oct., Nov. 1930), New York, pp. 1308-1310, 1425-1426, ill.

— Merchandising begins in the drafting room.

Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 711-712.

— Sanitary plumbing for aircraft.

Aviation, Vol. 29, No. 4 (October 1930), New York, pp. 247-248, illus.

— Specializing the production of wooden parts.

Aviation, Vol. 28, No. 1 (Jan. 4, 1930), New York, pp. 20-22, ill.

— Standardization of small engine parts.

Aviation, Vol. 28, No. 17 (April 26, 1930), New York, 839-843, illus., tabls.

— Welding jigs and fixtures.

Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 4-9, illus.

HARDECKER, JOHN L. The development of the airplane chair.

Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 183-184, illus.

HARDWARE. *See* Hardecker, John F.: Aircraft hardware.

HARDY, J. K. Experimental comparison between a series of turns of different diameter on a Gloster IV seaplane.

Aer. Res. Comm., Rep. Mem., No. 1301, (Ae. 435), November 1929, London, 1930, pp. 6, illus., diagrs., tabls.

HARDY, RUSSELL F. Aircraft welding, including the development of an efficient welding department.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., p. 73.

HARGRAVE, LAWRENCE. *See* Salter, Cecil W.: Lawrence Hargrave.

- HARPER, HARRY. The evolution of the flying machine. Balloon: Airship: Aeroplane.
 London, Hutchinson & Co., [1930], pp. 288, ill.
- The romance of a modern airway.
 London, S. Low, Marston & Co., Ltd., 1930, xiii, 241, ill.
- HARPER, MAITLAND C. New York reserves complete active training at Mitchell Field.
 U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 49.
- HARRIS, R. G., L. E. CAYGILL, and R. A. FAIRTHORNE. Wind tunnel experiments on steam condensing radiators.
 Aer. Res. Comm., Rep. Mem., No. 1326, (E. 37), June 1930, London, 1930, pp. 28, ill., diagrs., tabs.
- Wind tunnel tests on Gloster and Supermarine wing radiators.
 Aer. Res. Comm., Rep. Mem., No. 1311 (Ae 450), June 1927, London, 1930, pp. 14, ill., diagrs., tabs.
- HARRIS, THOMAS A.: *See* Knight, Montgomery, and Thomas A. Harris: Experimental determination of jet boundary corrections for airfoil tests in four open wind tunnel jets of different shapes.
- HART, MORRIS D. The aeroplane as a source of sound.
 Aer. Res. Comm., Rep. Mem., No. 1310, May 1929, London, 1930, pp. 38, ill.
- HARTSHELL, H. Sailplaning.
 Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 113-115, ill.
- HARTSHORN, A. S. Wind tunnel tests of seven struts.
 Aer. Res. Comm., Rep. Mem., No. 1327 (Ae. 460), November 1927, London, 1930, pp. 12, ill., diagrs., tabs.
- HARTZ, RUTHERFORD S., and ELZOR E. HALL. Airplane mechanics rigging handbook.
 New York, The Ronald Press Company, 1930, pp. xi, 267, ill., diagrs.
- HATFIELD, W. H. Steels used in aero work.
 Air annual of the British Empire 1930, London, pp. 261-267, ill., tabs.
- HATTOOM, FRED L. Teaching women to fly.
 Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 63-64, ill.
- HAUPTMANN, FRIEDRICH. Ein Magnetkompass mit pneumatischer Fernübertragung.
 Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, pp. 232-234, ill.
- HAUS, E. CH. Etude dynamique de la vrille.
 Paris, E. Chiron.
- HAUSFELDER, L. The Junkers Diesel plane.
 Diesel Power, Vol. 8, No. 2 (Feb. 1930), New York, pp. 88-91, ill.
- HAWKER. The H. G. Hawker Engineering Company, Limited.
 Air annual of the British Empire 1930, London, pp. 501-509, ill.
- HAWKS. Captain Hawks holds all transcontinental speed records.
 U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, pp. 41-42.
- Un planeur remorqué du Pacifique à l'Atlantique.
 L'Illustration, 88e année, No. 4547 (26 avril 1930), Paris, pp. 542-543, ill.
- HAWKS, FRANK M. Flying the autogiro.
 U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 36-37.
- Gliding—an instructive sport.
 Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 53-54, ill.
- The sport of gliding.
 The Sportsman Pilot, Vol. 3, No. 5 (May 1930), New York, p. 42.

HAY, JAMES, jr. America's first air journey.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 77, 242, ill.

HAYA Y RODRIGUEZ. Los aviadores españoles Haya y Rodriguez conquistan tres "récords" mundiales.

Aérea, Año 8, Núm. 86 (Sepb.-Oct. 1930), Madrid, p. 3.

HAYDOCK, JOHN, jr. Metallurgy for Wasps and Hornets.

American Machinist, Vol. 73, No. 5 (July 31, 1930), pp. 189-192, illus.

HAYES, ROBERT. Airports of the future.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., p. 58, ill.

— Don't throw it away. Old material can be converted to other uses.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1310-1311, ill.

— A flying club plan which has worked well.
Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1552-1554, ill.

— Selling the private market.
Aerial Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1219-1221, diagrs.

— See Airports: Gli aeroporti del futuro.

HAYNES, H. GENE. Building the Indianapolis airport.

Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1569-1571, ill.

HAZEN, R. I. The new regulations for glider licensing.

Western Flying, Vol. 8, No. 1 (July 1930), Los Angeles, Cal., pp. 65-66.

HEALD, R. H., D. H. STROTHIER, and B. H. MONISH. Effect of variation of chord and span of ailerons on rolling and yawing moments at several angles of pitch.

National Advisory Committee for Aeronautics, Report No. 343, Mar. 15, 1930, Washington, U. S. Government Printing Office 1930, pp. 29, illus., diagrs., tabls.

HEART. See Strughold, H.: Kinematographische Studie der Herzgrossen bei Sauerstoffmangel. ("Direkteleffekt" auf das Herz.)

HEAT transfer. See Taylor, C. Fayette, and A. Rehbock: Rate of heat transfer from finned metal surfaces.

HEATERS. Le confort en avion.

L'Aérophile, 38e année, Nos. 3-4 (1 er-15 fév. 1930), Paris, p. 56, ill.

HEATH, SOPHIE MARY (PEIRCE-EVANS), and STELLA WOLFE MURRAY. Woman and flying.

London, J. Long, ltd., 1929, pp. 223, illus.

HEATING. See Reagan, L. S.: Heating airport buildings.

HEDRICK, A. F. See McNicholas, H. J., and A. F. Hedrick: The structure and properties of parachute cloths.

HEGENER, HENRI. De Amerika-vaart van de "Graf Zeppelin".

Het Vliegveld, 13de Jaarg., No. 3 (Maart 1929), Amsterdam, pp. 107-110, ill.

— De baanbrekers der dynamische luchtvaart XVII. Carl Friedrich Meerwein.

Het Vliegveld, 13de Jaarg., No. 1 (Jan. 1929), Amsterdam, pp. 19-20, ill.

— De baanbrekers der dynamische luchtvaart XVIII. Glenn Hammond Curtiss.

Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 63-66, ill.

— De baanbrekers der dynamische luchtvaart XIX. Sir Hiram Maxim.

Het Vliegveld, 13de Jaarg., No. 4 (April 1929), Amsterdam, pp. 152-154, ill.

— De geschiedenis van het valscherf.

Het Vliegveld, 13de Jaarg., No. 12 (Dec. 1929), Amsterdam, pp. 453-456, ill.

— De Holland-vaart van de "Graf Zeppelin".

Het Vliegveld, 13de Jaarg., No. 11 (Nov. 1929), Amsterdam, pp. 401-402, ill.

- HEGENER, HENRI.** De Luchtvaart-Salon te Parijs.
 Het Vliegveld, 14de Jaarg., No. 12 (Dec. 1930), Amsterdam, pp. 392-394, ill.
- De inherente onstabiliteit van luchtschepen.
 Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 368-371, ill.
- De noodlottige hoogtevaart van de "Zenith".
 Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 16-19, ports., ill.
- Een taalwacht voor de luchtvaart.
 Het Vliegveld, 14de Jaarg., No. 4 (April 1930), Amsterdam, pp. 108-109.
- Over de maand die heen ging.
 Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, pp. 316-317.
- HEINKEL.** Heinkel-Flugzeug-Katapult K 4 auf dem Schnelldampfer "Europa" des Norddeutschen Lloyd.
 Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 278-284., ill.
- HEINRICH, ALBERT S.** Higher aspect ratios for stability—effects of the air-wheel.
 Aviation, Vol. 28, No. 11 (March 15, 1930), New York, p. 525.
- HEINZE, EDWIN P. A.** Deutsche Luft Hansa in 1929.
 Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, p. 160.
- Dr. Rumpler's trans-ocean airliner.
 Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 41, 152, ill.
- International touring competition. Beginning of technical tests.
 Flight, No. 1128, 1129, 1131, Vol. 22, No. 32, 33, 35 (Aug. 8, 15, 1930), London, pp. 886-890, 912-915, 967-968, illus.
- The Rumpler twin-hull, flying boat. Is the giant transocean plane coming?
 Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, pp. 1475-1477, ill.
- HELBIG.** Jugendbewegung und motorloser Flug im Deutschen Luftfahrt-Verbande. Statistischer Rückblick 1929.
 Luftschaus, 3. Jahrg., Nr. 9. (10. Mai 1930), Berlin, p. 68, diagrs.
- HELDT, P. M.** Engine performance at high altitudes studied by the Bureau of Standards.
 Automotive Ind., Vol. 63, No. 8 (Aug. 23, 1930), New York, pp. 256-258, ill.
- HELICOPTERS.** Curtiss-Bleeker helicopter.
 Curtiss-Wright Review, Vol. 1, No. 4 (July 1930), New York, pp. 1-3, ill.
- Italian helicopter.
 Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, p. 62, ill.
- See Bréguet, Louis: Les hélices de sustentation.
- See Curtiss: Curtiss-Bleeker helicopter.
- See D'Ascanio: The D'Ascanio helicopter. A successful Italian experiment.
- See G., R.: The D'Ascanio helicopter.
- See Lajos, Rotter: A helikopter probléma.
- HELIUM.** Helium for airships.
 The Aeroplane, Vol. 39, No. 18 (Oct. 29, 1930), London, p. 970.
- Helium record costs.
 Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, p. 1051.
- Helium-Vorräte.
 Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, pp. 80-81.

HELIOUM. La producción de helio en los Estados Unidos de Norteamérica.
Iberica, Año 17, Núm. 851 (8 nov. 1930), Barcelona, p. 277.

— See Beelitz, Helmut: Der gegenwärtige Stand der Heliumgewinnung und Heliumforschung.

— See Milner, Henry B.: The de-nationalisation of helium.

— See United States Congress. House. Committee on Mines and Mining: Amarillo helium plant.

HELMORE, W. Engine performance with gaseous fuels. Part I.—Characteristics and engine performance of gaseous fuels obtained from oil. Part II.—Engine performance from kerosene oil gas mixtures.

Aer. Res. Comm., Rep. Mem., No. 1265, (E. 33), September, 1928, London, 1930, pp. 54, illus., tables, diagrs.

— Experiments on flame extinction in gaseous mixtures.

Aer. Res. Comm., Rep. Mem. No. 1266, (E. 34), January, 1929, London, 1930, pp. 17, illus., tables.

HENDERSON. The Henderson "Hendy" 302 cabin airplane (British). A two-seat low-wing cantilever monoplane.

National Advisory Committee for Aeronautics, Aircraft Circulars No. 126, Sept. 19, 1930, Washington, September 1930, pp. 4, ill.

HENDERSON, G. L. P. A complete course of practical flying; learning to fly—differently.

London, J. Hamilton Ltd., 1930, pp. 255, illus.

HENDERSON, PAUL. Air transportation.

Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 16-17, 56-58, 65, ill.

HENDON. See Valdecilla, J. H.: La undécima fiesta aérea de la R. A. F.

HENDY. The "Hendy" 302. A low-wing cabin monoplane with Cirrus-Hermes engine.

Flight, No. 1130, Vol. 22, No. 34 (Aug. 22, 1930), London, pp. 938-942, illus.

HENDRICKSON, HENRY BRENTON. Duration flights during 1929.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 64-65, 272, ports, diagrs.

— Thermometric lag of aircraft thermometers, thermographs, and barographs.

United States Bureau of Standards, Journal of Research, Vol. 5, No. 3 (Sept. 1930), Washington, pp. 695-709, ill., diagrs.

HENSON, WILLIAM SAMUEL. See Ross, Malcolm: The Henson "Ariel."

HERMUTH, PAUL. Der junge flugzeugbauer; eine anleitung zum bau von flugmodellen . . .

Stuttgart, Union deutsche Verlagsgesellschaft [1929], pp. 103, illus., diagrs.

HERRERA, EMILIO. El accidente del "Graf Zeppelin" y la linea aérea Sevilla-Buenos Aéres.

Iberica, Año 16, Núm. 783 (22 junio 1929), Barcelona, pp. 396-397.

— Causes probables de la catástrofe del "R. 101."

Iberica, Año 17, Núm. 855 (6 dic. 1930), Barcelona, pp. 337, 344-346, ill.

— El pilotaje ciego de los aviones.

Iberica, Año 16, Núm. 764 (9 Feb. 1929), Barcelona, pp. 85-87.

— Primer viaje a sudamérica del "Graf Zeppelin" y doble viaje trasatlántico del "R-100."

Iberica, Año 17, Núm. 845 (27 de sept. de 1930), Barcelona, pp. 177, 184-190, ill., maps.

— Una turbonada en el viaje trasatlántico del "Graf Zeppelin."

Iberica, Año 16, Núm. 776 (4 mayo 1929), Barcelona, pp. 280-283, ill.

HERRMANN, H. Über die Wirtschaftlichkeit in der Fertigung der verschiedenen Bauverfahren von Flugzeugen.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 21, 22. Heft (14. 28. Nov. 1930), München, pp. 553-563, 580-586, ill., diagrs.

HERRNSTEIN, WILLIAM H., jr. Full scale drag tests on various parts of Fairchild (FC-2W2) cabin monoplane.

National Advisory Committee for Aeronautics, Technical Notes No. 340, May 29, 1930, Washington, May 1930, pp. 14, ill., diagrs., tabls.

HERRON, W. G. The new air mail act—What its application will do for aviation. Western Flying, Vol. 7, No. 6 (June 1930), Los Angeles, Cal., pp. 40-43, port.

— New life for air lines.

Western Flying, Vol. 8, No. 3 (Sept. 1930), Los Angeles, Cal., pp. 46-49, diagrs., tabls.

HERTEL, HEINRICH. Determination of the maximum control forces and attainable quickness in the operation of airplane controls.

National Advisory Committee for Aeronautics, Technical Memorandums No. 583, Sept. 18, 1930, Washington, September 1930, pp. 31, ill., diagrs., tabls.

— Ermittlung der grössten aufbringbaren Steuerkräfte und erreichbaren Geschwindigkeiten der Steuerbetätigung.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 101-110, ill., diagrs., tabls.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 2. Heft (28. Jan. 1930), München, pp. 36-45, ill., diagrs., tabls.

— Knickversuche mit schlanken verkleideten Stäben.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 183-199, ill., diagrs., tabls.

Luftfahrtforschung, Band 8, Heft 1, 1930, München und Berlin, R. Oldenbourg.

HICKS, CHESTER W. See Joachim, William F., Chester W. Hicks, and Hampton H. Foster: The design and development of an automatic injection valve with an annular orifice of varying area.

HIGGINS, ERIC L. Ipswich municipal aerodrome.

The Aerodrome, Vol. 38, No. 25 (June 18, 1930), London, pp. 1170-1174, maps, ill.

HILBES, W. Riveted joints in thin plates.

National Advisory Committee for Aeronautics, Technical Memorandums No. 590, Nov. 10, 1930, Washington, November 1930, pp. 15, ill., diagrs.

HINGSBURG, F. C. Air navigation facilities.

Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 69-74, ill., maps.

— Intermediate landing fields.

Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 516-518, ill., diagr.

HINSHAW, HAINER. Retreating horizons.

U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 34-35.

HIRSCHAUER, L., et CH. DOLLFUS. L'année aéronautique 1929-1930.

Paris, Dunod, 1930, pp. 461, ill., maps.

HIRTH, WOLF. Why soaring creates better flyers.

National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 14-16, ill.

HISPANO-SUIZA. Due nuovi motori Hispano-Suiza.

Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 126-128, ill.

HISTORY. See Andrée, Salomon August: The discovery of Andrée's body in the Arctic ice: The pioneer of polar aeronautics found after 33 year's.

— See B., G.: Ai margini della storia. L'aeronautica nelle città italiane.

— See Boffito, Giuseppe: L'aeronautica nelle città italiane. Torino V.-L'aerostato-battello-vapore di Vincenzo Lanzillo (1875).

— See Buckley, Harold R.: Sportmen pilots of 1918.

- HISTORY. *See* Carrera Justiz, Pablo: *La aviacion.*
- *See* Chanute, Octave: *The crystal gazing of Octave Chanute.*
- *See* Fraser, Chelsea Curtis: *Heroes of the air.*
- *See* Giacomelli, R.: *The aerodynamics of Leonardo da Vinci.*
- *See* Giacomelli, R.: *A proposito del progetto di fondazione della prima associazione aerotecnica.*
- *See* Goldstrom, John: *A narrative of aviation.*
- *See* Gwynemer: *Gwynemer.*
- *See* Harper, Harry: *The evolution of the flying machine.* Balloon: Airship: Aeroplane.
- *See* Hay, James, jr.: *America's first air journey.*
- *See* Hegener, Henri: *De noodlottige hoogtevaart van de "Zenith."*
- *See* Italy: *L'aeronautica nelle città italiane.* Napoli II.—Il primo napoletano in pallone.—Ascensioni a Napoli avvenute in varii tempi.—I saggi aeronautici dell'abate Professor Vincenzo Curzio (1805) e del tenente colonnello del Genio Marco Antonio Costa (1837).
- *See* Meerwein, Carl Friedrich: *De baanbrekers der dynamische luchtvaart XVII.*
- *See* Morelli, Ercole: *Il Museo Storico della R. Aeronautica.*
- *See* Nayler, J. L., and E. Ower: *Aviation of to-day. Its history and development.*
- *See* New York Times: *Catalog, the New York Times antarctic and aviation exhibit, together with a chronology of historic events in aviation.*
- *See* Persia: *Early Persian pursuit plane.*
- *See* Polesine, Jotti da Badia: *Ai margini della storia. Documenti sull'italianità di Blanchard.*
- *See* Salier, Cecil W.: *Lawrence Hargrave.*
- *See* Spencer, G. K.: *Pioneer women of aviation.*
- *See* Steinmetz, Charles P.: *America's first glider club.*

HOARE, SAMUEL. Air communications. Sir Samuel Hoare at the Bonar Law College.

Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, pp. 1096-1097.

HOBBS, DOUGLAS B. Aluminum forgings and castings applied to aircraft.
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 98-99, tabs.

HODGINS, ERIC, and F. ALEXANDER MAGOUN. Sky high.
Boston, Little, Brown & Co., 1929, pp. xx, 337, ill.
McClelland.

HOECK, JAMES. A flying tour of the Philippines.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 55-57, ill.

HOEPPNER, GERD VON. Gedanken zum Internationalen Rundflug 1930.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 19. Heft (14. Okt. 1930), München, pp. 489-490.

HOFF, WILH. Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., Berlin-Adlershof.
München und Berlin, Verlag von R. Oldenbourg, 1930, pp. xxiv, 50, 688, ill.

HOFF, WILH. Technical reports. Nr. 144. Elastische Nachwirkung, elastische Hysteresis und Temperatur-Kompensation an aneroiddosen, von L. Scriba, pp. 1-30. Nr. 167. Aufzeichnen schneller Schwingungen nach dem Ritzverfahren, von W. Pabst, pp. 31-36. Nr. 168. Luftkräfte und Luftkraftmomente bei grossen Anstellwinkeln und ihre Abhängigkeit von der Tragwerksgestalt, von R. Fuchs und W. Schmidt, pp. 37-48. Nr. 174. Flugversuche zur Bestimmung der statischen Längsstabilität, von H. Blenk, pp. 49-53. Nr. 175. Göttinger Sechskomponentenmessungen an einem Modell des Flugzeugmusters Junkers A 35, von H. Blenk, pp. 54-60. Nr. 180. Über die Längsstabilität eines Flugzeugs mit losgelassenem Höhensteuer, von H. Blenk, pp. 61-68. Nr. 181. Theorie des Landestosses von Seeflugzeugen, von W. Pabst, pp. 69-78. Nr. 182. Resonanzschwingungen von Luftschauben, von F. Liebers, pp. 79-94. Nr. 142. Versuche mit einer neuen Spornform für Flugzeuge, von F. Michael, pp. 95-100. Nr. 169. Ermittlung der grössten aufbringbaren Steuerkräfte und erreichbaren Geschwindigkeit der Steuerbetätigung, von H. Hertel, pp. 101-110. Nr. 176. Nietverfahren im Metallflugzeugbau, von W. Pleines, pp. 111-182. Nr. 178. Knickversuche mit schlanken, verkleideten Stäben, von H. Hertel, pp. 183-199. Nr. 179. Versuche mit kurzen Bolzen in Holzbauteilen, von A. Teichmann, und K. Borkmann, pp. 200-220. Nr. 183. Einspannwirkung bei Knickstäben in Flugzeugfachwerken, von A. Teichmann, pp. 221-226. Nr. 194. Optisch-photographische Formänderungsmessungen an Luftfahrzeugen, von H. G. Küssner, pp. 227-234. Nr. 195. Beitrag zur Frage des Ausbulens von versteiften Platten bei Schubbeanspruchung, von E. Seydel, pp. 235-254. Nr. 145 Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin," von W. Kamm und A. Stieglitz, pp. 255-264. Nr. 156. Die Gestaltung des Luftfahrzeugmotors, von W. Kamm, pp. 265-269. Nr. 157. Einfluss des Triebwerksgewichts auf die Flugleistungen, von M. Schrenk, pp. 270-274. Nr. 158. Die Schwingungen in Luftfahrzeug-Triebwerkanlagen, von K. Lürenbaum, pp. 275-280. Nr. 159. Neuere Ergebnisse auf dem Gebiete der Kurbelwellenschwingungen, von A. Stieglitz, pp. 281-288. Nr. 160. Thermodynamische Aufgaben der Luftfahrtforschung, von K. Löhner, pp. 289-298. Nr. 161. Versuchseinrichtungen für Forschungsarbeiten an Luftfahrzeugmotoren, von W. Janson, pp. 299-303. Nr. 162. Aufzeichnung rasch verlaufender Druckvorgänge mittels des Verfahrens der halben Resonanzkurve, von K. Schnauffer, pp. 304-314. Nr. 151. Beurteilung von Flugmotorenkraftstoffen in Deutschland, von E. Rackwitz und A. v. Philippovich, pp. 315-319. Nr. 152. Anforderungen an Kraftstoffe für Flugzeuge und Kraftwagen im Ausland, von E. Rackwitz und A. v. Philippovich, pp. 320-325. Nr. 153. Das Kälteverhalten von Kraftstoffen zur Verwendung in Luftfahrzeugen, von E. Rackwitz und A. v. Philippovich, pp. 326-334. Nr. 154. Der Schwefelgehalt von Kraftstoffen und seine Bedeutung für den Flugbetrieb, von E. Rackwitz und A. v. Philippovich, pp. 335-340. Nr. 170. Neue Untersuchungen über den Einfluss von Fe, Si, und Mn auf die Duralumin-Veredelung, von K. L. Meissner, pp. 341-346. Nr. 177. Drähte, Litzen und Seile im Flugzeugbau, von M. Abraham, pp. 347-410. Nr. 190. Dauerbiegeversuche mit Hölzern, von O. Kraemer, pp. 411-420. Nr. 191. Oberflächenschutz von Sperrholz, von E. K. O. Schmidt, pp. 421-427. Nr. 192. Über Sperrholzleime, von O. Gerngross, pp. 428-433. Nr. 193. Der Einfluss der Leimung auf die Güte von Flugzeugsperrholz, von O. Kraemer, pp. 434-442. Nr. 196. Kurbelwellenbrüche und Werkstofffragen, von K. Matthaes, pp. 443-472. Nr. 184. Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffes LZ 127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL, von O. Lacmann und W. Block, pp. 473-482. Nr. 185. Das Behilot für Flugzeuge und die mit

HOFF, WILH.—Continued.

ihm erzielte Genauigkeit, von E. Schreiber, pp. 483-490. Nr. 186. Die Anwendung von Libellen bei nautischen Höhenwinkelmessern, von W. Block, pp. 491-500. Nr. 187. Untersuchung von organischen Farbstoffen auf ihre Verwendbarkeit für Lichtfilterzwecke, von F. Leiber, pp. 501-508. Nr. 188. Neue Wege zur Steigerung der Lichtempfindlichkeit von photographischen Emulsionen, von U. Schmieschek, pp. 509-515. Nr. 189. Untersuchungsergebnisse von 61 photographischen Emulsionen des Handels, von U. Schmieschek, pp. 516-524. Versuche mit ultrakurzen Wellen im Flugzeugverkehr, von H. Fassbender, pp. 525-530. Nr. 141. Quartzsteuerung von Kurzwellen-Empfängern, von P. v. Handel, K. Krüger und H. Plendl, pp. 531-535. Nr. 146. Über Kurzwellenempfang in beweglichen Stationen, von K. Krüger, pp. 536-538. Nr. 147. Hochfrequenzsteuerung mit Gitterstrom, von H. Plendl, pp. 539-543. Nr. 148. Anwendung der Silbenverständlichkeitsmessungen in der drahtlosen Telephonie, von F. Eisner, pp. 544-551. Nr. 149. Untersuchungen über quarzgesteuerte Schwingvorgänge, von P. v. Handel, pp. 552-556. Nr. 150. Der gegenwärtige Stand der Technik und der Betriebsorganisation des deutschen Flugfunkwesens, von H. Fassbender und F. Eisner, pp. 557-570. Nr. 163. Über Flugfunkpeilungen, von M. H. Gloeckner, pp. 571-578. Nr. 171. Über die Sendecharakteristik von Flugzeugschleppantennen, von G. Sudeck, pp. 579-586. Nr. 172. Bericht über die Aufnahme der Strahlungskennlinien des Kurzwellen-Richtstrahlsystems D G Y in Nauen, von K. Krüger und H. Plendl, pp. 587-596. Nr. 173. Untersuchung über die Ausbreitungsdämpfung elektromagnetischer Wellen und die Reichweite drahtloser Stationen im Wellenbereich 200 bis 2000 m., von H. Fassbender, F. Eisner und G. Kurlbaum, pp. 597-610. Nr. 143. Stabilitätseigenschaften und Steuerbarkeit der deutschen Landflugzeuge, von W. Hübner, pp. 611-618. Nr. 164. Einfliegen und Nachfliegen neuer Flugzeugmuster, von J. v. Köppen, pp. 619-622. Nr. 165. Vergleichende Flugleistungsmessungen mit verschiedenen Flugzeugmustern von W. Pleines, pp. 623-637. Nr. 166. Stabilitäts- und Steuerkraftmessungen an einem Flugzeug von Muster Junkers F 13 ge, von W. Hübner, pp. 638-644. Nr. 155. Die Atmung des Höhenfliegers, von W. Kaiser, pp. 645-672. Von den Gefahren des Luftmeers, von H. Koppe, pp. 673-681. Gesamtverzeichnis der DVL-Berichte 1912/13 bis 1929/20, nach Sachgebieten geordnet, pp. 682-688.

HOHENEMSER, K. Impact tests on rubber compressed springs for airplane landing gears.

National Advisory Committee for Aeronautics, Technical Memorandums No. 572, July 3, 1930, Washington, July 1930, pp. 14, illus., diagrs.

— Stossversuche an Druckgummifederungen für Flugzeugfahrgestelle.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 6. Heft (28. März 1930), München, pp. 133-137, illus., diagrs.

HOHOFF. Die Verbesserung sowie und Ent-Bewässerung des Rollfeldes auf dem Hamburger Flughafen.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 16. Heft (28. Aug. 1930), München, pp. 419-421, ill.

HOLLAND. See Lamarche, Paul E.: The Dutch rise to the occasion.

HOLLAND, MAURICE. Aviation's apostles . . . Thurman H. Bane.

The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 28-29, 50, ill.

HOLLANDER, HERBERT S. Marketing American airplane material abroad.

Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 531-533, ill.

HOLLANDIA. See Cannegieter, H. G.: Ballonvaarten van de "Hollandia" en "Neerlandia."

HOLLANDIA. *See* Hoop, A. N. J. Th. à Th. van der: De vaart van de "Hollandia" op 15-16 Juni 1930.

HOLLYHOCK, W. S. Tube stocks.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, pp. (972g-972h), 63-64.

HOLM, FRITZ. Handbuch für den Flugzeugbau.

Allenstein, Verlag W. E. Harisch Nachf. G. m. b. H., 1930, pp. 53+168, ill.

HOLME, JOHN C., jr. College sport flying.

The Sportsman Pilot, Vol. 3, No. 3 (March 1930), New York, pp. 21, 41, ill.

— Surveying the airport problem in New York city.

Aviation, Vol. 28, Nos. 2, 4, 5 (Jan. 11, 25, Feb. 1, 1930), New York, pp. 56-58, 157-161, 198-200, maps.

HOLMES, NOVETAH. It doesn't take courage to fly—That's absurd.

U. S. Air Services, Vol. 15, No. 7 (July 1930), Washington, pp. 36-37, port.

HOLROYD, F. Racing seaplanes.

Journ. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 423-437, diagrs.

HONG-KONG. Air developments in Hong-Kong.

The Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 222.

HOOKER, S. G. On the vortex system in the wake of a cylinder in a fluid.

Philosophical Magazine, Vol. 9, No. 57 (March 1930), pp. 489-502.

HOOP, A. N. J. TH. à TH. VAN DER. De vaart van de "Hollandia" op 15-16 Juni 1930.

Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, pp. 213-215, ill.

HOOVER, HERBERT. The President presents Medal of Honor to Rickenbacker.

U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 32-33, ill.

— *See* Bergstrom, Florence O.: Hoover presents special medal to Byrd.

HOOVER, HERBERT, jr. Blind flying and radio (Part 1).

Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 59-61, ills., maps.

— Blind flying and radio (Part 2).

Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 44-45, ills.

— Communication problems in scheduled air transportation.

Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 64-65, ills.

— The function of aircraft radio.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 61-63, ills., maps, port.

— Long-wave radio receivers in aircraft.

Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 60-61, 226, ills.

— Radio in air transport operation.

Journ. Soc. Automotive Eng., Vol. 26, No. 3 (March 1930), New York, p. 321.

— Radio on the world's airlines.

Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, pp. 38-39, 168, 170, ills.

— Radio reception versus ignition interference.

Aero Digest, Vol. 16, No. 3 (March 1930) New York, pp. 60-61, 222, ills.

— Two-way radio communication in air transport service.

Aero Digest, Vol. 16, Nos. 4, 5 (April, May 1930), New York, pp. 62-63, 278, 57, 260, ills., diagrs.

HOPF, LUDWIG. *See* Gilles, A., L. Hopf, und Th. v. Kármán: Vörtrage aus dem gebiete der aerodynamik und verwandter gebiete (Aachen 1929).

HORIZON. *See* Offermann, E.: Der Flug ohne Horizont.

HORNS. New super-power horn for airports.

Airway Age, Vol. 11, No. 7 (July 1930), New York, p. 972, ill.

- HORSE-POWER. *See* Miller, Howell W.: Determining horse-power from flight tests.
- HOTINE, M. Professional papers of the air survey committee. No. 5. Calibration of surveying cameras.
London, H. M. Stationery Office, 1929, pp. 81, ill.
- Professional papers of the air survey committee. No. 6. Extensions of the "Arundel" method.
London, H. M. Stationery Office, 1929, pp. 116, ill., maps.
- HOVGARD, P. E. Why they spin the way they do.
Aviation, Vol. 28, No. 15 (April 15, 1930), New York, pp. 758-762, ill., diagr.
- HOWARD, EDWARD P. Flight training as a means of insuring safety.
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Cal., pp. 142-143.
- HOWARD, H. B. Certificates of airworthiness.
Journ. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 361-383, tabls.
- HOWARD-FLANDERS, LEONARD. Gliding.
Air annual of the British Empire 1930, London, pp. 191-196.
- HOWARD-FLANDERS, LEONARD, and C. F. CARR. Gliding and motorless flight.
London, New York, Sir I. Pitman & Sons, Ltd., 1930, pp. xi, 114, ill.
- HOYT, KENDALL K. Alaskan airways make rapid progress.
Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 894-896, ill.
- HROMADA, JOSEPH C. Aircraft radio receivers and broadcast service.
Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 922-925, ill.
- HUBBARD, HENRY VINCENT, MILLER MCCLINTOCK, FRANK B. WILLIAMS, PAUL MAHONEY and HOWARD K. MENHINICK. Airports, their location, administration and legal basis.
Cambridge, Harvard University Press, 1930, pp. xvi, 190, ill.
- HUDSON, MANLEY OTTMER. Aviation and International law.
American Journal of International Law, Vol. 24, 1930, Concord, N. H., pp. 228-240.
- HÜBNER, WALTER. Anweisung für die Prüfung der Eigenschaften von Flugzeugen.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 20. Heft (28. Okt. 1930), München, pp. 529-533.
- Messung der Höhensteuerkräfte und der Längsstabilität eines Flugzeuges vom Muster Junkers F. 13 ge.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 638-644, ill., diagrs.
- Relation between the stability characteristics and the controllability of German airplanes.
National Advisory Committee for Aeronautics, Technical Memorandums No. 551, Feb. 6, 1930, Washington, February 1930, pp. 23, ill., diagrs.
- Stabilitätseigenschaften und Steuerbarkeit der deutschen Landflugzeuge.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 610-618, ill., diagrs.
- Der technische Teil des 2. Internationalen Rundflugs 1930.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 19. Heft (14. Okt. 1930), München, pp. 512-523, ill., tabls.
- HÜNEFELD, E. G. FREIHERR VON. Mein ostasienflug.
Berlin, Union Deutsche Verlags-gesellschaft.
- HUGERSHOFF, R. Fotogrammetria ed aerofotografia.
Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 96-97.
- Photogrammetrie und Luftbildwesen.
Handbuch der Wissenschaftlichen und angewandten Photographie, Vol. 7, Julius Springer, Vienna, 1930, pp. 264, ill.

- HUGGINS, MARION. Gyropilot goes cross-country.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 51-52, 208, illus.
- HUGUENARD, E., A. MAGNAN, et A. PLANIOL. Aérologie.—Sur une méthode de mesure de la turbulence de l'atmosphère.
C. R. Acad. Sci., T. 190, No. 24 (16 juin 1930), Paris, pp. 1437-1439, ill.
- HUGUENARD, E., A. MAGNAN, et A. SAINTE LAGUE. Sur la détermination expérimentale des polaires d'avions en vol.
Service Technique de l'Aéronautique, Bulletin technique No. 62, Paris.
- HUME, D. C. M. Branch lectures. Some technical notes on Canadian aviation.
Journ. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 384-399, ill.
- HUMPHREYS, W. J. Meteorology and its importance to aviation.
Monthly Weather Review, Vol. 58, No. 5 (May 1930), Washington, pp. 196-197.
- HUNGARY. *See* Jeno, Kara: Justice for Hungary.
- HUNT, ROCKWELL DENNIS, and WILLIAM SHEFFIELD AMENT. Oxcart to airplane.
Los Angeles, San Francisco, Powell Publishing Company, 1929, pp. 458, illus.
- HUNTINGTON, DWIGHT. Design of low-priced airplanes.
Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, pp. 80-82, illus., tabs.
- HUREL, M. Pour marcher à la meilleure vitesse en tenant compte du vent.
Rev. Soc. Gen. Aéron., Avril 1930, Argenteuil, p. 4, diagr.
- HUTCHINSON, HOWARD B. Fog situation in the United States during the Winter 1928-29.
Cambridge, 1930, pp. 25, illus.
(Mass. inst. tech. Met'l course. Prof. notes, no. 3.)
- HUTTON, C. T. *See* Ower, E., and C. T. Hutton: Investigation of the boundary layers and the drags of two streamline bodies.
- HYDRO-CARBONS. *See* Andant, A.: Spectres d'absorption ultraviolets de quelques carbures d'hydrogènes.
- HYDRODYNAMICS. *See* Courrègelongue, J., et H. Maugein: Hydrodynamique expérimentale. Sur quelques expériences d'auto-oscillation et d'autorotation de plaques immergées.
- *See* Dupin, Pierre: Hydrodynamique. Sur la vibration des tiges cylindriques dans l'eau sous l'influence des tourbillons alternés.
- *See* Fediaevsky, K.: L'effetto del gradiente di pressione statica sul l'aumento di resistenza.
- *See* Garner, H. M., and L. P. Coombes: The determination of the water resistance of seaplanes.
- *See* Kármán, Theodore von: Mechanische Ähnlichkeit und Turbulenz.
- *See* Pabst, Wilhelm: Vergleich zwischen theoretischer und experimenteller Ermittlung des Stosses eines auf die Wasseroberfläche auftreffenden Kegels.
- *See* Piercy, N. A. V.: The turbulence in front of a body moving through a viscous fluid.
- *See* Pistolesi, E.: Lo studio cinematografico dei fenomeni idrodinamici.
- *See* Raimondi, E.: Un nuovo fenomeno di idro-aero-dinamica.
- *See* Raimondi, E.: Sopra due notevoli formole vettoriali che trovano impiego in idro-aerodinamica.
- *See* Schiller, Ludwig: Hydro- und Aero-dynamik.
- *See* Sothwell, R. V., and Letitia Chitty: On the problem of hydrodynamic stability.—1. Uniform shearing motion in a viscous fluid.

HYDRODYNAMICS. *See* Ugolini, Giovanni B.: Contributo sperimentale allo studio del regime uniforme laminare.

— *See* Walther, P. A.: Fondamenti della teoria idrodinamica della cassa a spirale (chiocciola) delle turbine idrauliche.

HYDROPLANES. *See* Denham, T. S.: Speed! With an introduction by Professor A. M. Low.

— *See* Sumner, Percy James Hammond: Marine aircraft; elementary naval architecture.

I

ICE. Ice protection developed.

Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 702, 704.

— *See* Clapp, V. O.: The formation of ice on aircraft.

— *See* Geer, William C., and Merit Scott: The prevention of the ice hazard on airplanes.

— *See* Knight, Montgomery, and William C. Clay: Refrigerated wind tunnel tests on surface coatings for preventing ice formation.

— *See* Reyneker, F. H.: De vorming van ijs op blootgestelde deelen van een vliegtuig in de vlucht. Door Thomas Carroll en Wm. H. McAvoy.

— *See* Scott, Merit: Ice formation on aircraft and its prevention.

ICELAND. *See* Ernst, D.: Das 1000 Jährige Island im kommenden Welt-Luft-Verkehr.

IDAHO. Idaho aeronautical laws.

[Boise], 1929, pp. 23. Department of Public works. Aeronautics Division. Aeronautics Bulletin, No. 1.

IDE, JOHN JAY. A flight in the Dornier Do. X flying ship.

U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 22-25, ill.

— International aeronautic organizations.

Flight, No. 1131, 1132, 1133, Vol. 22, No. 35, 36, 37 (Aug. 29, Sept. 5, 12, 1930), London, pp. 975-976, 1004-1005, 1027.

U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, pp. 29-33, 58, 60, 62, ill.

IDENTIFICATION. *See* Fechet, James E.: Identifying army aircraft.

IGNITION *See* Peters, Melville F., Wayne L. Summerville, and Merlin Davis. An investigation of the effectiveness of ignition sparks.

— *See* Stokes, P. H.: Performance of a compression ignition unit with reduced intake and exhaust pressures.

“**IKONA.**” London-Capetown. The facts—and an alternative.

Flight, No. 1132, Vol. 22, No. 36 (Sept. 5, 1930), London, pp. 1001-1003, map.

ILLINOIS. *See* G., J. A.: Aircraft law of Illinois—comparison with uniform state law.

IMMELMANN, MAX. Mes vols de combat.

Paris, Librairie des sciences aéronautiques F.-Louis Vivien. Traduit de l'allemand par Paul Stehlin.

IMPERIAL air routes. *See* Salt, Alexander Edward Wrottesley: Imperial air routes.

IMPERIAL air transport. *See* Grey, Charles Grey: On imperial air transport.

IMPERIAL airways. Britain's share in building giant passenger aircraft: A 40-seater of the new Imperial Airways fleet.

Illustrated London News, Vol. 177, No. 4779 (Nov. 22, 1930), London, pp. 928-929, ill.

IMPERIAL airways. Imperial airways.

Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, pp. 1080-1080.

— The policy of Imperial Airways.

The Aeroplane, Vol. 39, No. 2 (July 9, 1930), London, pp. 143-149.

— See Airways: The progress of Imperial Airways, 1929-1930.

— See Cyprus: By Cyprus to the East.

INCAS. See Johnson, George R.: Plane rescue in the jungle.

INDIA. Army regulations, India. Pay and allowance regulations for the Royal Air Force in India. Corrected up to 31st January 1928.

Calcutta, Government of India Central Publication Branch, 1930, pp. x, 93, tabs.

— Indians as pilots.

Aeroplane, Vol. 38, No. 15 (April 9, 1930), London, p. 668.

— De nieuwe serie Indië-postvluchten der K. L. M.

Het Vliegveld, 14de Jaarg., No. 1, 2 (Jan., Feb. 1930), Amsterdam, pp. 2-3, 38-40.

— Op 'n Pander naar Indië.

Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 357-358, ill.

— De postvluchten op Indië.

Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, pp. 319-320, ill.

— Register of aerodromes and landing grounds in India. Available for use by civil aircraft. 1929.

Calcutta, Government of India Central Publication Branch, 1930, pp. 63, ills.

— See Ali, Barkat: The wind at Agra and its structure.

— See Ghosh, U. N.: Distribution of air density at M. S. L. over India.

— See Normand, C. W. B.: India Meteorological Department. Upper air data 1928. Part 13. Monthly means of pilot balloon data and monthly frequencies of cloud direction.

— See Potter, Leslie S.: Civil aviation in India.

— See Ramanathan, K. R.: India meteorological Department. Upper air data 1928. Part 14. Sounding balloon data. .

— See Shelmerdine, F. E.: Civil aviation in India, 1929-30.

INDIAN AIR SURVEY & TRANSPORT LTD. See Air Survey Company: Air Survey Company, Ltd.

INDIAN treaty. See Montagnes, James: Making an Indian treaty by air in Canada.

INDIANA. Aeronautical laws of the state of Indiana. 1930.

Indianapolis, Ind., 1930, pp. 15.

INERTIA. See Miller, M. P.: An accurate method of measuring the moments of inertia of airplanes.

INFRA-RED rays. See Stevens, Albert W.: Aerial photography by infra-red rays.

INGALLS, DAVID S. Flying as a recreation.

The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, p. 18, ill.

— The modern dirigible is practically invulnerable when operated at sea.
U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, pp. 35-36.

— The relation between private and governmental flying.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 140-141, ills.

— The state's job in aviation control.
National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 33-34.

INJECTION valves. *See* Joachim, William F., Chester W. Hicks, and Hampton H. Foster: The design and development of an automatic injection valve with an annular orifice of varying area.

INSECTICIDIES. Les progrès de la pulvérisation d'insecticide par avion.
L'Aéronautique, 12me année, No. 137 (oct. 1930), Paris, pp. 383-384, ill.

INSINNA, SALVADORE. Un problema dei moderni aeroporti.
Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 279-289, ill.

INSPECTION. *See* Outram, H. W. S.: British aeronautical inspection.

— *See* Johnson, Robert: Organization of inspection in airplane production.

— *See* Miller, I. W.: Inspection of aircraft.

INSTRUMENT boards. Aménagement des planches de bord.
L'Aéronautique, 12me année, No. 129 (fév. 1930), Paris, pp. 51-54, ill.

— *See* P., L.: Aménagement des planches de bord.

INSTRUMENT flying. Aeronautics. Training in instrument flying.
Mech. Eng., Vol. 52, No. 1 (Jan. 1930), New York, pp. 63-64, ill.

INSTRUMENTS. Ernest Turner: Electrical and scientific instruments.
Air annual of the British Empire 1930, London, pp. 638-641, ill.

— Essais des instruments de bord aux vibrations.

L'Aéronautique (L'Aérotechnique 8me année, No. 85), 12me année, No. 128 (jan. 1930), Paris, pp. 23-25, ill.

— Gerät zur Messung der augenblicklichen Durchflussmengen in Flüssigkeitsleitungen.

Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, 1930, Berlin, pp. 112-113, ill.

— *See* Brombacher, W. G., and E. R. Melton: Temperature coefficient of the modulus of rigidity of aircraft instrument diaphragm and spring materials.

— *See* Brown, S. G.: A new star on the horizon.

— *See* Calshot: L'installation de Calshot pour le chronométrage des avions.

— *See* Ciamberlini, U.: Gli strumenti aeronautici di bordo, di navigazione, di controllo del motore.

— *See* Franck, P.: Les instruments de bord des avions et la navigation aérienne.

— *See* Gyrorector: Le Gyrorector.

— *See* Ocker, William C.: Economic value of flying by instruments.

— *See* Peterson, J. B., and G. W. Rounds: Flight test instruments.

— *See* Ramsey, Logan C.: The distinction between "Blind" flying and instrument flying.

— *See* Stewart, Carles John: Aircraft instruments.

— *See* Warner, Edward P.: Mechanical aids to the directional sense.

— *See* Wollé Georg, und Oskar Passoth: Borgeräte-Ausrüstung der am Internationalen Rundflug 1930 beteiligten Flugzeuge.

INSURANCE. *See* Atwood, J. Paul: Dirigibles and air traffic safety.

— *See* Biddlecombe, C. H.: Know your insurance data.

— *See* Blum, René: L'assurance-vie en aéronautique.

— *See* Brinkerhoff, William W.: What about that policy?

INSURANCE. *See* Dunn, Ray A.: Aviation and life insurance; a study of the death rate and the hazard of flying in relation to policy underwriting.

— *See* Graf Zeppelin: The "Graf Zeppelin."

— *See* Jackson, J. H.: Is it safe to fly?

— *See* Lamplugh, A. G.: Aviation insurance.

— *See* Lloyd, G. L.: Legal and other problems confronting aviation insurance underwriters.

— *See* Roome, A. B.: Aviation insurance. An explanation of coverages, and obligations resting upon the insured.

INTERNATIONAL AERONAUTIC ORGANIZATIONS. *See* Ide, John Jay: International aeronautic organizations.

INTERNATIONAL AIR CONGRESS. Air Congresses.

Flight, No. 1130, Vol. 22, No. 34 (Aug. 22, 1930), London, p. 950.

Fifth International Air Congress, The Hague, from September 1-6, 1930.

— The fifth International Air Congress.

The Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 210.

INTERNATIONAL AIR TRAFFIC ASSOCIATION. De International Air Traffic Association.

Het Vliegveld, 13de Jaarg., No. 9 (Sept. 1929), Amsterdam, pp. 314-315, ill.

— International Air Traffic Association. Convention concernant le contrat de transports aériens conclue entre les compagnies de navigation aérienne affiliées à l'International Air Traffic Association. (I. A. T. A.).

Droit Aérien, Juillet, Août, Septembre 1930, Paris, pp. 516-547.

— *See* Döring, Hermann: Convention concernant le contrat de transport aériens.

INTERNATIONAL AVIATION LIGHTING MEETING. *See* Stiles, W. S.: The international aviation lighting meeting in Berlin.

INTERNATIONAL CIVIL AERONAUTICS CONFERENCE. International Civil Aeronautics Conference, Washington, D. C. December 12-14, 1928.

Proceedings International Civil Aeronautics Conference, 1929, pp. 268-.

INTERNATIONAL COMMISSION FOR AIR NAVIGATION. Protocols relating to amendments to articles 3, 5, 7, 15, 34, 37, 40, 41 and 42 and the final clauses of the convention relating to the regulation of air navigation of October 13, 1919. Paris, June 15, 1929, December 11, 1929. The protocols have not been ratified by His Majesty. Presented by the Secretary of State for Foreign Affairs to Parliament by command of His Majesty.

London, H. M. Stationery Office, 1930, pp. 15, (Great Britain Foreign Office, Miscellaneous No. 7 (1930)). Papers by Command. Cmd. 3541.

INTERNATIONAL LAW ASSOCIATION. International Law Association. Conference de Varsovie.

Droit Aérien, Juillet, Aout, Septembre 1930, Paris, pp. 548-555.

INTERNATIONAL relations. *See* Garrod, A. G. R.: The influence of aviation on international relations.

INTERNATIONAL touring competition. International Touring Competition.

Flight, Nos. 1127, 1130, Vol. 22, Nos. 31, 34 (Aug. 1, 1930), London, pp. 855-856, 949.

— International Touring Competition. Competitors starting on Sunday.

Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, pp. 802-803, illus.

- INTERNATIONAL touring competition. International Touring Competition. British competitors doing well in circuit of Europe.
Flight, No. 1127, Vol. 22, No. 31 (Aug. 1, 1930), London, pp. 857-860, ill.
- See Heinze, Edwin P. A.: International touring competition. Beginning of technical tests.
- INTERNATIONAL trade. See Rogers, Leighton W.: Aviation's contribution to international trade.
- INTERNATIONALE RUNDFLUG. Der "Internationale Rundflug 1930".
Deutsche Luftfahrt, 34. Jahrg., Heft 7/8, 1930, Berlin-Charlottenburg, p. 167.
- See Caesar, Wolfgang: Die Organisation des Internationalen Rundfluges 1930.
- IOWA CITY. See Petersen, William J.: Iowa City municipal airport.
- IPSWICH. See Higgins, Eric L.: Ipswich municipal aerodrome.
- 'IRAQ. The future of 'Iraq.
The Aeroplane, Vol. 39, No. 6 (Aug. 6, 1930), London, pp. 330-332.
- IRELAND. See Ulster: Ulster T. T. races, August 23rd. Air route to Belfast.
- IRVIN. The latest Irvin air chute.
Aeroplane, Vol. 38, No. 16 (April 16, 1930), London, p. 720, ill.
- IRVIN, LESLIE L. Velocity tests on falling bodies relating to parachuting.
The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. (1068f-1068g), 70-71, diagr.
- IRVING, H. B. Safety and control.
Air annual of the British Empire 1930, London, pp. 251-260, ill.
- IRWIN, R. RANDALL. Price isn't everything. (Prices of approved airplanes).
Western Flying, Vol. 7, No. 5 (May 1930), Los Angeles, Cal., pp. 46-49, tabs.
- Training students as cadets.
Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Cal., pp. 48-51, ills.
- Flash! The effect of lightning on aircraft.
Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Cal., pp. 35-37, ills.
- ISEMAN, JOHN W., N. J. BOOTS, RANDY ENSLOW . . . The aviation manual; a practical handbook on flying as a business—planes, motors, instruments, training courses, license requirements, air traffic rules—flight in theory and practice.
New York, Popular Science Publishing Co., 1930, pp. xvi, 698, ills., diagrs.
- ISEMAN, JOHN W., and SLOAN TAYLOR. The book of airplanes.
New York, Oxford University Press, 1929, pp. vii, 134, ills.
- ISOTTA FRASCHINI. Aviation.
Milan, 1930, pp. 93, ills., map.
Fabrica Automobili Isotta Fraschini.
- ISTVÁN, VITÉZ MÁS GROSSCHMID. Az óceánrepülés navigációja.
Aviatika, 6. évf., 4. szám (1930 április), Budapest, pp. 93-94.
- ITALIA. See Albertini, Gianni: Alla ricerca dei naufraghi dell' "Italia", mille chilometri sulla banchisa.
- See Arnesen, Odd: The Polar adventure; the "Italia" tragedy seen at close quarters.
- See Nobile, Umberto: Die vorbeitungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia".

ITALIA. See Nobile, Umberto: With the "Italia" to the North Pole.

- ITALY.** L'aeronautica nelle città italiane. Napoli II.—Il primo napoletano in pallone. Ascensioni a Napoli avvenute in vari tempi.—I saggi aeronautici dell'abate Professor Vincenzo Curzio (1805) e del tenente colonnello Del Genio Marco Antonio Costa (1837).
- Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 183-187.
- Annuario ufficiale della regia Aeronautica; 1929, a. VII. Ufficiali in s. p. e. e personale civile a ruolo.
Rome, Provved. gen. Stato, Libreria (Stab. polig. Amm. Stato), 1929, pp. lxxii, 309 con due ritratti.
- Annuario ufficiale della r. aeronautica; 1930, a. VII.
Roma, ist. poligr. Stato, Libreria (ist. poligr. Stato), 1930, pp. xliv, 355 con due ritratti.
- Annuario ufficiale della r. aeronautica 1930, A. VIII. Ufficiali della riserva aeronautica.
Roma, Ist. poligr. Stato, Libreria, 1930, pp. x, 101.
- Un avion géant Italian.
L'Illustration, 88e année, No. 4541 (15 mars 1930), Paris, p. 363, ill.
- The circuit of Italy. A single British competitor.
Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, p. 968.
- Circuit of Italy. Contest won by Italy.
Flight, No. 1132, Vol. 22, No. 36 (Sept. 5, 1930), London, pp. 991-992.
- Legislazione aeronautica estera. Fasc. I: Svizzera. Fasc. II: Francia. Fasc. III: Polonia. Fasc. IV: Romania (Ministero dell'aeronautica; ufficio aviazione civile e traffico aereo).
Roma, Ist. poligr. Stato, Libreria, 1930, 4 fasc. pp. 21; 47; 23.
- Registro italiano navale ed aeronautico. 1°-8° supplemento al Libro-registro 1929; gennaio-agosto.
Genova, tip. P. Pellas, 1929, pp. 126, 117, 110, 92, 108, 166, 125, 133.
- Regolamento per il Servizio Aeronautico 1930. Edito dal Registro Italiano Navale ed Aeronautico con sede in Roma.
Roma, Tipografia G. Lanzi.
- Regolamento per la navigazione aerea, approvato con r. d. 11. gennaio 1925, No. 356. Terza ristampa con richiami alle disposizioni complementari. Giugno 1930, VIII. (Ministero dell'aeronautica; aviazione civile e traffico aereo).
Roma, Ist. poligr. Stato, Libreria, 1930, pp. vii, 401.
Libreria dello Stato No. 965.
- The training of pilots in Italy.
The Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 210.
- Vuelta a Italia.
Aérea, Año 8, Núm. 86 (Sept.-Oct. 1930), Madrid, pp. 23-24, map.
- See Aero Club d'Italia: Almanacco aeronautico.
- See Beck, Waldemar: Italienische handelsluftfahrt.
- See Beltrami, Gian Mario: L'aeronautica nella difesa aerea.
- See Boffito, Giuseppe: Note retrospettive documentarie d'aerotecnica.
- See Giacomelli, R.: A proposito del progetto di fondazione della prima associazione aerotecnica.
- See Lamarche, Paul E.: Light airplanes of Italy.

- ITALY. *See* Magaldi, Giulio: *Gli aeromobili per servizi pubblici e le norme di abilitazione del Registro Italiano.*
- *See* Mori, Angelo: *Alcune considerazioni e confronti sulle norme di collaudo dell'aviazione Italiana e Americana.*
- *See* Poturzyn, Fischer v.: *Minister Balbos Kammerrede. Ein Kapitel italienischer Luftpolitik.*
- *See* Registro Italiano Navale e Aeronautico: *Regolamento per il servizio aeronautico.* Edito a cura del "Registro Italiano Navale e Aeronautico."
- *See* Ring, Laurence Elmer: *Airports in Italy.*
- *See* S., G.: *L'attività del reparto aeronautico del registro italiano.*

J

- J. Het 12½ jarig bestaan van het marinevliegkamp "De Mok."
Het Vliegveld, 14de Jaarg., No. 3 (Maart 1930), Amsterdam, pp. 81-84, ill., ports.
- JACKSON, GEORGE GIBBARD. *The world's aeroplanes and airships.*
London, S. Low, Marston & Co., Ltd., 1930, pp. xii, 244, illus.
- JACKSON, J. H. *Is it safe to fly?*
Journal American Insurance, Vol. 7, No. 9 (Sept. 1930), Chicago, pp. 9-12.
- JACKSON, W. E. *See* Kear, Frank Gregg, and W. E. Jackson: *Applying the radio range to the airways.*
- JACOBS, EASTMAN N., JOHN STACK and ROBERT M. PINKERTON. *Airfoil pressure distribution investigation in the variable density wind tunnel.*
National Advisory Committee for Aeronautics, Report No. 353, Sept. 16, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, illus., diagrs.
- JACOBS, EASTMAN N., and IRA H. ABBOTT. *Experiments with a model water tunnel.*
National Advisory Committee for Aeronautics, Technical Notes No. 358, Dec. 4, 1930, Washington, December 1930, p. 10, illus., diagrs.
- JACOBS, EASTMAN N., and RAYMOND F. ANDERSON. *Large-scale aerodynamic characteristics of airfoils as tested in the variable density wind tunnel.*
National Advisory Committee for Aeronautics, Report No. 352, Sept. 22, 1930, Washington, U. S. Government Printing Office 1930, pp. 30, diagrs. tabs.
- JACOBS, EASTMAN N., and ROBERT M. PINKERTON. *Pressure distribution over a symmetrical airfoil section with trailing edge flap.*
National Advisory Committee for Aeronautics, Report No. 360, Oct. 31, 1930, Washington, U. S. Government Printing Office 1930, pp. 19, illus., diagrs.
- JAMBON, BERNARD J.-L. *L'État de l'industrie aéronautique aux États-Unis.*
L'Aérophile, 38e année, No. 12 (15 nov. 1930), Paris, pp. 323-326, ill.
- JAMES, EARLE K. *Chile's national air lines.*
Pan American Magazine, Vol. 43, No. 5 (Nov. 1930), Washington, pp. 331-338.
- JAMES WALKER & Co., LTD. *Packing and jointing for aero engines.*
Air annual of the British Empire 1930, London, p. 399-400, ill.
- JANE, FRED T., CHARLES GREY GREY, LEONARD BRIDGMAN, and L. HOWARD FLANDERS. *All the world's aircraft of 1929.*
London, Sampson Low, Marston and Co., 1929, pp. 556, ill.
- JANNEKEYN. *De l'arbitrage. Figuration par avion des tirs d'artillerie.*
Revue des Forces Aériennes, No. 6, (Jan. 1930), Paris, pp. 72-92, ill., tabls., maps.

- JANSON, WALTER. Versuchseinrichtungen für Forschungsarbeiten an Flugmotoren.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 299-303, illus., diagrs.
Luftfahrtforschung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg.
- JAPAN. Japanische Versuche mit Drahtseilen für Flugzeuge.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 41 (11. Okt. 1930), Berlin, p. 1417.
- Les voiles et les ailes.—Au-dessus de la "Méditerranée" japonaise.
L'Illustration, 88e année, No. 4544 (5 avril 1930), Paris, p. 446, ill.
- See Buchler, Walter: Oriental aeronautics. What Japan is doing to establish her place in world aeronautics.
- See Ogawa, Taitiro: The attempted takeoff of the "City of Tacoma" for the trans-Pacific flight at Kasumigaura, Japan.
- JAQUEROD, A., L. DEFOSSEZ, and H. MÜGELI. Experimental research on the friction of pivots.
 National Advisory Committee for Aeronautics, Technical Memorandums No. 566, May 22, 1930, Washington, May 1930, pp. 54, illus., diagrs.
- JARDINE, FRANK. Thermal expansion in automotive-engine design.
Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 311-319, ill.
- JARRY, J. Calcul des efforts supportés par un avion dans différents cas de vol et à l'atterrissement.
 Paris, E. Chiron.
- JEANJEAN, MARCEL. L'aviation.
 Paris, A. redier, 1930, pp. 262, illus.
- JENKIN, J. W. See Archbutt, S. L., and J. W. Jenkin: Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition—(Continued).
- See Tapsell, H. J., S. L. Archbutt, and J. W. Jenkin: Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.
- JENKINS, C. FRANCIS. The aft-flying antenna.
Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 842, 844, ill.
- See Grey, Charles Grey: The trailing antenna.
- JENNINGS, W. G. "Cornering" at high speeds.
Aer. Res. Comm., Rep. Mem., No. 1281, (Ae. 427), May 1927, London, 1930, pp. 9, diagrs.
- The effect of span on aircraft performance, by W. G. Jennings, in collaboration with Messrs. Boulton and Paul, Ltd.
Aer. Res. Comm., Rep. Mem., No. 1276, (Ae. 422), May, 1929. London, 1930, pp. 17. illus., diagrs., tabs.
- Full scale experiments on high tip speed airscrews. Comparative performance trials of three airscrews of different sections.
Aer. Res. Comm., Rep. Mem., No. 1282, (Ae. 428), September 1929, London, 1930, pp. 6, illus., diagrs., tabs.
- JENÖ, KARA. Justice for Hungary.
Aviatika, 6. évf., 4. szám (1930 április), Budapest, pp. 76-78.
- JENÖ, UDVARY. A légiközlekedés, mint gazdasági tényező.
Aviatika, 6. évf., 4. szám (1930 április), Budapest, pp. 79-82.
- JENÖ, VITÉZ CZAPÁRY. Kereskedelmi szelek és a légiforgalom.
Aviatika, 6. évf., 4. szám (1930 április), Budapest, pp. 100-102, ill.

JOACHIM, WILLIAM F., CHESTER W. HICKS, and HAMPTON H. FOSTER. The design and development of an automatic injection valve with an annular orifice of varying area.

National Advisory Committee for Aeronautics, Report No. 341, Mar. 31, 1930, Washington, U. S. Government Printing Office 1930, pp. 10, illus., diagrs.

JOERG, WOLFGANG LOUIS GOTTFRIED. Brief history of polar exploration since the introduction of flying.

New York, American Geographical Society, Special publication No. 11, 1930, pp. 50, illus., maps.

JOHANSEN, F. C. Flow through pipe orifices at low Reynolds numbers.

Aer. Res. Comm., Rep. Mem., No. 1252, (Ae. 402), June 1929, London, 1930, pp. 24, illus., tabls., diagrs.

— See Lock, C. N. H., and F. C. Johansen: Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.

JOHNSON, AMY. Miss Amy Johnson honoured.

Flight, No. 1129, Vol. 22, No. 33 (Aug. 15, 1930), London, pp. 916-919, illus.

— Miss Amy Johnson's crash on landing at Brisbane: Stages of the mishap as filmed.

Illustrated London News, Vol. 177, (July 5, 1930), London, p. 22.

— Miss Amy Johnson's return.

Flight, No. 1128, Vol. 22, No. 32 (Aug. 8, 1930), London, pp. 882-885, ill.

— See Dixon, Charles: Amy Johnson—lone girl flyer.

JOHNSON, ERNEST. See Schey, Oscar W., Ernest Johnson, and Melvin N. Gough: Comparative performance obtained with XF7C-1 airplane using several different engine cowlings.

JOHNSON, GEORGE R. Peru from the air. With text and notes by Raye R. Pratt. New York, American Geographical Society, pp. xii+159, ill., maps.

— Plane rescue in the jungle.

The Sportsman Pilot, Vol. 4, No. 2 (Aug. 1930), New York, pp. 15-17, ill.

JOHNSON, J. B. Airplane welding.

Chicago, Goodheart-Willcox Co., 1929, pp. 321, illus., tabls.

— Alloy steel sheets for aircraft.

Iron Age, Vol. 125, No. 7 (Feb. 13, 1930), Middletown, N. Y., pp. 502-505, ill.

— Development in oxy-acetylene welding in the aircraft industry.

Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Cal., p. 143.

JOHNSON, L. W. The inspection of metals and their alloys.

Journ. Roy. Aer. Soc., Vol. 34, No. 234 (June 1930), London, pp. 441-494, illus., diagrs.

JOHNSON, Robert. Organization of inspection in airplane production.

Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 903-905, illus.

JOHNSTON, S. PAUL. The present status of aircraft engine superchargers.

Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 358-359, illus.

JONES, BRADLEY. Around the world.

U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 25-27, ill., map.

— Icy wings.

U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 22-25, ill.

— The school that flew.

U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 29-31, ill.

— Some random remarks on fog-flying.

U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, 21-23.

— This glider business.

U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 26-29.

- JONES, B. MELVILL, C. E. MAITLAND, and R. P. ALSTON. Records of the lateral motions of a stalled Bristol fighter aeroplane with slots upon the upper wing tips. Experiments made in the Cambridge University Air Squadron.
Aer. Res. Comm., Rep. Mem., No. 1286, (Ae. 436), July 1929, London, 1930, pp. 8, illus., diagrs.
- JONES, CASEY. Keeping up with fast company.
National Aeronautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 14-18.
- JONES, CHARLES. The past, present, and future of aviation.
Bulletin, New York Credit Men's Association, Vol. 24, No. 11 (Nov. 1930), New York, pp. 489-494.
- JONES, C. S. Sportsman pilots or professionals.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, p. 157.
- JONES, ERNEST. The air mail crosses the dollar line.
Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 54-55, 138, diagrs., tabls.
- How long is an airway?
Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 139-140.
- Mergers and consolidations in the industry.
Aviation, Vol. 28, No. 4 (Jan. 25, 1930), New York, pp. 152-153.
- JONES, E. T. The full scale determination of the lateral resistance derivatives of the Bristol fighter aeroplane. Part III.—The determination of the rate of roll derivatives.
Aer. Res. Comm., Rep. Mem., No. 1270 (Ae. 416), July 1929, London, 1930, pp. 7, illus., diagrs., tabls.
- JONES, E. T., and K. W. CLARK. Full scale maximum lift coefficient of R. A. F. 28 section wing.
Aer. Res. Comm., Rep. Mem., No. 1269 (Ae. 415), June 1929, London, 1930, pp. 2, ill., tabl.
- JONES, E. T., C. E. MAITLAND, and W. E. PURDIN. Stalled flight tests of a Moth fitted with auto control slots and interceptors.
Aer. Res. Comm., Rep. Mem., No. 1292 (Ae. 441), November 1929, London, 1930, pp. 3, illus.
- JONES, R. L., and F. M. RYAN. Abridgment of air transport communication.
Journal of the American Institute of Electrical Engineers, Vol. 49, No. 1 (Jan. 1930), New York, pp. 50-54, ill., diagrs.
- JORDAN, ARTHUR L. Elementary laboratory aerodynamics.
New York, The Ronald Press Co., 1929, pp. 67, ill.
- JOUGLARD, P. Note sur les ballons captifs d'observation.
Revue des Forces Aériennes, No. 9, avril 1930, Paris, pp. 455-461, ill., tabl.
- JOUKOWSKI. See Stanton, T. E.: On the distribution of pressure over a symmetrical Joukowski section at high speeds.
- JOURAWTSCHENKO, A. Correzioni sperimentalì per la mutua interferenza della fusoliera e dell'impennaggio di coda.
Rendiconti dell'Istituto Centrale Aero-idrodinamico di Mosca, N. 49, 1930.
- JOYCE, TEMPLE N. Spins.
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, pp. 44-46.
- JUDGE, ARTHUR W. Automobile and aircraft engines.
London, Sir Isaac Pitman and Sons, Ltd., 1930, pp. 846.
Second edition revised and enlarged.
- JUDKINS, E. L. Constant speed wind tunnel control.
Aviation, Vol. 29, No. 4 (Oct. 1930), New York, p. 247.
- JULLIOT, CH.-L. La Convention de Genève, de 1929 et l'immunisation des appareils sanitaires aériens.
Paris, Editions Per Orben Genève, Comité international de la Croix-Rouge.

- JUNIOR AIR SERVICE OF AMERICA, INC. Commercial aeronautics—1.
 Chicago, ill., Junior Air Service of America, inc., 1930, illus.
- JUNKERS. Un avion géant allemand en France.
 L'Illustration, 88e année, No. 4556 (28 juin 1930), Paris, pp. 324-325, ill.
- Die Flugleistungen der Junkers G 38.
 Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 287-289, ill., diagrs.
- The Junkers "G 38" commercial airplane (German). A giant high-wing monoplane.
 National Advisory Committee for Aeronautics, Aircraft Circulars No. 116, May 19, 1930, Washington, May 1930, pp. 15, illus.
- Das Junkers-grosslandflugzeug G 38.
 Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 1 (4 Jan. 1930), Berlin, pp. 2-6, illus.
- The "Junkers-Junior" light airplane (German). A two-seat all-metal low-wing cantilever monoplane.
 National Advisory Committee for Aeronautics, Aircraft Circulars No. 118, June 6, 1930, Washington, June 1930, pp. 8, illus.
- Der Junkers-Schwerölfugmotor.
 Luftschauf, 3. Jahrg., Nr. 4 (24. Feb. 1930), Berlin, p. 29, ill.
- Visite au Junkers G. 38.
 L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, pp. 82-87, ill.
- See Blenk, Hermann: Göttinger Sechsdimensionenmessungen an einem Modell des Flugzeugmusters Junkers A 35.
- See Blenk, Hermann: Göttingen six-component scale measurements on a Junkers A 35 airplane model.
- See Diesel engines: The Junkers heavy-oil aero engine.
- See Gasterstädt: Development of the Junkers-Diesel aircraft engine.
- See Hangars: Hangar construction simplified. Junkers "Lamellendach" in England.
- See Hausfelder, L.: The Junkers Diesel plane.
- See Hübner, Walter: Messung der Höhensteuerkräfte und der Längsstabilität eines Flugzeuges vom Muster Junkers F. 13 ge.
- JUNKERS, HUGO. Metal aeroplane construction.
 Dresden, Vergag Deutsche Motor Zeitschrift G. m. b. H.
- See Blenk, Hermann: Göttinger Sechsdimensionenmessungen an einem Modell des Flugzeugmusters Junkers A 35.
- See Meyer, Willy: Von Wright bis Junkers.
- See Pollog, Carl Hanns: Hugo Junkers; ein Leben als Erfinder und Pionier.
- See Schulz, R.: Industrie und Technik. Die Entwicklung des Junkers-Schwerölfugmotors. Höher siedende Kühlmittel. Junkers G 38.
- JUPITER. Where the Jupiter engine is built.
 Aeronautical Engineering, Suppl. to The Aeroplane, Vo. 38, No. 22 (May 28, 1930), London, pp. 1033-1038, illus.
- JUTLAND. See Amet: L'Aéronautique à la bataille du Jutland.

K

K. La muerte de Curtiss.

Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, p. 15, port.

KAHN, MAURICE. L'industrie aeronautique Allemande.

Aeronautica, Vol. 4, No. 3 (March 1930), Arnhem, pp. 42, 44-47.

- KAHN, ROGER WOLFE.** *The private flier.*
The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 20-21, ill.
- KAISER.** *Physiologische Probleme des Höhenfluges.*
Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, 1930, Berlin, pp. 93-95.
- KAISER, WILHELM.** *Über die Atmung des Höhenfliegers.*
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 645-670, ill., diagrs., tabls.
- KAISER, WILHELM, and WILHELM TRAMM.** *Über die Atmung des Höhenfliegers.*
Von Wilh. Kaiser.—Die Versuchsanordnungen für Gaswechselversuche.
Von Wilhelm Tramm.
Luftfahrtforschung, Band 6, Heft 2, 1930, pp. 28, ill.
- *See* Wilhelm Tamm.
- KAMEI, SIDUTAKE.** *See* Suhara, Toyotarô, Naozô Satô, and Sidutake Kamei:
A new ultra-speed kinematographic camera taking 40,000 photographs per second.
- KAMM, WUNIBALD.** *Der Argus-Flugmotor As 8.*
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 41 (11. Okt. 1930), Berlin, pp. 1409-1412, ill., diagrs.
- *Betriebsverhältnisse und Konstruktionsgrundlagen der Fesselballone.*
Luftfahrtforschung, Band 6, Heft 3, 1930, pp. 26, ill.
- *Die Gestaltung des Luftfahrzeugmotors.*
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 265-269, diagrs.
Luftfahrtforschung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg, ill.
- KAMM, WUNIBALD, and ALBERT STIEGLITZ.** *Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."*
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 255-264, ill., diagrs.
- KANE, CLARENCE P.** *The Army Air Corps maneuvers at Mather Field.*
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, pp. 23-27, ill.
- KANGOROO.** *The kangaroo apparatus for changing the loads of aeroplanes in flight.*
Aeronautica, Vol. 4, No. 2 (Feb. 1930), Arhem, pp. 30-32, ill.
- KANSAS CITY.** *See* Mooney, C. R.: Fairfax airport at Kansas City.
- KARMAN.** *See* Hooker, S. G.: On the vortex system in the wake of a cylinder in a fluid.
- KÁRMÁN.** *See* Tomotika, Susumu: On the stability of Kármán vortex street in a channel of finite breadth, II.
- KÁRMÁN, THEODORE VON.** Calculations of pressure distribution on airship hulls.
National Advisory Committee for Aeronautics, Technical Memorandums No. 574, July 17, 1930, Washington, July 1930, pp. 26, diagrs.
- *Mechanische Ähnlichkeit und Turbulenz.*
Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Math.-Phys. Klasse, 1930.
- *See* Friedrichs, K., und T. v. Karman: Zur Berechnung freitragender Fluegel.
- *See* Gilles, A., L. Hopf, und Th. v. Kármán: Vörtrage aus dem gebiete der aerodynamik and verwandter gebiete (Aachen 1929).
- KARSTEN, A.** Siemens-Scheinwerfer für Flugzeuge.
Deutsche Luftfahrt, 34. Jahrg., Heft 12, 1930, Berlin-Charlottenburg, pp. 308-309, ill.

- KATZ, B. ALEXANDER. Die Entwicklung der Flugzeugapparate.
Berlin, M. Krayn.
- KAUPA, E. De acoustische hoogtemeter.
Het Vliegveld, 13de Jaarg., No. 6 (Juni 1929), Amsterdam, pp. 210-211.
- KAYE, EMY. Aviation gasoline.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 118-119, illus.
- KEAN, JOHN S. Racing seaplanes. Present and future.
Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 25-27, illus.
- KEAR, FRANK GREGG, and W. E. JACKSON. Applying the radio range to the airways.
Bureau of Standards, Journal of Research, Vol. 4, No. 3 (March 1930), Washington, pp. 371-381, illus.
- KEAR, FRANK GREGG. See Diamond, Harry, and F. G. Kear: A 12-course radio range for guiding aircraft with tuned reed visual indicator.
- KEMPJE, H. See Mittelholzer, W.: Les ailes et les Alpes. Ouvrage publié avec la collaboration de H. Kempje. Adaptation de René Gouzy.
- KENNEDY, CRAIG. Asiatic aviation.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 55, 226, map.
- KENNEDY, FRANK M. Keeping in touch.
Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Cal., pp. 49, 100, ill.
- KENNEDY, MEL S. Compiling aerial maps.
Western Flying, Vol. 8, No. 1 (July 1930), Los Angeles, pp. 45-47, illus.
- Field use of aerial maps.
Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Calif., pp. 63-64, ill.
- Prospecting by air.
Western Flying, Vol. 7, No. 6 (June 1930), Los Angeles, Calif., pp. 57-59, illus.
- KESSLER. Beitrag zum Problem der Geschwindigkeitssteigerung der Luftschiffe.
Das Luftschiff, 2. Jahrg., Nr. 5/6, 1930, Berlin-Lichterfelde, pp. 34-36, diagrs.
- KEYS, C. M. The business of aviation—1929-1930.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 40-42, ill.
- KIEL, HEINRICH GEORG. Die statische Längsstabilität der Entenbauart.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 23. Heft (15. Dez. 1930), München, pp. 601-610, illus., diagrs.
- KILIMANDJARO-. See Mittelholzer, Walter: Kilimandjaro-Flug.
- KIMBALL, JAMES H. Trans-Atlantic flights of scientific value.
Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 40-42, maps.
- Trans-Atlantic weather.
Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 35-36, 144, map.
- Weather considerations for trans-Atlantic air routes.
Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 47, 124, map.
- KING, A. J.: See Churcher, B. A. G., and A. J. King: Analysis of measurement of noise emitted by machinery.
- KING, R. O., and H. MOSS. Detonation and lubricating oil.
Aer. Res. Comm., Rep. Mem., No. 1318 (E. 35), January 1930, London, 1930, p. 23, diagrs., tables.
- KING'S CUP. La copa del Rey de Inglaterra.
Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, p. 29, ill., map.
- King's Cup air race.
Flight, No. 1123, Vol. 22, No. 27 (July 4, 1930), London, pp. 727-738, illus., map.

- KING'S CUP.** The King's Cup. Miss W. Brown's win. A record entry.
Flight, No. 1124, Vol. 22, No. 28 (July 11, 1930), London, pp. 767-775, 778, illus.
- The King's Cup race.
The Aeroplane, Vol. 38, No. 24 (June 11, 1930), London, pp. 1110-1112.
- On the King's Cup air race.
The Aeroplane, Vol. 39, No. 2 (July 9, 1930), London, pp. 85-126, illus.
- KINNEAR, FRANCES.** See Stamer, Fritz, and A. Lippisch: Gliding and sail-planing; a beginner's handbook.
- KIRBY, HAROLD LEWIS.** An analysis of meteorology as related to the operation of aircraft.
Los Angeles, Press of the Smith-Barnes Corporation, 1930, pp. 120, illus., diagrs.
- KIRKBRIDGE, CHARLES E.** Gas welding in the aircraft industry.
Western Flying, Vol. 7, No. 4 (April 1930), Los Angeles, Calif., p. 154.
- KIRSCHNER, A.** Kritische betrachtungen. Die Luftetats des Auslandes. Personalwechsel in der Leitung der spanischen Zivilluftfahrt.
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 145-146.
- Kritische Betrachtungen. Rationalisierungsvorschläge und Notprogramm. Die Luftfahrtsubventionen in den Vereinigten Staaten von Nordamerika. Frankreichs Bemühungen um die Luftvormachtstellung in Südamerika.
Die Luftwacht, Heft 2, Feb. 1930, Berlin, pp. 49-53.
- Kritische Betrachtungen. Seekonferenz und Luftabrustung. Die einseitige Bevorzugung der französischen Handelsluftfahrt durch Portugal. Deutsch-chinesisches Luftverkehrsabkommen.
Die Luftwacht, Heft 3, März 1930, Berlin, pp. 97-99.
- Die Weltluftfahrt 1929. I. Luftpolitik.
Die Luftwacht, Heft 1, Jan. 1930, Berlin, pp. 1-6.
- Luftpolitik. Die Weltluftmächte. 8. Kap. Die Vereinigten Staaten von Amerika als Luftmacht.
Die Luftwacht, Heft 3, März 1930, Berlin, pp. 100-102.
- Die Weltluftmächte. 10. Kapitel. Argentinien als Luftmacht.
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 149-153.
- KIRSTE, LÉON.** Calculs de résistance et essais statiques.
L'Aéronautique (L'Aérotechnique, 8e année, No. 91), 12me année, No. 134 (juil. 1930), Paris, pp. 252-264, ill., tabs.
- KITTREDGE, L. T.** Gliding in high school.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1304-1307, ill.
- KLEFFEL, WALTHER.** Drei Tote von R 101.
Luftschau, 3. Jahrg., Nr. 20 (24 Okt. 1930), Berlin, pp. 153-154.
- Die Organisation im deutschen Segelflugsport.
Luftschau, 3. Jahrg., Nr. 2 (24 Jan. 1930), Berlin, pp. 10-11.
- Der Segleflug. Ein Ruhmeskapitel aus der Geschichte des Menschenfluges.
Berlin, Weidmannsche Buchhandlung.
- KLEIN, A. L.** The wind tunnel as an engineering instrument.
Journ. Soc. Automotive Eng., Vol. 27, No. 1 (July 1930), New York, pp. 87-90.
- KLEIN, G. J.** See Parkin, J. H., and G. J. Klein: The interference between the body and wings of aircraft.

KLEMIN, ALEXANDER. Aeronautics.

Mech. Eng., Vol. 52, No. 4 (April 1930), New York, pp. 485-490, ill.

Simplified aerodynamics. Chicago, The Goodheart-Willcox Company, inc., 1930, pp. 323, ill., diagrs.

— The N. A. C. A. Conference at Langley Field.

Mech. Eng., Vol. 52, No. 8 (Aug. 1930), New York, pp. 767-771.

— Simplified aerodynamics.

Chicago, The Goodheart-Willcox Company, inc., 1930, pp. 328, ill., diagrs.

— Wind tunnel experiments on the Burnelli all-wing principle.

Aviation Engineering, Vol. 3, No. 9 (Sept. 1930), pp. 22-24, ill.

— Wind tunnel experiments on the Burnelli principle.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, pp. (972a-972d), 57-60, ill., diagrs., tabs.

KLEMMER, HARVEY. American aircraft builders.

The Sportsman Pilot, Vol. 4, No. 1 (July 1930), New York, pp. 20-21, ill.

KLEMPERER, WOLFGANG. Making the wind be your motor.

National Aeronautic Review, Vol. 8, No. 4 (April 1930), Washington, pp. 37-42, 60, ill.

KLINFELTER, CYRIL FAIVRE. See United States Federal Board for Vocational Education: Vocational training for airplane mechanics . . .**KNAUSS.** Luftverkehr und Politik.

Die Luftwacht, Heft 3, März 1930, Berlin, pp. 103-106.

KNAUSS, ROBERT. Erster Lufthansa-Postflug nach Bagdad.

Luftschau, 3. Jahrg., Nr. 24 (24. Dez. 1930), Berlin, pp. 186-187, ill.

KNEEN, ORVILLE HAYTER, and AUGUSTUS POST. Flying for everybody.

New York, Experimenter Publications, inc., 1929, ill., diagrs.

KNEEN, ORVILLE HAYTER. The war in the air—On mosquitoes.

Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 931-933, ill.

KNERR, HORACE. Identification of aircraft tubing by Rockwell test.

National Advisory Committee for Aeronautics, Technical Notes No. 342, June 10, 1930, London, June 1930, pp. 8, ill.

KNERR, HORACE C. See Gabel, S. L., and Horace C. Knerr: The story of aircraft tubing.**KNIGHT, CLAYTON.** A former combat pilot sits in at the "war".

National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 12-16, ill.

— What fools we were!

The Sportsman Pilot, Vol. 3, No. 3. (March 1930), New York, pp. 19, 40, ill.

KNIGHT, MONTGOMERY, and CARL J. WENZINGER. The effect of wing tip floating on the autorotation of a monoplane wing model.

National Advisory Committee for Aeronautics, Technical Notes No. 336, Mar. 31, 1930, Washington, March 1930, pp. 19, ill., diagrs., tabs.

KNIGHT, MONTGOMERY, and THOMAS A. HARRIS. Experimental determination of jet boundary corrections for airfoil tests in four open wind tunnel jets of different shapes.

National Advisory Committee for Aeronautics, Report No. 361, Nov. 24, 1930, Washington, U. S. Government Printing Office 1930, pp. 27, ill., diagrs., tabs.

KNIGHT, MONTGOMERY, and WILLIAM C. CLAY. Refrigerated wind tunnel tests on surface coatings for preventing ice formation.

National Advisory Committee for Aeronautics, Technical Notes No. 339, May 24, 1930, Washington, May 1930, pp. 21, ill.

KNIGHT, MONTGOMERY, and RICHARD W. NOYES. Span load distribution on two monoplane wing models as affected by twist and sweepback.

National Advisory Committee for Aeronautics, Technical Notes No. 346, July 29, 1930
Washington, July 1930, pp. 7, illus., diagrs., tabls.

KNIGHT, MONTGOMERY, and RICHARD W. NOYES. Wind tunnel pressure distribution tests on a series of biplane wing models. Part III. Effects of changes in various combinations of stagger, gap, sweepback, and decalage.

National Advisory Committee for Aeronautics, Technical Notes No. 330, Jan. 23, 1930,
Washington, December 1929, pp. 6, illus., diagrs.

KNOTT, HEINRICH. Lessons from the glider.

The Sportsman Pilot, Vol. 3, No. 6 (June 1930), New York, pp. 18, 46, ill.

— Soaring in America.

The Sportsman Pilot, Vol. 3, No. 3 (March 1930), New York, pp. 14-15, ill.

KNOWLAND, RUSSELL. Leaping headlong into space. Members of the Caterpillar Club have all made emergency leaps—Lindbergh's four jumps constitute a parachute record. One woman is a member.

The Sunday Star Magazine, June 2, 1929, Part 7, Washington, D. C., pp. 1-2, ill.

KNOX, CLARENCE M. See Sands, A. B.: State control of aviation in Connecticut.

KOBAYASI, TATUO, HIROTO, OKUMURA, KINMATSU SIMAMURA and TATUO KOYAMA. Application of the inverse Wiedemann effect to torque variation recordings. Part II.

Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 54 (Vol. 5, 1), (Jan. 1930), Tôkyô, pp. 4, diagrs.

KÖHL, HERMANN. Deutsche Stimmen zum ersten Nord-Atlantik-fluge von Ost nach West.

Berlin-Wittenau, Verlag "Deutscher Flug".

KÖNIG VON UND ZU WARTHAUSEN, FRIEDRICH KARL. Wings around the world.
New York, London, G. P. Putnam's Sons, 1930, pp. xii, 185, illus.

KÄNIGSWARTER, H. DE Le vol des oiseaux et le balancement.

L'Aéronautique (L'Aérotechnique, 8e année, No. 86) 12me année, No. 129 (fév. 1930), Paris pp. 55-60, ill.

KÖPPEN, JOACHIM V. Einfiegen und Nachfliegen neuer Flugzeugmuster.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 619-622.

KOHLER AVIATION CORPORATION. See Shannon, Homer H.: Breaks records with express traffic.

KOLFF, C. Het luchttoerisme.

Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 284-285, port.

KOPPE, HEINRICH. Von den Gefahren des Luftmeeres.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin 1930, pp. 673-681, illus.

KOSCHMIEDER, H. Measurements of visibility at Danzig.

Monthly Weather Review, Vol. 58, No. 11 (November 1930), Washington, pp. 439-444, illus., diagrs., tabls.

KOYAMA, TATUO. See Kobayasi, Tatuo, Hiroto Okumura, Kinmatsu Simamura and Tatuo Koyama: Application of the inverse Wiedemann effect to torque variation recordings. Part II.

KOYEMANN, A. Ist das Problem der Rentabilität des Luftverkehrs lösbar?

Deutsche Luftfahrt, 34, Jahrg., Heft 3 (März 1930), Berlin, pp. 83-84, tabls.

KOZELUH. Il motore Kozeluh.

Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 375-377, ill.

KRAEMER, OTTO. Dauerbiegeversuche mit Hölzern.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 411-420, illus., diagrs., tabls.

Luftfahrtforschung, Band 8, Heft 2, 1930, München und Berlin, R. Oldenbourg.

KRAEMER, OTTO. Der Einfluss der Leimung auf die Güte von Flugzeugsperrholz.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 434-442, illus., diagrs., tabls.

Luftfahrtforschung, Band 8, Heft 2, 1930, München und Berlin, R. Oldenbourg.

KRAMER, GEORGE N. From beans to planes in one year. The story of the Metropolitan Airport, Los Angeles, one of the busiest western air terminals.

Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 525-527, ill.

— The Grand Central airport. Glendale, Cal., port opens \$150,000 passenger station and control tower.—Design and construction noteworthy.

Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 680-683, ill.

— Hexagonal hangar feature of Western Air Express terminal.

Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 816-817, ill.

— Sold! Eight used planes a month.

Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 961-964, ill.

KREDEL, ERNEST. Die Deutsche Handelsluftfahrt (Was sie ist—and was sie uns sein kann).

Hannover, Adolph Sponholtz Verlag G. m. b. H., 1929, p. 129.

KRELL, O. Befindet sich der deutsche Luftschiffbau noch auf dem richtigen Wege?

Die Luftwacht, Heft 1, Jan. 1930, Berlin, pp. 33-39, ill.

KREUTZER, JOSEPH. Better landing gears and multi-engined planes.

Aviation, Vol. 28, No. 11 (March 15, 1930), New York, p. 527.

KRÖBER, G. See Flachbart, O., and G. Kröber: Experimental investigation of aircraft propellers exposed to oblique air currents.

KROEBER, G. See Flachsbart, O., und G. Kroeber: Experimentelle Untersuchungen an schraegangeflasenen Schraubenpropellern.

KRONFELD, ROBERT. Deutscher Segelflug in England.

Luftschau, 3. Jahrg., Nr. 19 (10. Okt. 1930), Berlin, pp. 145-146.

— Mon record de distance des 100 kms en vol à voile.

L'Aéophile, 38e année, Nos. 5-6 (15 mars 1930), Paris, pp. 73-75, ill.

KRONFELD, ROBERT, und W. KÜNERT. Die Segelflugexpedition des Forschungs-institutes der Rhön-Rossittengesellschaft auf die Rax-Alpe (Österreich) vom 15. Januar bis 15. Februar 1929.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 4. Heft (28. Feb. 1930), München, pp. 100-108, illus., maps., diagrs.

KRONFELD, ROBERT. See Abrial, Georges: Un record de distance de Kronfeld.

KROTKE, RUD. 14 hours motorless.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 67-68, ill.

KROUSE, ALLEN J. See Davis, W. Jefferson: Aeronautical law.

KRÜGER, KURT, und HANS PLENDL. Aufnahme der Strahlungskennlinien eines Kurzwellenrichtstrahlsystems der Grossfunkstelle Nauen im Flugzeug.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 587-596, illus., diagrs.

KRÜGER, KURT. Über Kurzwellenempfang in beweglichen Stationen.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 536-538, illus., diagr.

- KRÜGER, KURT. *See* Handel, Paul von, Kurt Krüger und Hans Plendl: Quarzsteuerung von Kurzwellen-Empfängern.
- KRUPKA, JOSEPH. "Sky-flying": The winged "Bird-man" making his first flight; and his apparatus, unpacked and packed.
Illustrated London News, Vol. 177, No. 4782 (Dec. 13, 1930), London, p. 1059, ill.
- KRYPTOCYANINE. Kryptocyanine in photography.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, p. 1232, ill.
- KÜHNERT, W. *See* Kronfeld, Robert, und W. Kühnert: Die Segelflugexpedition des Forschungsinstitutes der Rhön-Rossittengesellschaft auf die Rax-Alpe (Österreich) vom 15. Januar bis 15. Februar 1929.
- KÜSSNER, GEORG. Optisch-photographische Formänderungsmessungen an Luftfahrzeugen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 227-234, ill.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 17. Heft (15. Sept. 1930), München, pp. 433-440, ill., diagrs.
- KUETHE, A. M. *See* Dryden, H. L., and A. M. Kuethe: Effect of turbulence in wind tunnel measurements.
- KUIPERS, C. Motoren voor sportvliegtuigen.
Het Vliegveld, 13de Jaarg., No. 7 (Juli 1929), Amsterdam, pp. 240-243, ill., diagr.
- Nieuwe Lorraine-Dietrich motoren.
Het Vliegveld, 13de Jaarg., No. 11 (Nov. 1929), Amsterdam, pp. 396-399, ill., diagr.
- KULEBAKIN, V. S. Riflessione luminosa delle eliche in rotazione.
Notiziario Tecnico di Aeronautica, Vol. 6, N. 3 (Marzo 1930), Roma, pp. 235-242, ill.
- KUNDEL, C. F. Aviation in New Zealand.
Airway Age, Vol. 11, No. 5 (May 1930), New York, p. 669.
- KUNKEL, JOHN HENRY. What is the matter with our advertising?
Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 703-704, ill.
- KUNS, RAY F. Aviation engines, a practical treatise covering operation and maintenance of modern airplane engines, including carburetor and magneto adjustments, lubrication, and ignition operations.
Chicago, American Technical Society, 1930, pp. 198, ill., diagrs.
- KURLBAUM, GEORG. *See* Fassbender, Heinrich, Franz Eisner und Georg Kurlbaum: Untersuchung über die Ausbreitungsdämpfung elektromagnetischer Wellen und die Reichweiten drahtloser Stationen im Wellenbereich 200 bis 2,000 m.
- KUSMIN, G. I. Diagramme zum Entwerfen von Luftschauben.
Zahi-Bericht 38 (Nr. 292), Moskau, 1929, p. 8.
- KYFFHÄUSER-TECHNIKUM. *See* Lössl, Ernst v.: Ein einfaches Sechskomponenten-Messgerät der neuen Windkanalanlage am Kyffhäuser-Technikum, Bad Frankenhausen.
- L**
- L., P. L'hélice Benuzzi à pales automatiquement déformables.
L'Aéronautique, (L'Aérotechnique, 8e année, No. 92), 12me année, No. 135. (août 1930), Paris, pp. 301-302, ill.
- Suggestions au sujet d'un coefficient caractérisant rationnellement "les vues."
L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, p. 126, ill.

- LL. Costes.
Aérea, Año 8, Núm. 86 (Sep.-Oct. 1930), Madrid, pp. 19-22, ill.
- LACHMANN, G. Practical tests with the "Auto control slot."
National Advisory Committee for Aeronautics, Technical Memorandums Nos. 593, 594, Nov. 28, 1930, Washington, November, 1930, pp. 20, 30, ill., diagrs.
- Praktische Erfahrungen mit dem automatischen Spaltflügel.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 16. 17. Heft (28 Aug. 15. Sept. 1930), München, pp. 409-418, 440-448, ill., diagrs.
- LA CIERVA. See Autogiro: El autogiro La Cierva en los EE. UU. de N. A.
- LACMANN, OTTO, und WALTER BLOCK. Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffs LZ127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 473-482, ill., maps, diagrs., tabls.
- Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 11. Heft (14. Juni 1930), München, pp. 269-278, ill., diagrs., tabls.
- LACQUERS. See McCutcheon, W. W.: Airplane dopes and lacquers and their application.
- LAFAY, A. Considerations sur le vol sans moteur.
Génie Civil, T. 96, No. 25 (21 juin 1931), Paris, pp. 606-607, ill.
- LAGUE, A. SAINTE. See Huguenard, E., A. Magnan, et A. Sainte Lague: Sur la détermination expérimentale des polaires d'avions en vol.
- LAJOS, ROTTER. A helikopter probléma.
Aviatika, 6. evf., 4. szám (1930 április), Budapest, pp. 86-90, ill.
- LAMARCHE, PAUL E. British fighting planes. (Part one).
Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 66-69, ill.
- British fighting airplanes. (Part two).
Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 54-58, ill.
- The Dutch rise to the occasion.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 78-79, 230, ill.
- French pursuit airplanes. (Part 1).
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 128-131, ill.
- French pursuit airplanes. (Part 2).
Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 92-95, ill.
- Light airplanes of Italy.
Aero Digest, Vol. 16, No. 5, 6 (May, June 1930), New York, pp. 130-133, 108-110, ill.
- Observation and bombing airplanes of France.
Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 82-85, ill.
- LAMBIE, MARGARET. Air law.
U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 19-21.
- LAMÉ, M. Refroidissement des moteurs à l'éthylène glycol.
L'Aérophile, 38e année, Nos. 11-12 (15 juin 1930), Paris, pp. 180-181.
- LAMPLUGH, A. G. Aviation insurance.
Air annual of the British Empire 1930, pp. 121-124.
- LANCE, O. B. Tennessee's sky harbor.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1209-1210, ill.
- LAND, EMORY S. Daniel Guggenheim.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 27-28.

LANDING. *See* Accidents: Statistical studies of aircraft accidents and forced landings.

- *See* Berger, P.: Dispositifs pour la reduction de la vitesse d'atterrissage.
- *See* Brissot, A.: Étude sur les longueurs de roulement au décollage et à l'atterrissage des avions.
- *See* Pabst, Wilhelm: Theorie des Landesstosses von Seeflugzeugen.
- *See* Richardson, J. M.: Landing on one wheel.

LANDING fields. *See* Airports.

- *See* Hinsburg, F. C.: Intermediate landing fields.
- *See* United States Department of Commerce, Aeronautic Branch: Establishment and operation of Department of Commerce intermediate landing fields. July 1, 1930.
- *See* United States Department of Commerce, Aeronautics Branch: Intermediate landing field rules. May 20, 1930.

LANDING gear. *See* Dowty, George H.: Undercarriage developments.

- *See* Fabre: L'appareil Fabre, moteur Gnôme 50 cv.
- *See* Goodyear: Goodyear—"Airwheel."
- *See* Hohenemser, K.: Impact tests on rubber compressed springs for airplane landing gears.
- *See* Kreutzer, Joseph: Better landing gears and multi-engined planes.
- *See* Maiorca, Salvatore: Sui carrelli per aeroplani.
- *See* Michael, Franz: Versuche mit einer neuen Spornform für Flugzeuge. (DVL-Sporkufe.)
- *See* Niles, Alfred S.: Airplane chassis design—The shock absorbing unit.
- *See* Niles, Alfred S.: The design of landing gear. Axial loads, bending moments and torsions in tripod type chassis. Part II.
- *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim.
- *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim. Part II.—Simplified formulæ and curves.
- *See* Russell, A. E.: Method of stressing divided undercarriages.

LANDING speeds. *See* Ridley, Kenneth F.: An investigation of airplane landing speeds.

LANDIS, GEORGE G. New motor driven hangar doors.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 184-185, ill.

LANDIS, REED G. America holds 1930 air classic.
National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 28-29.

— Chicago's amateurs are modest.
National Aeronautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 35, 37-38, 65, ill.

LANDWERLIN, H., et L. SUARD. Essais et calcul des roues et des organes amortisseurs.
Service Technique de l'Aéronautique, Bulletin technique No. 65, Paris.

LANE, D. R. The T. A. T.-Maddux operating organization and methods.
Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 506-509, ill.

- LANE, KENNETH M. Regulating air commerce. Article II—Engineering.
Aviation, Vol. 28, No. 4 (Jan. 25, 1930), New York, pp. 154-156.
- See Warner, Edward P.: "Human curiosity knows no limit," says Lane.
- LANGEVIN, H. "Action de masse" aérienne dans une bataille défensive.
Revue des Forces Aériennes, No. 6, 1930, Paris, pp. 21-64, ill.
- Les prémisses de la "Chasse de nuit" en France.
Revue des Forces Aériennes, No. 9, avril 1930, Paris, pp. 400-416, ill.
- La vie et la mort de Jean Chaput aviateur de chasse.
Revue des Forces Aériennes, No. 16, nov. 1930, Paris, pp. 1273-1285, ill.
- LANGLEY, R. The model aeroplane manual; a practical handbook on the building and flying model aeroplanes.
London, P. Marshall & Co., Ltd., 1930, pp. 142, illus., diagrs.
- LANGLEY, SAMUEL PIERPONT. See Smithsonian Institution: A list of books forming the Langley aeronautical collection deposited in the Library of Congress by the Smithsonian Institution, March 1930.
- LANGLEY, T. R. Winter cross-country flight of first pursuit group.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, p. 142.
- LANDSDORFF, WERNER V. Fortschritte der Luftfahrt.
Frankfurt a. Main, Verlag H. Bechold, 1929, p. 596.
- LANKFORD, JESSE W. Regulating air commerce. Article III—Licensing.
Aviation, Vol. 28, No. 5 (Feb. 1, 1930), New York, pp. 205-207, ill.
- LANPHIER, T. G. The future of air transportation.
Mech. Eng., Vol. 52, No. 6 (June 1930), New York, p. 596.
- LANZILLO, VINCENZO. See Boffito, Giuseppe: L'aeronautica nelle citta italiane. Torino V. L'aerostato-battello-vapore di Vincenzo Lanzillo (1875).
- LAPRESLE, A. Girouette aérodynamique et stabilité de forme des planeurs.
Service Technique de l'Aéronautique, Bulletin technique No. 66, Paris.
- Moments de giration et stabilité de route.
L'Aérophile, 38e année, Nos. 5-8 (15 mars-15 avril 1930), Paris, pp. 85-88, 115-117, ill., diagr.
- LAROE, ARTHUR. An elementary course in glider flying. With an introduction by Edward S. Evans.
New York City, The Glider Institute, 1930, Vols. 1-5, ill.
- LARSEN, AGNEW E. Development of the autogiro.
Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 54-56, illus.
- LARTIGUE. Le commandement des avions.
Revue des Forces Aériennes, No. 16, nov. 1930, Paris, pp. 1305-1314.
- LATÉCOÈRE. The "Latécoère 28" commercial airplane (French). A ten-passenger high-wing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 112, Mar. 22, 1930, Washington, March 1930, pp. 10, illus.
- LATERAL stability. See Halliday, A. S., and C. H. Burge: Lateral stability calculations for the Bristol fighter aeroplane.
- See Stability: La stabilità laterale.
- LATHROP, FRANK HEIDTMAN, and C. B. NICKELS. A comparative study of dusting by means of airplane and ground machine for the control of the blueberry maggot.
United States Department of Agriculture, Circular No. 123, Washington, Government Printing Office, 1930, pp. 15, illus.
- LATIN AMERICA. The airlines in Latin America.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 214-216, ill.

LATIN AMERICA. *See* Angle, Jay Warren, and Brower Vance York: Airports in Latin America.

— *See* Biedermann, George: Achievements of commercial aviation in Colombia and Ecuador.

— *See* Glover, W. Irving: The air mail in Latin America.

— *See* Rochford, Daniel: Joining the Americas by air.

— *See* Willcox, H. Case: Air transport development in Latin America.

— *See* Willcox, H. Case: Air transportation in Latin America.

LAUNCHING. *See* Catapults: Catapult launching of aircraft.

LAURENT-EYNAC. La politique aéronautique de la France. Le proche avenir de l'aviation civile.

L'Aérophile, 38e année, Nos. 7-8, (15 avril 1930), Paris, pp. 97, 99-102, maps.

— *See* Blanchet, Georges: Personnalités contemporaines, Laurent-Eynac, Ministre de l'Air.

LAURO, G. Gli sviluppi del motore di aviazione dal 1912 al 1930.

Atti del Sindacato Provinciale Fascista Ingegneri di Milano, Vol. 8, No. 4 (Aprile 1930), Milano, pp. 135-154, ill.

LA VAULX. Les obsèques du Comte de la Vaulx.

L'Aérophile, 38e année, Nos. 9-10 (15 mai 1930), Paris, pp. 134-136, ill.

LA VAULX, HENRY DE. *See* Dollfus, Ch.: Henry de la Vaulx.

LAWs and regulations. Uniform airport rules.

Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, pp. 48, 64-65.

— *See* Blum, René: L'aviation de tourisme et les assurances.

— *See* Bouve, Clement L.: The development of international rules of conduct in air navigation.

— *See* Budwig, Gilbert G.: Air regulation.

— *See* Clagett, Brice: The new air mail law.

— *See* Congrès International de Legislation Aérienne: Huitième Congrès International de Legislation Aérienne du Comité Juridique International de l'Aviation, tenu à Madrid du 29 mai au 2 juin 1928, sous la présidence de son excellence Don Galo Ponte.

— *See* Cortesani, Giuseppe: La responsabilità nel diritto aereo.

— *See* Cuba: Reglamento de navegacion aerea civil sobre el territorio de la Republica de Cuba y sus aguas jurisdiccionales . . . y modificaciones y aclaraciones al mismo que se han dictado hasta el 4 de diciembre de 1928, por decretos, resoluciones y ordenes del Estado mayor del Ejército.

— *See* Cuthell, Chester W.: The scope of state aeronautical legislation.

— *See* Danilovics, P. de, et V. de Szondy: Les infractions à la loi pénale commises à bord des aéronefs.

— *See* Davis, W. Jefferson: Aeronautical law.

— *See* Davis, W. Jefferson: Liability of aircraft carriers, owners and operators of aircrafts.

— *See* Davis, Warren J.: The state regulation of aircraft common carriers.

— *See* Döring, Hermann: Convention concernant le contrat de transport aérien.

- Laws and regulations. *See* Fagg, Fred D.: A survey of state aeronautical legislation.
- *See* Fischl, Hanns: Das österreichische Luftfahrtrecht.
- *See* Fixel, Rowland W.: The regulation of airports.
- *See* Freeman, Harry J.: Survey of state aeronautical legislation, 1928-1929.
- *See* G., J. A.: Aircraft law of Illinois—comparison with uniform state law.
- *See* Giannini, Amedeo: L'hydravion.
- *See* Great Britain: Agreement between His Majesty in respect of the United Kingdom and the President of the German Reich amending the Agreement of June 29, 1927 relating to air navigation.
- *See* Greer, Rowan A.: Civil liability of an aviator as carrier of goods and passengers.
- *See* Hazen, R. I.: The new regulations for glider licensing.
- *See* Hudson, Manley Ottmer: Aviation and international law.
- *See* Idaho: Idaho aeronautical laws.
- *See* Indiana: Aeronautical laws of the state of Indiana. 1930.
- *See* International Air Traffic Association: De International Air Traffic Association.
- *See* International Commission for Air Navigation: Protocols relating to amendments to articles 3, 5, 7, 15, 34, 37, 40, 41 and 42 and the final clauses of the convention relating to the regulation of the air navigation of October 13, 1919. Paris, June 15, 1929-December 11, 1929. (The protocols have not been ratified by His Majesty) Presented by the Secretary of State for Foreign Affairs to Parliament by command of His Majesty.
- *See* International Law Association: International Law Association. Conférence de Varsovie.
- *See* Lee, T., jr.: Flying schools and state legislation.
- *See* Leeming, John F.: Pilot's "A" license.
- *See* Lloyd, G. L.: Legal and other problems confronting aviation insurance underwriters.
- *See* Logan, George B.: The interstate commerce "burden theory" applied to air transportation.
- *See* Long, G. A.: Liability for injuries by aircraft.
- *See* McBoyle, William W.: Are airplanes motor vehicles? Supreme Court asked to decide if auto law applies to stolen aircraft.
- *See* MacCracken, William P.: The growth of aeronautical law in America.
- *See* McGehee, Jane A.: Who owns the air?
- *See* McNair, Arnold D.: The beginnings and the growth of aeronautical law.
- *See* Maschino, Maurice: La condition juridique du personnel aérien.
- *See* Maschino, Maurice: Les servitudes aériennes. Un projet de loi français.
- *See* Michigan: Laws relating to aeronautics.
- *See* Muller, J. Wolterbeek: De juridische sectie.

Laws and regulations. *See* Newman, Arthur L.: Aviation law and the constitution.

- *See* Nokes, G. D., and H. P. Bridges: The law of aviation.
- *See* Roper, Albert: Recent developments in international law.
- *See* Safety rules: Government issues safety rules.
- *See* Savoia, Cesare: La responsabilità civile del vettore aereo, con prefazione del cav. gr. cr. prof. Pietro Coglioli.
- *See* Spain: Anuario de aeronáutica.
- *See* United States Department of Commerce, Aeronautics Branch: Air traffic rules (Extract from Air Commerce Regulations) September 1, 1930.
- *See* United States Department of Commerce, Aeronautics Branch: Intermediate landing field rules. May 20, 1930.
- *See* Volkmann, Kurt: Internationale luftrecht.
- *See* Vorys, John M.: What state body should regulate aeronautics.
- *See* Warner, Edward P.: Governments and airplanes . . . regulation and control.
- *See* Wegerdt: Deutsche Luftfahrtgesetzgebung.
- *See* Wikoff, Howard: Uniform rules for air passenger liability.
- *See* Young, Clarence M.: The province of federal and state regulation of aeronautics.
- *See* Zeisler, Karl F.: Michigan's new state aviation code.
- *See* Zollmann, Carl Frederick Gustav: Cases on air law.

LEAGUE OF NATIONS. Air transport and the League of Nations. Air transport co-operation Committee's report.

Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, p. 850.

- Air transport co-operation committee Report . . .
 - Geneva, 1930. League of Nations. Communications and transit organisation. Issued with the following document numbers: 1st sess. July 8-12, 1930 (C. 395. M. 175. 1930. VIII.—< C.C.T./A.C./15 (1.)>) Series of League of Nations publications. VIII. Transit. 1930. VIII. 8.
- Comité de coopération entre aéronautiques civiles. Rapport . . .
 - Geneve, 1930.
- Communications intéressant le fonctionnement de la Société des nations en temps de crise: facilités à accorder aux aéronefs. Rapport de la Troisième Commission à l'Assemblée. Rapporteur: M. René Cassin.
 - Genève, Imp. J. de G., 1929, pp. 2.

LEAR BLACK, VAN. *See* Black, Van Lear.

LE BOURGET. Field rules for Le Bourget airport.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 140-142, 211.

LEDOUX, CH. Procédé et appareil pour étudier les déformations des hélices aériennes.

C. R. Acad. Sci., T. 191, No. 16 (20 oct. 1930), Paris, pp. 651-653.

LEDUC, R. Contribution à l'étude des poutres prismatiques.

Service Technique de l'Aéronautique, Bulletin technique No. 60, Paris.

LEE, CHARLES E. The aviation year book 1930.

London, Sampson Low, Marston and Co. Limited.

- LEE, D. W. *See* Rothrock, A. M., and D. W. Lee: Some characteristics of fuel sprays from open nozzles.
- LEE, HELM. Cloudhopping the old Aztec trail.
National Aeronautic Magazine, Vol. 8, No. 11 (Nov. 1930), Washington, pp. 23-24, 33, 35, ill.
- LEE, JOHN G. The climb of the commercial airplane.
Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 646-649, diagrs.
- LEE, T., jr. Building a university of the air.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 40-43, ill.
- Flying schools and state legislation.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago pp. 529-532.
- LEEMING, JOHN F. Pilot's "A" license.
London, New York, Sir I. Pitman & Sons, Ltd., 1929, pp. vii, 75.
- LEES, ROBERT E. Sales policies and the private plane prospect.
Aviation, Vol. 28, No. 6 (Feb. 8, 1930), New York, pp. 253-255, ill.
- LEGATSKI, T. W. *See* Oberfell, G. G., T. W. Legatski, and Billy Parker: Aviation natural and its relation to other aviation gasoline.
- LÉGLISE, PIERRE. L'hydravion de Coupe Schneider Bernard 120.
L'Aéronautique, 12me année, No. 139 (déc. 1930), Paris, pp. 427-430, ill.
- Le moteur Clerget 100 HP à huile lourde.
L'Aéronautique, 12me année, No. 138 (nov. 1930), Paris, pp. 391-396, ill.
- Ratier metal propeller with pitch variable in flight.
National Advisory Committee for Aeronautics, Technical Memorandums No. 559, April 3, 1930, Washington, April 1930, pp. 9, ill.
- From L'Aéronautique, December 1929.
- La stabilisation automatique au moyen des girouettes Constantin.
L'Aéronautique (L'Aérotechnique 8e année, No. 92), 12me année, No. 135 (août 1930), Paris, pp. 267-298, ill.
- LEHIGH PORTLAND CEMENT Co. American airport designs, containing 44 prize winning and other drawings from the Lehigh Airports Competition, the first national contest for the designs of modern airports held in the United States, sponsored by the Lehigh Portland Cement Company; with analysis of designs by Archibald Black.
New York, Chicago, Pub. for the Lehigh Portland Cement Company by Taylor, Rogers & Bliss, inc., 1930, p. 96, ill.
- The Lehigh airports competition.
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 18-23, ill.
- *See* Mounier, P. J. J.: De Lehigh luchthaven-prijsvraag.
- LEIBER, FERDINAND. Untersuchung von organischen Farbstoffen auf ihre Verwendbarkeit für Lichtfilterzwecke.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 501-508, diagrs., tabs.
- LEIGH-MALLORY, T. L. Air co-operation with mechanized forces.
Aeroplane, Vol. 38, No. 11 (March 12, 1930), London, pp. 432, 434.
- LEIMKUGEL, ERICH. Die Bedeutung der Sprungschichten für den Freiballon.
Luftschau, 3. Jahrg., Nr. 21 (10. Nov. 1930), Berlin, p. 165.
- Richtungs-und Standortsbestimmung im Freiballon durch Funkpeilung.
Luftschau, 3. Jahrg., Nr. 13 (10. Juli 1930), Berlin, pp. 102-103, ill.
- LEITNER-WATTS. Airscrews. The Leitner-Watts hollow steel airscrews.
Air annual of the British Empire 1930, London, pp. 406-408, ill.
- LENTON, R. E. The small town airport.
National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 25-27, ill.

LEONARDO DA VINCI. *See* Giacomelli, R.: The aerodynamics of Leonardo da Vinci.

LE PAGE, W. L. The autogyro analyzed.

Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 257-282, ill.

LESLEY, E. P. Test of an adjustable pitch model propeller at four blade settings.

National Advisory Committee for Aeronautics, Technical Notes No. 333, Feb. 18, 1930, Washington, February 1930, p. 15, illus., diagrs., tabs.

LEVER gearing. *See* Rodger, R.: In the drawing office. Lever gearing.

LIABILITY. *See* Greer, Rowan A.: Civil liability of an aviator as carrier of goods and passengers.

— *See* Logan, George B.: Liability of airport proprietors.

— *See* Long, G. A.: Liability for injuries by aircraft.

LIBRARY OF CONGRESS. Dr. Zahm appointed to Guggenheim chair of aeronautics in Library of Congress.

Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, p. 172.

LIEBERS, FRITZ. Contribution to the theory of propeller vibrations.

National Advisory Committee for Aeronautics, Technical Memorandums No. 568, June 5, 1930, Washington, June 1930, pp. 23, diagrs.

— Resonanzschwingungen von Luftschauben.

Luftfahrtforschung, Band 7, Heft 3, 1930, München und Berlin, R. Oldenbourg, pp. 16, illus. Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 79-94, ill., diagrs.

LIENESCH, C. F. Speed with a generous dash of acrobatics at the 1930 national air races.

Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Cal., pp. 32-35, illus.

LIFT. *See* Durand, W. F.: A proof of the theorem regarding the distribution of lift over the span for minimum induced drag.

LIGHT filters. *See* Leiber, Ferdinand: Untersuchung von organischen Farbstoffen auf ihre Verwendbarkeit für Lichtfilterzwecks.

LIGHTING. L'illuminazione dell'avio linea moderna.

Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 360-372, ill.

Review of paper by A. K. Toulmin Smith and H. N. Green.

— Lighting of aerodromes and air routes.

Air annual of the British Empire 1930, London, pp. 669-684 ill.

— New floodlight for small airports.

Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1472-1473, ill.

— New prismatic lens landing light.

Airway Age, Vol. 11, No. 3 (March 1930), New York, p. 408, ill.

— Nouvi aerofari tedeschi per il traffico aereo notturno.

Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 333-336, ill.

— *See* Beacons.

— *See* McReynolds, Charles F.: Lighting Los Angeles airports.

— *See* Matthias, Joachim: Handelsluftfahrt. Die Befeuerung der Nachtflugstrecken Berlin—Halle und Brüssel—Ostende.

— *See* Novalux: Novalux ceiling light.

— *See* Peña, J.: El alumbrado eléctrico en la aviación.

— *See* Philips: Veilig vliegen des nachts! Proeven bij de luchtvaart afdeeling te Soesterberg met de Philips-luchtvaartlampen.

LIGHTING. *See* Sipp, Edward A.: Airport and aircraft lighting progress.

— *See* Sipp, Edward A.: Buy safe airport illumination.

— *See* Stiles, W. S.: The international aviation lighting meeting in Berlin.

— *See* Thompson, H. H.: A proposed new design of airport. System developed to control traffic by light.

— *See* Walter, H.: Bemerkenswerte neue Anlagen der AEG für Luftverkehrsbeleuchtung.

LIGHTNING. *See* Burton, Walter E.: Determining the effect of lightning upon the airplane.

— *See* Irwin, R. Randall: Flash! The effect of lightning on aircraft.

LIGHTS. Concerning British lights.

The Aeroplane, Vol. 39, No. 18 (Oct. 29, 1930), London, p. 992, ill.

— *See* Porter, L. C.: Thirty cent protection for a million dollar ship.

LILIENTHAL, ANNA und GUSTAV. Die Lilienthals.

Stuttgart und Berlin, J. G. Cotta'sche Buchhandlung Nachf., 1930, pp. 127, ill.

LIMBURG. *See* Franquinet, E.: Vogels vliegen over Limburg.

LINDBERGH, CHARLES AUGUSTUS, Map showing the overland and overseas flights of Charles Lindbergh.

New York, John Day Co.

— *See* Fife, George Buchanan: Lindbergh, the Lone Eagle, his life and achievements, with a valuable chapter on the navigation of "The Spirit of St. Louis", by Captain Robert Schofield Wood . . .

— *See* Van Dusen, William L.: Charles Lindbergh—Glider pilot.

— *See* Weems, P. V. H.: How Lindbergh flies.

LINDBERGH, H. A. Conservatism—The dominating characteristic of Northwest Airways.

Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 801-803, ill.

LINDGREN, GUSTAVE S. New York State airways weather service.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 135-136, map, tabls.

LION. Brauchen wir neue Antiklopfmittel?

Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, Berlin, pp. 115-116.

LIONE. *See* Arban, Francesco: Documenti sopre le ascensioni aerostatiche eseguite da Francesco Arban aeronauta di Lione, raccolti, ordinati e notati da Jotti da Badia Polesine.

LIORÉ-OLIVIER. The Lioré-Olivier "Le. O.240" commercial seaplane (French).

A high-wing cantilever monoplane.

National Advisory Committee for Aeronautics, Aircraft Circulars No. 110, Feb. 28, 1930, Washington, February 1930, pp. 11, ill.

LIPPISCH, ALEXANDER. The 1929 Rhön soaring-flight contest.

National Advisory Committee for Aeronautics, Technical Memorandums No. 560, April 10, 1930, Washington, April 1930, pp. 20, ill., diagrs., tabls.

— Les nouveaux essais d'avions sans queue.

L'Aérophile, 38e année, Nos. 3-4 (1er-15 fev. 1930), Paris, pp. 35-39, ill., diagr.

— Recent tests of tailless airplanes.

National Advisory Committee for Aeronautics, Technical Memorandums No. 564, May 8, 1930, Washington, May 1930, pp. 10, ill., diagr.

— Technischer Bericht des Rhön-Segelflug-Wettbewerbs.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 4. Heft (28. Feb. 1930), München, pp. 92-98, ill. diagrs., tabl.

- LIPPISCH, ALEXANDER.** Vliegen zonder motor.
Het Vliegveld, 14de Jaarg., No. 3 (Maart 1930), Amsterdam, pp. 77-80, ill., maps, diagrs.
- See Stamer, Fritz, und A. Lippisch: Der Bau von Flugmodellen.
- See Stamer, Fritz, und A. Lippisch: Gleitflug und Gleitflugzeuge. Heft 1.
- See Stamer, Fritz, and A. Lippisch: Gliding and sail-planing; a beginner's handbook.
- See Stamer, Fritz, und A. Lippisch: Handbuch für Jungsegelflieger. Teil I: Ausbildung, Maschinen, Werkzeuge, Instrumente.
- LIQUIDOMETER.** Liquidometer fuel guages.
Airway Age, Vol. 11, No. 7 (July 1930), New York, p. 972, ill.
- LITCHFIELD, P. W.** See Renfro, Robert B.: The future of the airship. An interview with P. W. Litchfield.
- LITERATURE.** See Viruly, A.: Vliegen en literature.
- LIVINGSTON, JOHN H.** "One-two"; the story of the fifth national air tour as related by the winner.
Troy, Ohio, The Waco Aircraft Company, 1930, p. 31, ills.
- LLAVE, JOAQUIN DE LA.** Trabajos de la F. Guggenheim sobre el vuelo a ciegas en Norteamérica.
Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, pp. 16-18.
- LLAVE Y SIERRA, JOAQUIN DE LA.** Viaje del "Conde Zeppelin."
Iberica, Año 16, Núm. 760 (12 enero 1929), Barcelona, pp. 17, 24-26, ill.
- LLOYD, G. L.** Legal and other problems confronting aviation insurance underwriters.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 543-553.
- LOAD.** Flugleistungen und -eigenschaften verschiedener Flugzeugmuster.
Luftfahrtforschung, Bd. 6, Heft 5, 1930, München, pp. 137-162, 165, 174 und 175.
- Load assumptions for calculating the strength of airplanes.
National Advisory Committee for Aeronautics, Technical Memorandums No. 581, Sept. 4, 1930, Washington; September 1930, pp. 31, ills., diagrs.
- See Caspari, W.: Gewichtzerlegung für Flugzeuge.
- See Kangoroo: The kangoroo apparatus for changing the loads of aeroplanes in flight.
- See Schrenk, Martin: Der Einfluss des Triebwerksgewichts auf die Flugleistungen.
- LOCK, C. N. H.** The equations of motion of a viscous fluid in tensor notation.
Aer. Res. Comm., Rep. Mem., No. 1290, (Ae. 439), April 1929, London, 1930, pp. 28.
- LOCK, C. N. H., and A. R. COLLAR.** Exploration of the flow near the screw proposed for the N. P. L. compressed air tunnel.
Aer. Res. Comm., Rep. Mem., No. 1293, Ae. 442, January 1930, London, 1930 pp. 10, ills., tables., diagrs.
- LOCK, C. N. H.** The interference of a wind tunnel on a symmetrical body.
Aer. Res. Comm., Rep. Mem., No. 1275, (Ae. 421), October, 1929, London, 1930, pp. 20, ills., diagrs., tables.
- LOCK, C. N. H., and F. C. JOHANSEN.** Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.
Aer. Res. Comm., Rep. Mem., No. 1284, (Ae. 434), September 1929, London, 1930, pp. 17, ills., diagrs., tables.
- LOCKHEED.** See McReynolds, Charles F.: Lockheed monocoque fuselage construction.

- LOEB, JESSE.** Montreal and border cities flying clubs.
Aeronautic Review, Vol. 8, No. 3 (March 1930), Washington, p. 54.
- LÖHNER, KURT.** Thermodynamische Aufgaben der Luftfahrtforschung.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 289-298, Ills., diagrs., tabl.
Luftfahrtforschung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg.
- LÖSSL, ERNST v.** Ein einfaches Sechskomponenten-Messgerät der neuen Windkanalanlage am Kyffhäuser-Technikum, Bad Frankenhausen.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 15. Heft (14. Aug. 1930), München, pp. 393-396, ill.
- LÖWE, KARL.** Im fluge nach den Azoren.
Berlin, Deutsche Verlagsgesellschaft.
- LOGAN, GEORGE B.** The interstate commerce "burden theory" applied to air transportation.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 433-442.
- Liability of airport proprietors.
Journal of Air Law, Vol. 1, No. 3 (July 1930), Chicago, pp. 263-273.
- LOGAN, R. A.** Flying in Central Africa.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 60, 212, ill.
- LONDON.** London's central airport.
Airways, Vol. 6, No. 11 (Aug. 1930), London, pp. 391-392, ill.
- See Grey, Charles Grey: On London's airport.
- See Spit, Gijsbert: De luchtvaart-tentoonstelling te Londen.
- LONG, G. A.** Liability for injuries by aircraft.
North Carolina Law Review, Vol. 9 No. 1 (Dec. 1930), Chapel Hill, pp. 60-62.
- LONGITUDINAL** stability. See Blenk, Hermann: Flight tests for the determination of static longitudinal stability.
- LOOPING.** See Barker, Samuel: Outside loops.
- LOOPS.** See Williams, Frank: Loops by one who knows them.
- LORENZEN, CHRISTIAN.** The Lorenzen gas turbine and supercharger for Gasoline and Diesel engines.
Mech. Eng., Vol. 52, No. 7 (July 1930), New York, pp. 665-672, ill.
- LORETO.** See Morelli, Ercole: L'opera pia nazionale per le vedove e i figli degli aeronauti in Loreto.
- LORRAINE-DIETRICH.** See Kuipers, C.: Nieuwe Lorraine-Dietrich motoren.
- LOS ANGELES.** See De Silva, Woodruff: The municipal airport of Los Angeles.
- See Kramer, George N.: From beans to planes in one year. The story of the Metropolitan Airport, Los Angeles, one of the busiest western air terminals.
- See McReynolds, Charles F.: Lighting Los Angeles airports.
- See Thompson, F. L.: Full-scale turning characteristics of the "U. S. S. Los Angeles."
- LOTH.** Le rotte radioelettriche sistema Loth.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 124-140, ill.
- LOUDEN, F. A.** Collection of wind tunnel data on commonly used wing sections.
National Advisory Committee for Aeronautics, Report 331 Jan. 8, 1930 [Washington, U. S. Government Printing Office 1929], pp. 45, diagrs., tabs.

- LOUGHEAD, ALLAN. *See* Hall, Norman S.: American aircraft builders.
- LOUIS, RICHARD. Das Dornier-Flugschiff. The Dornier Flying-Ship Do-X. Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 261-272, ill.
- LOVE, FRANCIS H. The future of aeronautic exports. Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 59, 266, ill.
- LOVELL FIELD. *See* Youngsteadt, R. W.: Lovell Field, Chattanooga, Tenn.
- LOW, A. M. *See* Denham, T. S.: Speed! With an introduction by Professor A. M. Low.
- LOW, G. EARL. *See* Bohrer, Walt. Reseeding by air—How Doc and Bill do it.
- LUBRICATING oil. *See* King, R. O., and H. Moss: Detonation and lubricating oil.
- LUBRICATION. *See* Andriani, Oronzo: La lubrificazione scientifica e razionale dei motori di aviazione.
- LUDINGTON. *See* Savage, E. W.: New short line makes progress. Ludington line accomplishes the unexpected in operation as well as traffic.
- LÜRENBAUM, KARL. Die Schwingungen in Luftfahrzeug-Triebwerkanlagen. Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 275-280, ill., diagrs. Luftfahrtforschung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg.
- LUFT UND SEE. Luft und See. Jahrbuch für 1930. Herausgegeben im auftrage der Kameradschaftlichen Vereinigung der Marineflieger und Luftschiffer e. v. von Dr. Erich Mehne. Berlin, E. S. Mittler & Sohn, 1930,, pp. 124, ill.
- LUFTIG, WILLIAM. Financing airplane sales. Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 76, 224.
- LUFTIG, WILLIAM W. The finance company's function. Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 231-232.
- Finance costs and charges. Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 690-691.
- Financing airplane manufacturers. Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1461-1462.
- Financing private owners. Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1578-1579, ill.
- LUNARDI, VINCENZO. *See* B., G.: Ai margini della storia. L'aeronautica nelle città italiane.
- LUNDQUIST EUGENE E. *See* Rhode, Richard V., and Eugene E. Lundquist: The pressure distribution over a Douglas wing tip on a biplane in flight.
- LUSK, HILTON F. From the ground up! Western Flying, Vol. 8, No. 1 (July 1930), Los Angeles, Calif., pp. 60-62, ill.
- LYCOMING. Manual for inspection, servicing and maintenance of Lycoming R-680 aviation engine. Williamsport, Pa., Lycoming Manufacturing Company, 1930, pp. 205, ill.
- LYON, HILDA M. The strength of transverse frames of rigid airships. Journ. Roy. Aer. Soc., Vol. 34, No. 234 (June 1930), London, pp. 497-556, ill.
- LYONSPORT AERO CLUB. *See* Anderson, Norman: A complete aviation ground course.

M

MAAS, H. J. VAN DER. Stuurstandslijnen van vliegtuigen; de bepaling ervan door middel van vliegproeven en hare beteekenis voor de beoordeeling der stabiliteit.

Comptes rendus de l'Institut Aérotechnique de l'État Hollandais.

McADIE, ALEXANDER GEORGE. Airgraphics.

Cambridge, Harvard University, 1930, pp. 37, ill.

— Clouds.

Cambridge, Harvard University, 1930, pp. 22.

— Clouds and the airman.

National Aeronautic Review, Vol. 8, No. 12 (Dec. 1930), Washington, pp. 49, 51, 55, 59, ill.

MCALERY, C. M. The air exercises.

The Aeroplane, Vol. 39, No. 8 (Aug. 20, 1930), London, pp. 436-451a, ill.

— The eleventh Royal Air Force display.

The Aeroplane, Vol. 39, No. 1 (July 2, 1930), London, pp. 10a-27, ill.

— The Royal Air Force in 1929.

Aeroplane, Vol. 38, No. 1 (Jan. 1, 1930), London, pp. 24-26.

MCBOYLE, WILLIAM W. Are airplanes motor vehicles? Supreme Court asked to decide if auto law applies to stolen aircraft.

The United States Daily, Vol. 5, No. 223 (Nov. 21, 1930), Washington, p. 1.

MCCLINTOCK, HUBBARD M., and F. B. WILLIAMS. Airports. Their location, administration, and legal basis.

Cambridge (Mass.), Harvard University Press, 1930, pp. 16, 190, ill.

MCCLINTOCK, MILLER. See Hubbard, Henry Vincent, Miller McClintock, Frank B. Williams, Paul Mahoney and Howard K. Menhinick: Airports, their location, administration and legal basis.

MACCOLL, J. W. Modern aerodynamical research in Germany.

Journ. Roy. Aer. Soc., Vol. 34, No. 236 (Aug. 1930), London, pp. 649-689, ill., diagrs.

McCOLLUM-PETERS. The McCollum-Peters six element telemeter strain gauge set.

Air Corps Information Circular, Vol. 7, No. 657 (Dec. 15, 1930), Washington, United States Government Printing Office, 1930, pp. 11, ill., diagrs.

Air Corps Technical Report No. 3313.

MACCRACKEN, WILLIAM P., jr. The Department of Commerce position in accident publicity.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 53, 248, port.

— Glancing back at 1929. Civil aviation progress.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., p. 61, port.

— The growth of aeronautical law in America.

Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 415-421.

MC CREA, PAUL. A month of vacation in two weeks.

National Aeronautic Review, Vol. 8, No. 7 (July 1930), Washington, pp. 17, 21, 24, ill.

McCUDDEN, JAMES. Flying fury.

London, John Hamilton Ltd.

McCUTCHEON, W. W. Airplane dopes and lacquers and their application.

Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 263-267, port.

McGEHE, JANE A. Who owns the air?

Western Flying, Vol. 7, No. 5 (May 1930), Los Angeles, Cal., pp. 65, 142.

MACHADO, AGENOR. Ali italiane in Brasile.

Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 290-295.

- MACLEAN, JOHN KENNEDY, and CHELSEA FRASER. *Heroes of the farthest North and farthest South.*
New York, Thomas Y. Crowell Company, 1930, pp. xiv, 472, illus.
- MCLEOD, ALBERT K. *Aeronautic efficiency keeping pace with automobile.*
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 44-45, ill.
- MCMAHON, JOHN ROBERT. *The Wright brothers, fathers of flight.*
Boston, Little, Brown, and Company, 1930, pp. vii, 308, illus.
- MCMANUS, MRS. W. L. *Air saga of a business woman.*
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, p. 20.
- MACMILLAN, NORMAN. *The air-tourist's guide to Europe.*
New York, I. Washburn, 1930, pp. xiv, 276, illus., maps.
- The art of flying landplanes and seaplanes.
Journ. Roy. Aer. Soc., Vol. 34, No. 232 (April 1930), London, pp. 305-328.
- L'arte del volo su aeroplani ed idrovolanti.
Notiziario Tecnico di Aeroanutica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 83-92, diagrs.
- The fifth International Air Congress.
The Aeroplane, Vol. 39, No. 12 (Sept. 17, 1930), London, p. 666.
- An hour of aviation.
Philadelphia and London, J. B. Lippincott Company, 1930, pp. 158.
- MCNAIR, ARNOLD D. *The beginnings and the growth of aeronautical law.*
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 383-392.
- MCNAMARA, JOHN FRANCIS. *Playing airplane.*
New York, The Macmillan Company, 1930, pp. vi, 128, illus.
- MCNICHOLAS, H. J., and A. F. HEDRICK. *The structure and properties of parachute cloths.*
National Advisory Committee for Aeronautics, Technical Notes No. 335, Mar. 18, 1930,
Washington, March 1930, pp. 28, diagrs., tabs.
- McOMIE, MARGARET. *Selling flight training.*
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1088-1090, ill., port.
- MCREYNOLDS, CHARLES F. *The aircraft market in the West.*
Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 698-702, illus.
- How Chicago took the air races.
Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 214-216.
- The Lehigh airports competition.
Aviation, Vol. 28, No. 3 (Jan. 18, 1930), New York, pp. 104-107, ill.
- Lighting Los Angeles airports.
Aviation, Vol. 28, No. 20 (May 17, 1930), New York, pp. 993-996, illus.
- Lockheed monocoque fuselage construction.
Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 246-247.
- The Rankin system of flight instruction.
Aviation, Vol. 28, No. 17 (April 26, 1930), New York, pp. 836-838, illus.
- MACY. *See* Horns. *New super-power horn for airports.*
- MADDUX AIR LINES. *See* H. H.: De Transcontinental Air Transport-Maddux luchtlijnen.
- MADRID. *See* Sanz, Angel B.: L'aeroport de Madrid.
- MAGALDI, GIULIO. *Gli aeromobili per servizi pubblici e le norme di abilitazione del Registro Italiano.*
L'Aerotecnica, Vol. 10, N. 9-10 (Sett. Ott. 1930), (Anno VIII), Roma, pp. 673-688.

- MAGNAN, A. *See* Huguenard, E., A. Magnan et A. Planiol: *Aérologie.—Sur une méthode de mesure de la turbulence de l'atmosphère.*
- *See* Huguenard, E., A. Magnan, et A. Sainte Lague: *Sur la détermination expérimentale des polaires d'avions en vol.*
- MAGNESIUM alloys. *See* Archbutt, S. L., and J. W. Jenkin: *Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition—(Continued).*
- *See* Tapsell, H. J., S. L. Archbutt, and J. W. Jenkin: *Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.*
- MAGNETO compass. *Magneto compass now on the market.*
Airway Age, Vol. 11, No. 4 (April 1930), New York, p. 564, ill.
- MAGNUS effect. *See* Ahlborn, Fr.: *The Magnus effect in theory and in reality.*
 — *See* Blenk, Hermann: *Der Magnuseffekt in Theorie und Wirklichkeit.*
- MAGOUN, ALEXANDER. *See* Hodgins, Eric, and F. Alexander Magoun: *Sky high.*
- MAHONEY, PAUL. *See* Hubbard, Henry Vincent, Miller McClintock, Frank B. Williams, Paul Mahoney and Howard K. Menhinick: *Airports, their location, administration and legal basis.*
- MAIL. Air mail fees, G. P. O. reply to Sir Eric Geddes.
Flight, No. 1137, Vol. 22, No. 41 (Oct. 10, 1930), London, p. 1121.
- Au pavillon de Marsan. *L'aéronautique et l'art. Première Exposition Internationale de Poste Aérienne.*
L'Aérophile, 38e année, No. 10 (15 oct. 1930), Paris, p. 301.
- Business men and the air mail.
Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1166.
- New plan for air mail payments.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 212-213, ill.
- De technische organisatie der aéropostale.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 293-296, ill.
- The use of air mails.
Flight, No. 1128, Vol. 22, No. 30 (July 25, 1930), London, pp. 823-824.
- *See* Atlantic: *La première liaison postale aérienne à travers l'Atlantique Sud.*
- *See* Bradbrooke, F. D.: *With the night mail.*
- *See* Clagett, Brice: *The new air mail law.*
- *See* Glover, W. Irving: *The air mail in Latin America.*
- *See* Grey, Charles Grey: *The technical organisation of the Compagnie Générale Aéropostale.*
- *See* Grimault, P.: *The technical organisation of the Compagnie Générale Aéropostale.*
- *See* Herron, W. G.: *The new air mail act—What its application will do for aviation.*
See Herron, W. G.: *New life for air lines.*
- *See* India: *De postvluchten op Indië.*
- *See* Jones, Ernest: *The air mail crosses the dollar line.*
- *See* Orlovius, Heinz: *Deutsche luftpost.*

- MAIL.** *See* Pochhammer, B.: Das Prallschiff als schnelles Postluftschiff.
- *See* Potter, Leslie S.: Cairo-Baghdad air mail route.
- *See* Radcliffe, Frank: Technical features of the air mail.
- *See* United States Congress. House. Committee on Post-office and Post Roads: Air mail flyer's medal of honor . . . Report. To accompany H. R. 101.
- *See* United States Congress. Senate. Committee on Post Offices and Post Roads: Air-mail flyer's medal of honor . . . Report. To accompany H. R. 101 . . .
- *See* Vance, Clair K.: On through the night.
- MAILFERT.** L'aviation et les incendies de forêts. *Revue des Forces Aériennes*, No. 14 sept. 1930, Paris, pp. 1065-1079.
- MAINTENANCE.** *See* Probyn, H. M.: Flying and maintenance from the owner's point of view.
- MAIO, RAFFAELLO DI.** *See* Di Maio, Raffaello.
- MAIORCA, SALVATORE.** Sui carrelli per aeroplani. *L'Aerotecnica*, Vol. 10, N. 9-10 (Sett.-Ott. 1930), (Anno VIII), Roma, pp. 689-745, ill., tabls.
- MAITLAND, C. E., and J. H. C. WAKE.** Comparative handling tests of three Bristol fighter aircraft with different types of slots. *Aer. Res. Comm., Rep. Mem.*, No. 1332, (Ae. 464), October 1929, London, 1930, pp. 8, ill., diagr.
- MAITLAND, C. E., and A. E. WOODWARD NUTT.** Flight tests on the variation of the range of an aircraft with speed and height. *Aer. Res. Comm., Rep. Mem.*, No. 1317, (Ae. 454), June 1929, London, 1930, pp. 7, diagrs. With an appendix by H. T. Tizard.
- MAITLAND, C. E.** *See* Jones, B. Melvill, C. E. Maitland, and R. P. Alston: Records of the lateral motions of a stalled Bristol fighter aeroplane with slots upon the upper wing tips. Experiments made in the Cambridge University Air Squadron.
- *See* Jones, E. T., C. E. Maitland, and W. E. Purdin: Stalled flight tests of a Moth fitted with auto-control slots and interceptors.
- MALARIA.** *See* Nola, Angelo di: La lotta contro la malaria in aviazione.
- MALMGREN, FINN.** *See* Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia."
- MANGIACAPRA, ARMANDO.** Il labirinto vestibolare nel volo. *Riv. Aeron.*, Anno 6, N. 7 (Luglio 1930), Roma, pp. 73-100.
- MANISCO, GIOVANNI.** La radio in aviazione. *Riv. Aeron.*, Anno 6, N. 6 (Giugno 1930), Roma, pp. 461-494, ill., tabl.
- MANNING, LEROY.** European aeronautics and American foreign sales possibilities. *Aviation*, Vol. 28, No. 2 (Jan. 11, 1930), New York, pp. 44-48, ill.
- MANOMETERS.** *See* Ower, E.: A micromanometer of high sensitivity.
- MAPPING.** *See* Corlett, E. H.: Weather influence on mapping by airplane.
- *See* Ross, Raymond L.: Maps for aviators.
- MAPS.** Edward Stanford, Ltd. Conveniently mounted maps for the light plane. *Air Annual of the British Empire* 1930, London, pp. 636-637, ill.

MAPS. *See* Grasso, Renato: *La carta aeronautica del R. Aero Club d'Italia*.

— *See* Grasso, Renato: *Carte aeronautiche internazionali. Segni, simboli ed abbreviazioni convenzionali*.

— *See* Kennedy, Mel S.: *Compiling aerial maps*.

— *See* Kennedy, Mel S.: *Field use of aerial maps*.

— *See* United States Department of Commerce. Aeronautics Branch: *Airway map of the United States, July 1, 1930*.

MARCH, H. W. *See* Trayer, George W., and H. W. March: *The torsion of members having sections common in aircraft construction*.

MARCONI. *A new Marconi aircraft wireless set*.

Flight, No. 1137, Vol. 22, No. 41 (Oct. 10, 1930), London, p. 1124, ill.

MARIE, FELIX. *Bombardement d'instruction avec des projectiles de petit calibre*.

Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 585-593, diagrs., tabs.

— *Les bombardements aériens comparés aux tirs de l'artillerie*.

Revue des Forces Aériennes, No. 9, avril, 1930, Paris, pp. 462-465.

— *L'écart probable dans un bombardement aérien*.

Revue des Forces Aériennes, No. 11, juin 1930, Paris, pp. 714-719, diagr.

— *Des moyens qu'il conviendrait de mettre à la disposition des équipages pour l'exécution des bombardements aériens*.

Revue des Forces Aériennes, No. 14, sept 1930, Paris, pp. 1080-1084.

— *Une particularité de la portée des bombes d'aviation*.

Revue des Forces Aériennes, No. 8, mars 1930, Paris, pp. 345-348, diagr.

MARKERS. *Semi-submerged runway marker*.

Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 976, 978, ill.

— *See* Ross, Hugh G.: *A new airplane guide and obstruction marker*.

MARKETING problems. *See* Gragg, Charles I.: *Marketing problems in the aviation industry*.

MARKWARDT, L. J. *Aircraft woods: Their properties, selection, and characteristics*.

National Advisory Committee for Aeronautics, Report No. 354, Oct. 15, 1930, Washington, U. S. Government Printing Office 1930, pp. 34, diagrs., tabs.

MAROLLES, R. F. DE. *See* Christopher, Luke, and R. F. de Marolles: *The life history of a world's record. Part one: From the flying field to Washington, by Luke Christopher. Part two: From Washington, to Paris, by R. F. de Marolles*.

MAROLLES, R.-J. DE. *Sur la règlement du prochain challenge de tourisme international*.

L'Aéronautique, 12e année, No. 128 (jan. 1930), Paris, pp. 5-8, ill.

MARRIOTT, J. S. *Regulating air commerce. Article 1—inspection*.

Aviation, Vol. 28, No. 3 (Jan. 18, 1930), New York, pp. 94-96, port.

MARSH, WILLIAM LOCKWOOD. *The evolution of rigid airship design*.

Air annual of the British Empire 1930, pp. 95-104, ill.

— *Wings, the A B C of flying*.

New York, Vanguard Press, 1929, pp. 138.

MARSHALL, FRED F. *New York air show may determine future show policy*.

U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, p. 51.

— *The New York show*.

U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 39-47

- MARSHALL, FRED F.** Richfield host to foreign speed flyers.
U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, pp. 45-46.
- MARSON, T. B.** Scarlet and Khaki.
London, Jonathan Cape, 1930, pp. 226, illus.
- MARTENS, C. H.** Determining the parasitic drag of airplane tires.
Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 359-360, diagrs., tabl.
- MARTIN, BRIAN.** "Wapiti" steel wings.
Journ. Roy. Aer. Soc., Vol. 34, No. 237 (Sept. 1930), London, pp. 789-793.
- MARTIN, GLENN L.** The Glenn L. Martin plant.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1430-1433, ill.
- See Glenn L. Martin Company.
- MARTINOT-LAGARDE, A.** Sur un dispositif de tunnel aérodynamique pour l'étude de l'écoulement à deux dimensions.
C. R. Acad. Sci., T. 188, No. 25 (17 juin 1929), Paris, pp. 1596-1597.
- MASCHINO, MAURICE.** La condition juridique du personnel aérien. Preface de Jacques Vivent.
Paris, Per Orberm.
- Les servitudes aériennes. Un projet de loi français.
Droit Aérien, Juillet, Août, Septembre 1930, Paris, pp. 436-441.
- MASON, GEORGE.** The Godfrey Cabot pickup device.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 62.
- MASON, GRAHAM S.** A dinner that won an airport.
National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 35-36.
- MASTERMAN, E. A. D.** The evolution of mooring and handling devices for airships.
Air annual of the British Empire 1930, pp. 105-117, ill.
- MATERIALS.** Aviation materials—reviewed in broad symposium.
Iron Age, Vol. 126, No. 1 (July 3, 1930), Middletown, N. Y., pp. 19-22, 60.
- Symposium on aircraft materials.
Mech. Eng., Vol. 52, No. 8 (Aug. 1930), New York, pp. 781-786, 802.
- See Abraham, Martin: Drähte, Litzen und Seile im Flugzeugbau.
- See Rosenhain, Walter: The development of materials for aircraft purposes.
- MATHAR, J.** Metal covering of airplanes.
National Advisory Committee for Aeronautics, Technical Memorandums No. 592, Nov. 20, 1930, Washington, November 1930, p. 15, illus., diagrs.
- MATHER FIELD.** See Kane, Clarence P.: The Army Air Corps maneuvers at Mather Field.
- MATHIEWS, FRANKLIN K.** Flying high, a book of aviation stories and model airplanes for boys.
New York, Grosset & Dunlap, 1930, pp. 190, illus.
- MATOSSI, FRANK.** See Schaefer, Clemens, und Frank Matossi: Der Raman-effekt.
- MATRICARDI, ATTILIO.** Una importante fase dell'addestramento al tiro di caduta.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 232-244, ill.
- MATTEI, PIETRO.** L'armata aerea.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 1-10.

- MATTEI, PIETRO. *L'armata aerea e l'aviazione da caccia.*
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 469-478.
- MATTHAES, KURT. *Kurbelwellenbrüche und Werkstofffragen.*
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 443-472, illus., diagrs., tabs.
- MATTHEWS, J. *The English flying sport movement.*
Aeronautica, Vol. 4, No. 1 (Jan. 1930), Arnhem, pp. 7-9, illus.
- MATTHIAS, JOACHIM. *Entwicklung des britischen Segelflugwesens.*
Luftschau, 3. Jahrg., Nr. 6 (24. März 1930), Berlin, p. 42.
- *Handelsluftfahrt. Die Befeuerung der Nachtflugstrecken Berlin-Halle und Brüssel-Ostende. Ausserplanmässiger Fracht- und Personenluftverkehr.*
Die Luftwacht, Heft 2, Feb. 1930, Berlin, pp. 56-61.
- *Handelsluftfahrt. Der französische Luftverkehr.*
Die Luftwacht, Heft 3, März 1930, Berlin, pp. 107-110.
- *Handelsluftfahrt. Organisation und Entwicklungsmöglichkeiten des britischen Reichsluftweges nach Südafrika.*
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 156-157, map.
- *Die Weltluftfahrt 1929. III. Handelsluftfahrt.*
Die Luftwacht, Heft 1, Jan. 1930, Berlin, pp. 24-28.
- *Der Weltluftverkehr.*
Aeronautica, Vol. 4, Nos. 2, 3 (Feb., March, 1930), Arnhem, pp. 22-23, 25-26, 48-49, ill.
- MÁTYÁS, BERNÁRD. *Beszámolo a vitorlázó repülő kongresszusról.*
Aviatika, 6. evf., 4. szám (1930 április), Budapest, pp. 90-92, ill.
- MAUD expedition. See Wisting, Oscar: 16 år med Roald Amundsen; fra pol til pol.
- MAUGEIN, H. *See Courrègelongue, J., et H. Maugein: Hydrodynamique expérimentale. Sur quelques expériences d'auto-oscillation et d'autorotation de plaques immergées.*
- MAUGERI, FRANCO. *Una concezione francese del fattore aereo nella strategia navale.*
Riv. Aeron., Anno 6, N. 5 (Maggio 1930), Roma, pp. 226-234.
- *Le nostre navi portaerei.*
Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 503-507.
- MAURER, H. *Norddregfehler und Deviation.*
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 13. Heft (14. Juli 1930), München, pp. 333-335, ill.
- MAYER, HERBERT C. *Constructive accident publicity.*
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, pp. 26, 28-29.
- Redirecting aviation publicity.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 23-24.
- MAYO, R. H. *British commercial aircraft.*
Air annual of the British Empire 1930, London, pp. 689-696.
- MAXIM, HIRAM. *See Hegener, Henri: De baanbrekers der dynamische luchtaart XIX. Sir Hiram Maxim.*
- MAZZARON, ANTONGIULIO. *Nozioni elementari di meteorologia ad uso degli aviatori.*
Milano, Editore "Aeronautica," pp. 53, ill.

MECHANICAL drawing. See Gerschgorin, S.: Ein Apparat zur mechanischen Ausführung der konformen Abbildung. $\xi = \frac{1}{2} \left(z + \frac{r^2}{z} \right)$.

MECHANIZED forces. See Leigh-Mallory, T. L.: Air co-operation with mechanized forces.

MECKEL, P. A. Orientierungssystem für Luftfahrer.
Luftschau, 3. Jahrg., Nr. 24 (24. Dez. 1930), Berlin, pp. 187-188, map.

MECOZZI, AMEDEO. Aviazione da turismo.
Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 197-224.

MEDICINE. See Bauer, Louis H.: Medical aspects of safe flying.

— See Boeke, J.: De medische sectie.

— See Faenzi, Aldo: Esercizi fisici in rapporto al pilotaggio.

— See Kaiser: Physiologische Probleme des Höhenfluges.

— See Mangiacapra, Armando: Il labirinto vestibolare nel volo.

— See Nola, Angelo di: La lotta contro la malaria in aviazione.

— See Nola, Angelo di: Questioni sanitarie di aviazione.

— See Rosenstiel: Étude des conditions d'utilisation d'un hydravion sanitaire dans la marine de guerre.

MEERWEIN, CARL FRIEDRICH. De baanbrekers der dynamische luchtvaart XVII. Carl Friedrich Meerwein.

Het Vliegveld, 13de Jaarg., No. 1 (Jan. 1929), Amsterdam, pp. 19-20, ill.

MEHNE, ERICH. Handbuch für Luftfahrt und Luftfahrtindustrie.
Berlin, Luftfahrt-Verlag G. m. b. H., pp. 360. 3. Auflage.

— Luft und See. Jahrbuch 1930.
Berlin, E. S. Mittler & Sohn, 1930, pp. 124, ill.

MEIGS, MERRILL C. As one pilot to another.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 155-156, illus.

MEISSNER, JAMES. See Buckley, Harold R.: Sportsmen pilots of 1918.

MEISSNER, KARL LEO. Neue Untersuchungen über den Einfluss von Fe, Si und Mn auf die Duralumin Veredelung.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 341-346, diagrs., tabs.

MEJIAS, JERONIMO, y BLANCO BELMONTE. La primera vuelta al mundo en el "Graf Zeppelin".

Madrid, Hauser y Menet, pp. 138, ill.

MÉKONG. See Menés: En hydravion au-dessus du Mékong.

MELTON, E. R. See Brombacher, W. G., and E. R. Melton: Temperature coefficient of the modulus of rigidity of aircraft instrument diaphragm and spring materials.

MENDOZA, SAVERIO LAREDO DE. Gabriele D'Annunzio, aviatore di guerra, Documenti e testimonianze raccolti dell'aviatore Saverio Laredo de Mendoza.

Milano, Il presa Editoriale Italiana, 1930-VIII, pp. 518.

MENÉS. En hydravion au-dessus du Mékong.
Revue des Forces Aériennes, No. 14, sept. 1930, Paris, pp. 1047-1064, ill., map.

- MENHINICK, HOWARD K. *See* Hubbard, Henry Vincent, Miller McClintock, Frank B. Williams, Paul Mahoney and Howard K. Menhinick: Airports, their location, administration and legal basis.
- MERKEL, W. Ein neues Land und Wasserflugzeug (Aufgaben des Flugzeugbaues). Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 256-259, ill.
- Über die Kurve. Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, 1930, Berlin, pp. 96-97, ill.
- MERRILL, LOUIS J. Ascendancy of the air-cooled radial—diesels in largest sizes—higher r. p. m. Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 530-531.
- MESROUZE, R. La formation des mécaniciens de l'aviation au centre des spécialistes de Bordeaux. Revue des Forces Aériennes, No. 13 août 1930, Paris, pp. 879-890, ill.
- METAL construction. Un'innovazione nella costruzione metallica. Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 346-348, ill.
- See Bleistein, W.: Metalluftschiffe.
- See Boulton & Paul: Boulton & Paul, Ltd. Metal construction.
- See Breguet: Le nouveau sesquiplan Breguet 27 à structure en acier.
- See Gloster: "Gloster" metal construction.
- See Junkers, Hugo: Metal aeroplane construction.
- See Pleines, Wilhelm: Nietverfahren im Metallflugzeugbau.
- See Pleines, Wilhelm: Riveting in metal airplane construction.
- See Pollard, H. J.: Structures of metal aircraft.
- See Potez: Un nouvel avion intégralement métallique: le biplace Potez 39.
- See Upson, R. H.: The metal clad airship.
- See Wait, William, jr.: Safety and high performance—Go slow on metal.
- METAL corrosion. *See* Downey, H. C.: Airplane maintenance in the tropics. The problems of wood decay and metal corrosion and how they are met.
- METAL covering. *See* Mathar, J.: Metal covering of airplanes.
- METALCLAD. *See* Detroit Aircraft Corporation: U. S. Navy ZMC-2 . . . world's first metalclad airship, constructed at Grosse Ile Airport, Detroit, for the U. S. Navy . . .
- See Fritsche, Carl B.: The metalclad airship.
- METALS. La radiografia nell'esame dei metalli. Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 64-67, ill.
- Ricerche sulla fatica dei metalli. Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), pp. 47-63, ill.
For original article: *See* Cazaub, R.: Recherches sur la fatigue des métaux.
- See Aluminum: Aluminum in aircraft.
- See Archbutt, S. L., and J. W. Jenkin: Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition—(Continued).
- See Bergmann, Stefan, und H. Reissner: Neuere Probleme aus der Flugzeugstatik. Über die Knickung von Wellblechstriifen bei Schubbeanspruchung.

METALS. *See* Berry, J. W.: Cold workings of metals.

- *See* Black, Archibald: A new high strength aluminum alloy.
- *See* Hatfield, W. H.: Steels used in aero work.
- *See* Johnson, L. W.: The inspection of metals and their alloys.
- *See* Mossman, Ralph W., and Russell G. Robinson: Bending tests of metal monocoque fuselage construction.
- *See* Mutchler, W. H., and R. W. Buzzard: Methods for the identification of aircraft tubing of plain carbon steel and chromium-molybdenum steel.
- *See* Schmieden, C.: Das Ausknicken versteifter Bleche unter Schubbeanspruchung.
- *See* Schwarz, O.: The relation between the tensile strength and the hardness of metals.
- *See* Smith, George Michael: Strength in shear of thin curved sheets of Alclad.
- *See* Steel: Steels and alloys.
- *See* Svehla, George: Inspection of aircraft metals.
- *See* Tapsell, H. J., S. L. Archbutt, and J. W. Jenkin: Mechanical properties or pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.
- *See* Weinig, Fritz: Kavitation als primäre Ursache von Korrosionserscheinungen an Flugzeug-Schwimmkörpern.

METALLURGY. *See* Haydock, John, jr.: Metallurgy for Wasps and Hornets.

METEOROLOGY. Meteorologie aus dem Gebiete der See- und Küstenluftfahrt.

Heft 1 bis 5. Berlin, Mittler & Sohn, Ills, tabls., Herausgegeben durch die "Deutsche Seewarte" (Sammlung von Aufsätzen und Mitteilungen aus den "Annalen d. Hydrographie u. Maritimen Meteorologie" 1927-1930).

- *See* Aerology: Aérologie. Les trombes artificielles.
- *See* Airscapes: Transatlantic "Airscapes": A seaplane's shadow in a rain circle. Flying high above a belt of fog.
- *See* Ali, Barkat: The wind at Agra and its structure.
- *See* Baldit, Albert: Météorologie du relief terrestre, vents et nuages.
- *See* Banerji, Sudhansu Kumar: The effect of Indian mountain ranges on air motion.
- *See* Barlow, E. W.: Some problems of modern meteorology, No. 2. The present position of theories of the circulation of the atmosphere.
- *See* Bolla, Filippo: La velocità del vento al suolo e a quote a Palermo.
- *See* Bradbrooke, John: Wind and weather.
- *See* China: Elements of aeronautical meteorology.
- *See* Corlett, E. H.: Weather influence on mapping by airplane.
- *See* D., Ch.: Protection météorologique de la ligne San Francisco-Los Angeles pare un réseau spécialisé.
- *See* Delambre: La part de la météorologie dans la victoire de Costes et Bellonte.

- METEOROLOGY. *See* Dines, L. H. G.: Dines balloon meteorograph and the method of using it.
- *See* Dobler, Martin L.: Interpreting the weather map.
- *See* Dobler, Martin L. Weather factor in flying.
- *See* Elm, Ienar E.: Weather and why; an aviator's presentation of aeronautical meteorology.
- *See* Eredia, Filippo: I nuovi metodi di sondaggi aerologici dell'alta atmosfera ai fini pratici della previsione del tempo.
- *See* Georgii, Walter: Beobachtungsergebnisse aerologischer Flugzeugaufstiege in Darmstadt und auf der Wasserkuppe in der Rhön Dezember 1927–Dezember 1928.
- *See* Ghosh, U. N.: Distribution of air density at M. S. L. over India.
- *See* Graffiny, H. de: On peut capter et utiliser l'électricité atmosphérique au moyen de ballons.
- *See* Gregg, Willis Ray: Aeronautical meteorology.
- *See* Grey, Charles Grey: On weather and other service.
- *See* Grosse: Temperaturen und Windrichtungen in grösseren Höhen.
- *See* Huguenard, E., A. Magnan et A. Planiol: Aerologie.—Sur une methode de mesure de la turbulence de l'atmosphère.
- *See* Humphreys, W. J.: Meteorology and its importance to aviation.
- *See* Kimball, James H.: Trans-Atlantic weather.
- *See* Kimball, James H.: Weather considerations for trans-Atlantic air routes.
- *See* Kirby, Harold Lewis: An analysis of meteorology as related to the operation of aircraft.
- *See* Lindgren, Gustave S.: New York State airways weather service.
- *See* Mazzaron, Antongiulio: Nozioni elementari di meteorologia ad uso degli aviatori.
- *See* Normand, C. W. B.: India Meteorological Department. Upper air data 1928. Part 13. Monthly means of pilot balloon data and monthly frequencies of cloud direction.
- *See* Ramanathan, K. R.: Discussion of results of sounding balloon ascents at Agra during the period July 1925 to March 1928 and some allied questions.
- *See* Ramanathan, K. R.: India meteorological Department. Upper air data 1928. Part 14. Sounding balloon data.
- *See* Shaw, Sir William Napier: Manual of meteorology. Vol. III. The physical processes of weather.
- *See* United States Department of Agriculture, Weather Bureau: Instructions for making aerological observations, by means of kites, airplanes, sounding balloons, limited-height sounding balloons, free-rising captive balloons, ceiling balloons.
- *See* Whatham, Richard: Meteorology for aviator and layman.

- METRAL, A.** Aérodynamique.—Sur un caractère essentiel des représentations conformes utilisables pour le tracé des profils d'ailes d'avions.
C. R. Acad. Sci., T. 190, No. 2 (13 Jan. 1930), Paris, pp. 103-106, ill.
- METTAM, H. A.** Structural strength requirements for civil aircraft in Great Britain and the U. S. A.
Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 18 (Oct. 29, 1930), London, pp. 973-980, diagrs., tabs.
- MEYER, KONRAD.** Aufgaben und Ziele der Deutschen Versuchsanstalt für Luftfahrt.
Bauer, Bartholdy, Meyer, Lemcke. Forschungsinstitute ihre geschichte, organization und Zelle, 2 Bd., Hamburg, Paul Hartung Verlag, 1930, pp. 277-284.
- MEYER, WILLY.** Flugdienst von heute.
Berlin, Verlag der Verkehrswissenschaftlichen Lehrmittelgesellschaft m. b. H. bei der Deutschen Reichsbahn, 1930, pp. viii, 138, ill., map.
- Von Wright bis Junkers.
Berlin, Deutsche Verlagsgesellschaft für Politik und Geschichte.
- MEYERS, FRANKLIN D.** See Putnam, Lawson L., and Franklin D. Meyers: Accounting for aviation operators.
- MEXICO.** See Cooper, Mabel C.: The airlines and airports of Mexico.
- MEXICO CITY.** Mexico City builds port.
Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 953-954, ill.
- MICHAEL, FRANZ.** Versuche mit einer neuen Spornform für Flugzeuge. (DVL-Spornkufe.)
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 95-100, illus., diagrs., tabs.
- MICHELIN.** Guide aérien Michelin.
France, Afrique du Nord, A. O. F.
- MICHIGAN.** Laws relating to aeronautics. Compiled under the supervision of John S. Haggerty, Secretary of State.
[Lansing, 1929], pp. 11.
Sidney A. Schulte, Deputy Secretary of State. By authority . . .
- See Zeisler, Karl F.: Michigan's new state aviation code.
- MIEDEN VAN OPMEER, J. P. F. VAN DER.** Het gevaar van verandering in de afwijkking van het kompas voor het vliegtuig. Door den Directeur Kon. Meteorol. Instituut, Rotterdam.
Het Vliegveld, 13de Jaarg., No. 6 (Juni 1929), Amsterdam, pp. 227-228.
- MIGNET, HENRI.** Comment j'ai construit mon avionnette; le vol à viole dynamique, constructions, expériences, observations personnelles, croquis directs de l'auteur.
Paris, Éditions Fournier [1930], pp. 350, ill.
- MIKI, TETSUO.** Die stabilität und die lastigkeit der flugzeuge.
Journal of the Society of Mechanical Engineers, Vol. 33, No. 1 (March 1930), Tokyo, pp. 1-3, ill.
- MILITARY aeronautics.** Air Corps work reviewed.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 47-50, ill., ports.
- Demonstrations de forces aériennes aux États-Unis.
L'Illustration, 88e année, No. 4549 (10 mai 1930), p. 60, ill.
- Important advance in aircraft design for military purposes.
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, p. 42, ill.
- Der kampf um die Luft.
Süddeutschen Monatshefte, Oktoberheft, 1929, München, Verlag: Süddeutsche Monatshefte, p. 72.

MILITARY aeronautics. Naval aeronautics—1929.

Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 51-54, ill., ports.

- See Africa: L'aviation militaire de l'Afrique Orientale Française.
— See Amet: L'Aéronautique à la bataille du Jutland.
— See Armengaud: L'aviation et la conduite de la manœuvre et de la bataille.
— See Attal, Salvatore: I limiti della difesa aerea territoriale.
— See Attal, Salvatore: La milizia volontaria e il tiro controaereo.
— See Balbás, V.: La guerra de tres dimensiones.
— See Balloons: Un nouveau ballon captif.
— See Beltrami, Gian Mario: L'aeronautica nella difesa aerea.
— See Beltrami, Gian Mario: Le incursioni aeree.
— See Billard: Le contrôle des exercices de bombardement aérien.
— See Boone, Andrew R.: Five miles up.
— See Brumelot: Le 11e régiment d'aviation de bombardement.
— See Cammen, Leon: The military value of aviation.
— See Canada. Royal Air Force: Information relating to enlistment, terms of service, pay, etc., of airmen and boys in the Royal Canadian Air Force.
— See Carnevale, Ernesto: Ricerca della migliore rotta per un aereo che si approssima ad una batteria nemica.
— See Cirenaica: L'aviazione nella Cirenaica. (novembre 1929-maggio 1930).
— See Courtney, C. L.: The strategic mobility of air forces.
— See Courtney, C. L.: The strategical mobility of air forces.
— See Deane, Gerald N.: The purchase of naval and military aircraft.
— See Delanney: L'attaque aérienne massive du territoire.
— See Devèze: Le tir en avion sur objectif aérien.
— See Difese, (Le): Le difese contro gli aerei e contro i gas.
— See Douhet, Giulio: La guerra del 19 . . .
— See Douhet, Giulio: Der Krieg im Jahre 19 . . .
— See Drouas, de: L'aviation de la division de cavalerie.
— See Etienne, P.: Recherche du renseignement par action combinée.
— See Fickel: Colonel Fickel's nonstop flight to Canal Zone of great military value.
— See Fechet, James E.: The training of air corps reserve officers.
— See Gama: La sécurité sur la ligne aérienne transafricaine.
— See Gardner, M. B.: Aerial acrobatics—Its place in military flying.
— See Govi, Luigi: La difesa antigas.
— See Great Britain: Anti-aircraft searchlight drills. 1930.
— See Great Britain: The co-ordination of defence services.
— See Guillemeney. L'aviation et les services de renseignements dans une guerre moderne.

- MILITIARY aeronautics. *See* Gustosa, Corrado: Aerocaccia da difesa, monoposti da caccia, monoposti da allarme.
- *See* Gustosa, Corrado: Uno sguardo alle nascenti aviazioni militari dei piccoli Stati di Europa.
- *See* Guyomar: Le problème de contrôle du bombardement et la méthode du Lieutenant-Colonel Tétu.
- *See* Ingalls, David S.: The modern dirigible is practically invulnerable when operated at sea.
- *See* Jannekeyn: De l'arbitrage. Figuration par avion des tirs d'artillerie.
- *See* Jouglard, P.: Note sur les ballons captifs d'observation.
- *See* Kane, Clarence P.: The Army Air Corps maneuvers at Mather Field.
- *See* Knight, Clayton: A former combat pilot sits in at the "war".
- *See* Langevin, H.: "Action de masse" aérienne dans une bataille défensive.
- *See* Langevin, H.: Les prémisses de la "Chasse de nuit" en France.
- *See* Langley, T. R.: Winter cross-country flight of first pursuit group.
- *See* Marie, Félix: Bombardement d'instruction avec des projectiles de petit calibre.
- *See* Marie, Félix: Les bombardements aériens comparés aux tirs de l'artillerie.
- *See* Marie, Félix: L'écart probable dans un bombardement aérien.
- *See* Marie, Félix: Des moyens qu'il conviendrait de mettre à la disposition des équipages pour l'exécution des bombardements aériens.
- *See* Matricardi, Attilio: Una importante fase dell'addestramento al tiro di caduta.
- *See* Mattei, Pietro: L'armata aerea e l'aviazione da caccia.
- *See* Maugeri, Franco: Le nostre navi portaerei.
- *See* Maugeri, Franco: Una concezione francese del fattore aereo nella strategia navale.
- *See* Moffett, William A.: Wings of the navy.
- *See* Néant: L'instruction d'observation donnée en salle aux élèves-observateurs en ballon captif.
- *See* Niessel, Henri Albert: Préparons la défense antiaérienne.
- *See* Orselli: Les nouveaux postes de T. S. F. de l'aviation militaire.
- *See* Panama Canal: Die amerikanischen Flotten- und Luftmanöver am Panamakanal 1929.
- *See* Pennès: Réflexions sur l'emploi de l'aviation dans la réduction de la dissidence au Sud du Maroc.
- *See* Prepositi, Clemente: Come nacque l'offensiva aerea nella guerra del mondo (Il bombardamento).
- *See* Ravelli, Ermanno: Studio di alcune spolette a percussione per bombe.
- *See* Rowell, Ross E.: Uses of aircraft in bush warfare.
- *See* Samson, Charles Rumney: Fights and flights.

- MILITARY aeronautics. *See* Sclafier: *L'aviation militaire en Mauritanie.*
- *See* Serra, de Rocca: *Défense des ballons par mitrailleuses terrestres.*
- *See* Smith, Karl F.: *Modern developments in naval aviation.*
- *See* Songia, Roberto: *Hangars smontabili.*
- *See* Spaight, James Molony: *Air power and the cities.*
- *See* Turner, Thomas C.: *Flying with the marines in Nicaragua.*
- *See* Vauthier: *Les détachements armés, transportés par avions.*
- *See* Verdurand, A.: *Le développement du tourisme aérien et l'emploi militaire de l'aviation.*
- *See* Voisin: *L'exploration aérienne à la Ve armée jusqu'à la veille de Charleroi (21 août 1914).*
- *See* Webb, L. D.: *Flying from the "Lexington" and "Saratoga."*
- *See* Webb, L. D.: *Off the catapult.*
- *See* Williams, Paul Whitecomb: *Legitimate targets in aerial bombardment.*
- MILLER, H. B.** Training the Naval Air Reserve.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 75-76, 184, illus.
- MILLER, FRANCIS TREVELYAN.** The world in the air; the story of flying in pictures.
New York, G. P. Putnam's Sons., 1930, 2 volumes illustrated.
- MILLER, HOWELL W.** Determining horse-power from flight tests.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1300-1301, tabs., diagrs.
- MILLER, I. W.** Inspection of aircraft.
Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 339-342, illus.
- MILLER, M. P.** An accurate method of measuring the moments of inertia of airplanes.
National Advisory Committee for Aeronautics, Technical Notes No. 351, Oct. 17, 1930, Washington, October 1930, pp. 20, illus.
- MILLER, RALPH N.** Effective airplane sales methods. Halley Aviation Management Inc. gains by all-around activity.
Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 821-823, ill.
- MILLIKAN, CLARK B.** An extended theory of thin airfoils and its application to the biplane problem.
National Advisory Committee for Aeroanutics, Report No. 362, Feb. 9, 1931, Washington, U. S. Government Printing Office 1930, pp. 33, illus., diagrs.
- MILNER, HENRY B.** The de-nationalisation of helium.
Nature, Vol. 126, No. 3189 (Dec. 13, 1930), London, pp. 920-921.
- MILTON, ORMAND.** An inventory of aviation today. As it might be taken by a banker.
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Cal., pp. 62-65, diagrs.
- MINELLI, CARLO.** Sulle tensioni e sulle deformazioni di particolari structure spaziali ad aste con due cerniere.
L'Aerotecnica, Vol. 10, N. 3 (Marzo 1930), (Anno VIII), Roma, pp. 131-148, ill.
- MINGOS, HOWARD.** The birth of an industry.
New York City, [Printed by W. B. Conkey Company] 1930, pp. 95, ports.
- MINING.** *See* New Guinea: Air transport aids mining in New Guinea.
- MISTRAL, FRÉDÉRIC.** *See* Faure-Favier, Louise: *L'aviation au Centenaire de Mistral.*

- MITCHELL, L. W., jr.** Operation and analysis of the aviation credit corporation. *Aviation*, Vol. 28, No. 4 (Jan. 25, 1930), New York, pp. 162-164.
- MITCHELL, WILLIAM.** Skyways; a book of modern aeronautics. London, Ernest Benn, Ltd., Philadelphia and London, J. B. Lippincott Company, 1930, pp. 314, illus., maps.
- MITTELHOZER, Walter.** Les ailes et les Alpes. Ouvrage publié avec la collaboration de H. Kempje. Adaptation de René Gouzy. Paris, Editions pittoresques.
- Im Flugzeug dem Nordpol entgegen. Zürich, Orell Füssli, pp. 106, illus.
- Kilimandjaro-Flug. Zürich und Leipzig, Verlag Orell Füssli, pp. 114, ill.
- Mittelmeerflug, mit 120 fliegeraufnahmen und einer einleitung. Zürich, Rascher & Cie., a.-g., 1930, pp. 164, illus., map.
- Über den Gletschern Afrikas. Luftschau, 3. Jahrg., Nr. 21 (10. Nov. 1930), Berlin, p. 162.
- See Ehrhardt, Gustav, und Walter Mittelholzer: Mittelmeerflug.
- MOBILITY.** See Courtney, C. L.: The strategic mobility of air forces.
- MOCK, RICHARD M., and EGINHARD PAPPEL.** German airplane requirements as compared with those of the Department of Commerce. (Part 1). *Aero Digest*, Vol. 17, No. 2 (Aug. 1930), New York, pp. 82-85, illus., diagrs., tabls.
- German airplane requirements as compared with those of the Department of Commerce. (Part 2). *Aero Digest*, Vol. 17, No. 3 (Sept. 1930), New York, pp. 86-88, illus. diagrs., tabls.
- MOCK, RICHARD M.** The Junkers G-38. *Aviation*, Vol. 28, No. 3 (Jan. 18, 1930), New York, pp. 113-117, ill.
- MODEL airplanes.** See Hamburg, Merrill: Beginning to fly; the book of model airplanes.
- MODELS.** See Hermuth, Paul: Der junge flugzeugbauer; eine anleitung zum bau von flugmodellen . . .
- See Langley, R.: The model aeroplane manual; a practical handbook on the building and flying model aeroplanes.
- See Stamer, Fr., und A. Lippisch: Der Bau von Flugmodellen.
- MOEBUS, L. A.** Aircraft seamanship. *Aero Digest*, Vol. 16, No. 4 (April 1930), New York, pp. 68-70, illus.
- MÖLLER, W.** Die Entwicklung des Fernkompasses und seine Bedeutung für die automatische Steuerung. *Zeitschr. Flugt. Motorluftsh.*, 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 640-645, illus.
- MOFFETT, WILLIAM A.** Glancing back at 1929. As seen by the Navy. *Western Flying*, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 62-63, port.
- Wings of the navy. *Western Flying*, Vol. 8, No. 1 (July 1930), Los Angeles, pp. 42-44, illus.
- MOKRZYCKI, G. A.** Aviation. Optimum d'exploitation des avions commerciaux. *C. R. Acad. Sci., T. 188, No. 16* (15 avril 1929), Paris, pp. 1031-1034, diagr.
- MONISH, B. H.**—See Heald, R. H., D. H. Strother, and B. H. Monish: Effect of variation of chord and span of ailerons on rolling and yawing moments at several angles of pitch.

- MONOCOQUE.** *See* Mossman, Ralph W., and Russell G. Robinson: Bending tests of metal monocoque fuselage construction.
- MONOMAIL.** *See* Boeing: The Boeing, "Monomail," new type transport plane.
- *See* Boeing: Monomail—the new Boeing passenger-cargo high speed plane.
- MONSOON.** Flying through the Monsoon.
Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, pp. 1033-1034.
- MONTAGNES, JAMES.** Canada's aerial expansion during 1929.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 66-67, 216, illus.
- Aviation development in Canada doubled.
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, pp. 46-47.
- Making an Indian treaty by air in Canada.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1442-1444, ill.
- Radio communication in the sub-Arctic.
Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 804-806, ill.
- MONTELUCCI, GIULIANO.** Il fenomeno della detonazione nei motori a scoppio, e gli antidetonanti.
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 488-513, diagrs.
- MONTGOMERY, JOHN K.** Chile's aviation progress.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 72-73, 214, illus.
- The wings of South America.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 55-58, illus., port., map.
- MONTRÉAL.** *See* R 100: R 100 flies to Montreal.
- MOONEY, C. R.** Fairfax airport at Kansas City.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 200-201, ill.
- MOONEY, JAMES E.** Air travel.
New York Chicago, C. Scribner's Sons., 1930, pp. xvi, 311, illus.
- MOORE.** Moore three-valve engine.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 140-142, ill., diagr.
- MOORING.** Airship mooring-strain indicator.
Engineering, Vol. 129, No. 3355 (May 2, 1930), London, pp. 584-585, ill.
- The St. Hubert airship mooring tower.
Engineer, Vol. 149, No. 3872 (March 28, 1930), pp. 358-359, ill.
- *See* Masterman, E. A. D.: The evolution of mooring and handling devices for airships.
- MORELLI, ERCOLE.** L'educazione aeronautica del popolo e l'incremento dell'arma aerea sono, davvero, fattori di guerre?
Riv. Aeron., Anno 6, N. 6 (Giugno 1930), Roma, pp. 495-504.
- Il Museo Storico della R. Aeronautica.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 74-84, ill.
- L'opera pia nazionale per le vedove e i figli degli aeronauti in Loreto.
Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 518-526, map.
- MORI, ANGELO.** Alcune considerazioni e confronti sulle norme di collaudo dell'aviazione Italiana e Americana.
Notiziario Tecnico di Aeronautica, Anno 6, No. 10 (Ott. 1930), Roma, pp. 20-22, ill.
- MORIYA, T.** On the aerodynamical interference of propeller blades.
Journal, Tôkyô Imperial University, Faculty of Engineering, Vol. 18, No. 7 (Jan. 1930), Tôkyô, pp. 195-212, illus.
- MOROCCO.** *See* Naulin: Le 37e régiment d'aviation et l'aviation du Maroc.

- MOSQUITOES. *See* Kneen, Orville H.: The war in the air—On Mosquitoes.
- Moss, H. *See* King, R. O., and H. Moss: Detonation and lubricating oil.
- Moss, S. A. Geared centrifugal superchargers for airplane engines.
Journ. Soc. Automotive Engineers, Vol. 27, No. 2 (Aug. 1930), New York, pp. 148-153, 160, ill.
- Superchargers for engines.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 122-124, ill.
- MOSSMAN, RALPH W., and RUSSELL G. ROBINSON. Bending tests of metal monocoque fuselage construction.
National Advisory Committee for Aeronautics, Technical Notes No. 357, Nov. 29, 1930, Washington, November 1930, p. 38, ill., diagr., logs.
- MOTH. The development of the D. H. Moth.
Aeroplane, Vol. 38, No. 14 (April 2, 1930), London, pp. 565-597, ill.
- See Duston, F. C.: Building the framework of the Moth plane.
- See Grey, Charles Grey: on floodlighting British industry.
- MOTTONI, G. DE. *See* Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen ergebnisse der polar expedition der "Italia."
- MOUNIER, P. J. J. De drukste luchtlijn ter wereld.
Het Vliegveld, 14de Jaarg., No. 12 (Dec. 1930), Amsterdam, pp. 397-400, ill.
- Hoe Amerika luchtlijken exploiteert. Fokker en de Western Air Express.
Het Vliegveld, 13de Jaarg., No. 7 (Juli 1929), Amsterdam, pp. 252-254, ill.
- De Lehigh luchthaven-prijsvraag.
Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, pp. 58-60, ill.
- Luchtlijken met bestuurbare ballons. Revolutionaire constructies.
Het Vliegveld, 13de Jaarg., No. 4 (April 1929), Amsterdam, pp. 134-136, ill.
- De nieuwe luchtreuzen der Western Air Express.
Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, pp. 222-226, ill.
- MUFFLERS. *See* Wilkinson: The Wilkinson air muffler.
- MUELLER, H., and H. PETERS. Coefficients of flow of standard nozzles.
National Advisory Committee for Aeronautics, Technical Memorandums No. 549, Jan. 23, 1930, Washington, January 1930, pp. 5, ill., diagr.
- MUGELLI, H. D. *See* Jaquerod, A., L. Defossez, and H. Mügeli: Experimental research on the friction of pivots.
- MUIR, N. S. *See* Carter, B. C., and N. S. Muir: Torsional vibration of crankshafts; Beardmore "Tornado" airship engine investigations.
- MULLER, J. P. Exchange clubs aid aviation.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 80-81, 230, ill.
- MULLER, J. WOLTERBEEK. De juridische sectie.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, p. 281, port.
- MUNETOMO, YUGIO. *See* Obata, Jūichi, and Yugio Munetomo: On the possibility of applying the cathode-ray oscillograph to the indicator for high-speed engines.
- MUNK, MAX MICHAEL. Development of the "M" wing sections.
Aviation, Vol. 28, No. 1 (Jan. 4, 1930), New York, pp. 12-16, diagrs.
- Dr. Munk joins Aero Digest.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, p. 106, port.
- The principles of aerodynamics. Article 1. The creation of air forces.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 69, 204, 206, 208.

- MUNK, MAX MICHAEL. The principles of aerodynamics. Article 2. Aerodynamic language.
 Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 50, 150, 152, 154.
- The principles of aerodynamics. Article 3. Pressure.
 Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, pp. 40, 184.
- The principles of aerodynamics. Article 4. The square law.
 Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 57, 146.
- The principles of aerodynamics. Article 5. Friction.
 Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 60, 154.
- The resolution of wing air flow.
 Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 50, 142, illus.
- The vertical descent.
 Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 73, 182.
- MUNRO, WILLIAM. Floats for racing craft.
 The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, pp. (1192b-1192d), 74-76, illus., diagr.
- MUREAUX. Les Mureaux "130.A2" observation airplane (French). A high-wing two-seat monoplane.
 National Advisory Committee for Aeronautics, Aircraft Circulars No. 111, Mar. 7, 1930, Washington, 1930, pp. 7, ill.
- MURPHY, CHARLES J. V. Parachute.
 New York, London, G. P. Putnam's Sons., 1930, pp. viii, 275, illus.
- MURRAY, R. STUART. Club interest might aid. An airport plan proposed.
 Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1565-1568, ill.
- Our nearby foreign aircraft market.
 Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 824-826.
- MURRAY, STELLA WOLFE. See Heath, Sophie Mary (Peirce-Evans), and Stella Wolfe Murray: Woman and flying.
- MUSEO STORICO DELLA R. AERONAUTICA. See Morelli, Ercole: Il Museo Storico della R. Aeronautica.
- MUTCHLER, W. H., and R. W. BUZZARD. Methods for the identification of aircraft tubing of plain carbon steel and chromium-molybdenum steel.
 National Advisory Committee for Aeronautics, Technical Notes No. 350, Oct. 10, 1930, Washington, October 1930, pp. 27, illus., tabs.
- MUZII, VITTORIO. Cenni di meccanica, aerologia e topografia. Corso allievi piloti, anno 1930 (Compagnia nazionale Aeronautica; aeroporto del Littorio, Roma).
 Roma, tip. A. Sampaolesi (lit.), [1930], pp. 83.
- MYERS, GEORGE. Training master pilots. Boeing School, Oakland, Calif., emphasizes sound educational methods.
 Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 798-800, ill.

N

- NACELLE. See D., Ch.: Notes sur la disposition générale des cabines.
- NÄGELE, KARL FR. Prufstand mit Einzyylinder-Versuchsmotor der Deutschen Versuchsanstalt für Luftfahrt, Berlin-Adlershof.
 Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 40 (4. Okt. 1930), Berlin, pp. 1387-1389, illis.
- NASZOGÉN-HÖHENATMER. Der Naszogen-Höhenatmer. Ein neuartiges Atmungsgerät für den Höhenflug.
 Die Luftwacht, Heft 4, April 1930, Berlin, pp. 186-187, ill.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Aeronautics. Fifteenth annual report of the National Advisory Committee for Aeronautics, 1929. Washington, United States Government Printing Office, 1930, pp. 779, illus., diagrs., tabls.

- Technical Reports. No. 309. Joint Report on Standardization Tests on N. P. L. R. A. F. 15 Airfoil Model, by Walter S. Diehl, pp. 91-110. No. 310. Pressure Element of Constant Logarithmic Stiffness for Temperature Compensated Altimeter, by W. G. Brombacher and F. Cordero, pp. 111-123. No. 311. Aerodynamic Theory and Test of Strut Forms, by R. H. Smith, pp. 125-148. No. 312. The Prediction of Airfoil Characteristics, by George J. Higgins, pp. 149-161. No. 313. Drag and Cooling with Various Forms of Cowling for a "Whirlwind" Radial Air-Cooled Engine-I, by Fred E. Weick, pp. 163-188. No. 314. Drag and Cooling with Various Forms of Cowling for a "Whirlwind" Radial Air-Cooled Engine-II, by Fred E. Weick, pp. 189-210. No. 315. Aerodynamic Characteristics of Airfoils-VI, by National Advisory Committee for Aeronautics, pp. 211-246. No. 316. Tables for Pressure of Air on Coming to Rest from Various Speeds, by A. F. Zahm and F. A. Louden, pp. 247-254. No. 317. Wind tunnel Tests on a series of Wing Models Through a Large Angle of Attack Range, Part I—Force Tests, by Montgomery Knight and Carl J. Wenzinger, pp. 255-303. No. 318. Speed and Deceleration Trials of U. S. S. Los Angeles, by S. J. De France and C. P. Burgess, pp. 305-324. No. 319. Aerodynamic Characteristics of Twenty-four Airfoils at High Speeds, by L. J. Briggs and H. L. Dryden, pp. 325-356. No. 320. The Measurement of Fluctuations of Air Speed by the Hot-Wire Anemometer, by H. L. Dryden and A. M. Kuethe, pp. 357-382. No. 321. Fuel Vapor Pressures and the Relation of Vapor Pressure to the Preparation of Fuel for Combustion in Fuel Injection Engines, by Wm. F. Joachim and A. M. Rothrock, pp. 383-395. No. 322. Investigation of Air Flow in Open-Throat Wind Tunnels, by Eastman N. Jacobs, pp. 397-407. No. 323. Flow and Force Equations for a Body Revolving in a Fluid by A. F. Zahm, pp. 409-447. No. 324. Flight tests on U. S. S. Los Angeles, Part I—Full Scale Pressure Distribution Investigation, by S. J. De France, pp. 449-481. No. 325. Flight Tests on U. S. S. Los Angeles, Part II—Stress and Strength Determination, by C. P. Burgess, pp. 483-498. No. 326. Tests of Five Metal Model Propellers with Various Pitch Distributions in a Free Wind Stream and in Combination with a Model VE-7 Fuselage, by E. P. Lesley and Elliott G. Reid, pp. 499-516. No. 327. The Effect of Supercharger Capacity on Engine and Airplane Performance, by O. W. Schey and W. D. Gove, pp. 517-536. No. 328. Water Pressure Distribution on a Twin-Float Seaplane, by F. L. Thompson, pp. 537-554. No. 329. The Torsional Strength of Wings, by C. P. Burgess, pp. 555-568. No. 330. Experimental and Analytical Determination of the Motion of Hydraulically Operated Valve Stems in Oil Engine Injection Systems, by A. G. Gelalles and A. M. Rothrock, pp. 569-588. No. 331. Collection of Wind-Tunnel Data on Commonly used Wing Sections, by F. A. Louden, pp. 589-633. No. 332. The Effect of Cowling on Cylinder Temperatures and Performance of a Wright J-5 Engine, by Oscar W. Schey and Arnold E. Biermann, pp. 635-656. No. 333. Full-Scale Turning Characteristics of the U. S. S. Los Angeles, by F. L. Thompson, pp. 657-670. No. 334. The Torsion of Members Having Sections Common in Aircraft Construction, by George W. Trayer and H. W. March, pp. 671-719. No. 335. Aerodynamic Theory and Test of Strut Forms-II, by R. H. Smith, pp. 721-759. No. 336. Tests of Large Airfoils in the Propeller Research Tunnel, Including Two with Corrugated Surfaces, by Donald H. Wood, pp. 761-779.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Aeronautics. Sixteenth annual report of the National Advisory Committee for Aeronautics 1930. Administrative report without technical reports.

Washington, United States Government Printing Office, 1930, pp. 66, ills.

- Bibliography of aeronautics 1928, by Paul Brockett.
Washington, United States Government Printing Office, 1930, pp. vi, 214.
- Aircraft Circulars No. 107. The Weymann-Lepère W. E. L. 10 observation airplane (French). A high-wing monoplane.
National Advisory Committee for Aeronautics, Jan. 17, 1930 (mimeographed), Washington, January 1930, pp. 11, ills.
- Aircraft Circulars No. 108. The Comper C(LA)7 "Swift" airplane (English). A high-wing single-seat monoplane.
National Advisory Committee for Aeronautics, Feb. 14, 1930 (mimeographed), Washington, February 1930, pp. 6, ills.
- Aircraft Circulars No. 109. The Dornier "Do. X" flying boat (German). A giant high-wing monoplane.
National Advisory Committee for Aeronautics, Feb. 21, 1930 (mimeographed), Washington, February 1930, pp. 14, ills., diagrs.
- Aircraft Circulars No. 110. The Lioré-Olivier "Le O.240" commercial seaplane (French). A high-wing cantilever monoplane.
National Advisory Committee for Aeronautics, Feb. 28, 1930 (mimeographed), Washington, February 1930 pp. 11, ills..
- Aircraft Circulars No. 111. Les Mureaux "130.A2" observation airplane (French). A high-wing two-seat monoplane.
National Advisory Committee for Aeronautics, Mar. 7, 1930 (mimeographed), Washington, March, 1930, pp. 7, ills.
- Aircraft Circulars No. 112. The "Latécoère 28" commercial airplane (French). A ten-passenger high-wing monoplane.
National Advisory Committee for Aeronautics, Mar. 22, 1930 (mimeographed), Washington, March 1930, pp. 10, ills.
- Aircraft Circulars No. 113. The Dyle and Bacalan "DB 70" commercial airplane (French). An all-metal high-wing monoplane.
National Advisory Committee for Aeronautics, Mar. 31, 1930 (mimeographed), Washington, March 1930, pp. 6, ill.
- Aircraft Circulars No. 114. The "Potez 39" observation airplane (French). An all-metal high-wing two-seat monoplane.
National Advisory Committee for Aeronautics, April 18, 1930 (mimeographed), Washington, April 1930, pp. 7, ills.
- Aircraft Circulars No. 115. The Farman "F.300" commercial airplane (French). A high-wing semicantilever monoplane.
National Advisory Committee for Aeronautics, April 30, 1930 (mimeographed), Washington, April 1930, pp. 6, ills.
- Aircraft Circulars No. 116. The Junkers "G 38" commercial airplane (German). A giant high-wing monoplane.
National Advisory Committee for Aeronautics, May 19, 1930 (mimeographed), Washington, May 1930, pp. 15, ills.
- Aircraft Circulars No. 117. The De Havilland "Moth three" airplane (British). A high-wing commercial monoplane.
National Advisory Committee for Aeronautics, May 23, 1930 (mimeographed), Washington, May 1930, pp. 10, ills.
- Aircraft Circulars No. 118. The "Junkers Junior" light airplane (German). A two-seat all-metal low-wing cantilever monoplane.
National Advisory Committee for Aeronautics, June 6, 1930 (mimeographed), Washington, June 1930, pp. 8, ills.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Aircraft Circulars No. 119. The "Avro trainer" airplane (British). A training biplane.
 National Advisory Committee for Aeronautics, June 13, 1930 (mimeographed), Washington, June 1930, pp. 10, ill.
- Aircraft Circulars No. 120. The Cierva "Autogiro" Mark III (British). Armstrong-Siddeley "Genet Major" engine.
 National Advisory Committee for Aeronautics, June 20, 1930 (mimeographed), Washington, June 1930, pp. 6, ill.
- Aircraft Circulars No. 121. The Caproni "90 P. B." military airplane (Italian). A giant biplane of 6,000 horsepower.
 National Advisory Committee for Aeronautics, July 25, 1930 (mimeographed), Washington, July 1930, pp. 7, ill.
- Aircraft Circulars No. 122. The "Comte A. C. 3" military airplane (Swiss). A high-wing semicantilever monoplane.
 National Advisory Committee for Aeronautics, July 31, 1930 (mimeographed), Washington, July 1930, pp. 7, ill.
- Aircraft Circulars No. 123. The Dyle and Bacalan "D. B. 80" day mail airplane (French). An all-metal high-wing monoplane.
 National Advisory Committee for Aeronautics, Aug. 8, 1930 (mimeographed), Washington, August 1930, pp. 5, ill.
- Aircraft Circulars No. 124. The Wibault 220 R. N. 3 airplane (French). A three-place observation high-wing monoplane.
 National Advisory Committee for Aeronautics, Aug. 15, 1930 (mimeographed), Washington, August 1930, pp. 4, ill.
- Aircraft Circulars No. 125. The Short "Valetta" commercial seaplane (British). A high-wing all-metal twin-float monoplane.
 National Advisory Committee for Aeronautics, Aug. 30, 1930 (mimeographed), Washington, August 1930, pp. 7, ill.
- Aircraft Circulars No. 126. The Henderson "Hendy" 302 cabin airplane (British). A two-seat low-wing cantilever monoplane.
 National Advisory Committee for Aeronautics, Sept. 19, 1930 (mimeographed), Washington, September 1930, pp. 4, ill.
- Aircraft Circulars No. 127. The Breguet 270 general-purpose military airplane (French). A two-seat all-steel sesquiplane, by R. J. DeMarolles.
 National Advisory Committee for Aeronautics, Sept. 26, 1930 (mimeographed), Washington, September 1930, pp. 15, ill.
 From Aircraft Engineering, September 1930.
- Aircraft Circulars No. 128. Westland "Wessex" commercial airplane (British). A high-wing semicantilever monoplane.
 National Advisory Committee for Aeronautics, Oct. 31, 1930 (mimeographed), Washington, October 1930, pp. 8, ill.
- Aircraft Circulars No. 129. Vickers "Viastra I" commercial airplane (British). A high-wing all-metal semicantilever monoplane.
 National Advisory Committee for Aeronautics, Nov. 11, 1930 (mimeographed), Washington, November 1930, pp. 7, ill.
- Aircraft Circulars No. 130. The Fiat "T. R. 1" training and touring airplane (Italian). A two-place high-wing monoplane.
 National Advisory Committee for Aeronautics, Dec. 24, 1930 (mimeographed), Washington, December 1930, pp. 11, ill., diagrs.
- Aircraft Circulars No. 131. The Handley Page type 42 commercial airplane (British). A metal sesquiplane.
 National Advisory Committee for Aeronautics, Dec. 31, 1930 (mimeographed), Washington, December 1930, pp. 8, ill.
- New N. A. C. A. equipment at Langley Field, Va.
 Airway Age, Vol. 11, No. 6, (June 1930), New York, p. 780.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Report No. 330. Experimental and analytical determination of the motion of hydraulically operated valve stems in oil engine injection systems, by A. G. Gelalles and A. M. Rothrock.

National Advisory Committee for Aeronautics, Jan. 18, 1930, Washington, U. S. Government Printing Office, 1929, pp. 20, ills., diagrs.

— Report No. 331. Collection of wind-tunnel data on commonly used wing sections, by F. A. Louden.

National Advisory Committee for Aeronautics, Jan. 8, 1930, Washington, U. S. Government Printing Office, 1929, pp. 45, diagrs., tabls.

— Report No. 332. The effect of cowling on cylinder temperatures and performance of a Wright J-5 engine, by Oscar W. Schey and Arnold E. Biermann.

National Advisory Committee for Aeronautics, Jan. 25, 1930, Washington, U. S. Government Printing Office, 1929, pp. 22, ills., diagrs., tabls.

— Report No. 333. Full-scale turning characteristics of the U. S. S. Los Angeles, by F. L. Thompson.

National Advisory Committee for Aeronautics, Jan. 29, 1930, Washington, U. S. Government Printing Office, 1929, pp. 14, ills., diagrs., tabl.

— Report No. 334. The torsion of members having sections common in aircraft construction, by George W. Trayer and H. W. March.

National Advisory Committee for Aeronautics, Mar. 12, 1930, Washington, U. S. Government Printing Office, 1930, pp. 49, ills., diagrs., tabls.

— Report No. 335. Aerodynamic theory and test of strut forms—II, by R. H. Smith.

National Advisory Committee for Aeronautics, Feb. 5, 1930, Washington, U. S. Government Printing Office, 1929, pp. 41, ills., diagrs., tabls.

— Report No. 336. Tests of large airfoils in the propeller research tunnel, including two with corrugated surfaces, by Donald H. Wood.

National Advisory Committee for Aeronautics, Jan. 1, 1930, Washington, U. S. Government Printing Office 1929, pp. 19, ills., diagrs. tabls.

— Report No. 337. The gaseous explosive reaction at constant pressure—the reaction order and reaction rate, by F. W. Stevens.

National Advisory Committee for Aeronautics, Feb. 12, 1930, Washington, U. S. Government Printing Office, 1929, pp. 16, diagrs., tabls.

— Report No. 338. The effect of reduction gearing on propeller-body interference as shown by full scale wind tunnel tests, by Fred E. Weick.

National Advisory Committee for Aeronautics, Mar. 18, 1930, Washington, U. S. Government Printing Office, 1930, pp. 21, ills., diagrs., tabls.

— Report No. 339. Full scale wind tunnel tests with a series of propellers of different diameters on a single fuselage, by Fred E. Weick.

National Advisory Committee for Aeronautics, Mar. 26, 1930, Washington, U. S. Government Printing Office, 1930, pp. 16, ills., diagrs., tabls.

— Report No. 340. Full scale wind tunnel tests on several metal propellers having different blade forms, by Fred E. Weick.

National Advisory Committee for Aeronautics, Feb. 19, 1930, Washington, U. S. Government Printing Office 1930, pp. 13, ills., diagrs., tabls.

— Report No. 341. The design and development of an automatic injection valve with an annular orifice of varying area, by William F. Joachim, Chester W. Hicks, and Hampton H. Foster.

National Advisory Committee for Aeronautics, Mar. 31, 1930, Washington, U. S. Government Printing Office, 1930, pp. 10, ills., diagrs.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Report No. 342. Effect of turbulence in wind tunnel measurements, by H. L. Dryden and A. M. Kuethe.

National Advisory Committee for Aeronautics, April 24, 1930, Washington, U. S. Government Printing Office, 1930, pp. 28, diagrs., tabls.

— Report No. 343. Effect of variation of chord and span of ailerons on rolling and yawing moments at several angles of pitch, by R. H. Heald, D. H. Strother, and B. H. Monish.

National Advisory Committee for Aeronautics, Mar. 15, 1930, Washington, U. S. Government Printing Office, 1930, pp. 29, ill., diagrs., tabls.

— Report No. 344. The design of plywood webs for airplane wing beams, by George W. Trayer.

National Advisory Committee for Aeronautics, April 30, 1930, Washington, U. S. Government Printing Office, 1930, pp. 17, iil., tabls.

— Report No. 345. The design of airplane wing ribs, by J. A. Newlin and Geo. W. Trayer.

National Advisory Committee for Aeronautics, June 11, 1930, Washington, U. S. Government Printing Office, 1930, pp. 54, ill., diagrs., tabls.

— Report No. 346. Water pressure distribution on a flying boat hull, by F. L. Thompson.

National Advisory Committee for Aeronautics, July 31, 1930, Washington, U. S. Government Printing Office, 1930, pp. 18, ill., diagrs., tabls.

— Report No. 347. A method of calculating the ultimate strength of continuous beams, by J. A. Newlin and Geo. W. Trayer.

National Advisory Committee for Aeronautics, June 30, 1930, Washington, U. S. Government Printing Office, 1930, pp. 28, ill., diagrs., tabls.

— Report No. 348. Strength of welded joints in tubular members for aircraft, by H. L. Whittemore and W. C. Brueggeman.

National Advisory Committee for Aeronautics, Aug. 11, 1930, Washington, U. S. Government Printing Office, 1930, pp. 41, ill., diagrs., tabls.

— Report No. 349. A proof of the theorem regarding the distribution of lift over the span for minimum induced drag, by W. F. Durand.

National Advisory Committee for Aeronautics, Aug. 18, 1930, Washington, U. S. Government Printing Office, 1930, pp. 15, ill.

— Report No. 350. Working charts for the selection of aluminum alloy propellers of a standard form to operate with various aircraft engines and bodies, by Fred E. Weick.

National Advisory Committee for Aeronautics, July 26, 1930, Washington, U. S. Government Printing Office, 1930, pp. 16, ill., diagrs.

— Report No. 351. Full scale wind tunnel tests of a propeller with the diameter changed by cutting off the blade tips, by Donald H. Wood.

National Advisory Committee for Aeronautics, Oct. 24, 1930, Washington, U. S. Government Printing Office, 1930, pp. 25, ill., diagrs., tabls.

— Report No. 352. Large-scale aerodynamic characteristics of airfoils as tested in the variable density wind tunnel, by Eastman N. Jacobs and Raymond F. Anderson.

National Advisory Committee for Aeronautics, Sept. 22, 1930, Washington, U. S. Government Printing Office, 1930, pp. 32, diagrs., tabl.

— Report No. 353. Airfoil pressure distribution investigation in the variable density wind tunnel, by Eastman N. Jacobs, John Stack, and Robert M. Pinkerton.

National Advisory Committee for Aeronautics, Sept. 16, 1930, Washington, U. S. Government Printing Office, 1930, pp. 16, ill., diagrs.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Report No. 354. Aircraft woods: Their properties, selection, and characteristics, by L. J. Markwardt. National Advisory Committee for Aeronautics, Oct. 15, 1930, Washington, U. S. Government Printing Office, 1930, pp. 34, diagrs., tabs.
- Report No. 355. Comparative flight performance with an N. A. C. A. Roots supercharger and a turbocentrifugal supercharger, by Oscar W. Schey, and Alfred W. Young. National Advisory Committee for Aeronautics, Oct. 8, 1930, Washington, U. S. Government Printing Office, 1930, pp. 14, illus., diagrs., tabs.
- Report No. 356. Strength of rectangular flat plates under edge compression, by Louis Schuman and Goldie Back. National Advisory Committee for Aeronautics, Jan. 19, 1930, Washington, U. S. Government Printing Office 1930, pp. 24, illus., diagrs., tabs.
- Report No. 357. Aircraft accidents. Method of analysis. Report prepared by Committee on Aircraft Accidents. National Advisory Committee for Aeronautics, Aug. 29, 1930, Washington, U. S. Government Printing Office 1930, pp. 17, illus.
- Report No. 358. Temperature coefficient of the modulus of rigidity of aircraft instrument diaphragm and spring materials, by W. G. Brombacher and E. R. Melton. National Advisory Committee for Aeronautics, Sept. 29, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, illus., diagrs.
- Report No. 359. An investigation of the effectiveness of ignition sparks, by Melville F. Peters, Wayne L. Summerville and Merlin Davis. National Advisory Committee for Aeronautics, Nov. 17, 1930, Washington, U. S. Government Printing Office 1930, pp. 13, illus., diagrs., tabs.
- Report No. 360. Pressure distribution over a symmetrical airfoil section with trailing edge flap, by Eastman N. Jacobs and Robert M. Pinkerton. National Advisory Committee for Aeronautics, Oct. 31, 1930, Washington, U. S. Government Printing Office 1930, pp. 19, illus. diagrs.
- Report No. 361. Experimental determination of jet boundary corrections for airfoil tests in four open wind tunnel jets of different shapes, by Montgomery Knight and Thomas A. Harris. National Advisory Committee for Aeronautics, Nov. 24, 1930, Washington, U. S. Government Printing Office 1930, pp. 27, illus., diagrs., tabs.
- Report No. 362. An extended theory of thin airfoils and its application to the biplane problem, by Clark B. Millikan. National Advisory Committee for Aeronautics, Feb. 9, 1931, Washington, U. S. Government Printing Office 1930, pp. 33, illus., diagrs.
- Report No. 363. Pressure fluctuations in a common-rail fuel injection system, by A. M. Rothrock. National Advisory Committee for Aeronautics, Nov. 7, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, illus., diagrs.
- Technical Memorandums No. 546. Structural details of the giant Dornier seaplane "Do. X," by Corrado Gustosa. National Advisory Committee for Aeronautics, Jan. 2, 1930 (mimeographed), Washington, January 1930, pp. 25, illus.
From Rivista Aeronautica, October 1929.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Memorandums Nos. 547, 548. Contribution to the study of normal burning in gaseous carbureted mixtures, by M. R. Duchéne. Parts I and II.
 National Advisory Committee for Aeronautics, Jan. 9 and 16, 1930 (mimeographed), Washington, January 1930, pp. 18 and 35, ill., diagrs.
 From Service Technique et Industriel de l'Aéronautique, Bulletin Technique, No. 54, December 1928.
- Technical Memorandums No. 549. Coefficients of flow of standard nozzles, by H. Mueller and H. Peters.
 National Advisory Committee for Aeronautics, Jan. 23, 1930 (mimeographed), Washington, January 1930, pp. 6, ill., diagr.
 From Zeitschrift des Vereins deutscher Ingenieure, No. 27, 1929.
- Technical Memorandums No. 550. Combating airplane fires, by Henri Brunat.
 National Advisory Committee for Aeronautics, Jan. 30, 1930 (mimeographed), Washington, January 1930, pp. 18, ill.
 From booklet published by the Comité Français de Propagande Aéronautique, Paris.
- Technical Memorandums No. 551. Relation between the stability characteristics and the controllability of German airplanes, by Walter Hübner.
 National Advisory Committee for Aeronautics, Feb. 6, 1930 (mimeographed), Washington, February 1930, pp. 23, ill., diagrs.
 From Zeitschrift für Flugtechnik und Motorluftschiffahrt, October 28, 1929.
- Technical Memorandums No. 552. The relation between the tensile strength and the hardness of metals, by O. Schwarz.
 National Advisory Committee for Aeronautics, Feb. 13, 1930 (mimeographed), Washington, February 1930, pp. 15, diagrs.
 From Zeitschrift des Vereins deutscher Ingenieure, June 8, 1929.
- Technical Memorandums Nos. 553, 554. Experimental investigations concerning the limits of detonation in gaseous mixtures, by Rudolf Wendlandt. Parts I and II.
 National Advisory Committee for Aeronautics, Feb. 20 and 28, 1930 (mimeographed), Washington, February 1930, pp. 25, 47 ill., diagrs., tabs.
 From Zeitschrift für Physikalische Chemie 110, 637, (1924). 116, 227, (1925).
- Technical Memorandums No. 555. The boundary layer as a means of controlling the flow of liquids and gases, by Oskar Schrenk.
 National Advisory Committee for Aeronautics, March 6, 1930 (mimeographed), Washington, March 1930, pp. 22, ill., diagrs.
 From Die Naturwissenschaften, Vol. 17, No. 34, August 23, 1929.
- Technical Memorandums No. 556. The electrodynamometric balance of the small wind tunnel of the French service of aeronautical research, by P. Rebuffet.
 National Advisory Committee for Aeronautics, March 17, 1930 (mimeographed), Washington, March 1930, pp. 10, ill.
 Lecture delivered before the "Société de Navigation Aérienne," June 5, 1929.
- Technical Memorandums Nos. 557, 558. Measurement of profile drag on an airplane in flight by the momentum method, by Martin Schrenk. Parts I and II.
 National Advisory Committee for Aeronautics, March 27, 31, 1930 (mimeographed), Washington, March 1930, pp. 47, 31, ill., diagrs., tabs.
 Luftfahrtforschung, May 18, 1928.
- Technical Memorandums No. 559. Ratier metal propeller with pitch variable in flight, by Pierre Léglise.
 National Advisory Committee for Aeronautics, April 3, 1930 (mimeographed), Washington, April 1930, pp. 9, ill.
 From l'Aéronautique, December 1929.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Memorandums No. 560. The 1929 Rhön soaring-flight contest, by Alexander Lippisch.
 National Advisory Committee for Aeronautics, April 10, 1930 (mimeographed), Washington, April 1930, pp. 20, illus., diagrs., tabs.
 From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, February 28, 1930.
- Technical Memorandums No. 561. Improving the performance of multi-engined airplanes by means of idling propellers—The “free-wheel” propeller, by M. Pillard.
 National Advisory Committee for Aeronautics, April 17, 1930 (mimeographed), Washington, April 1930, pp. 18, illus., diagrs.
 From pamphlet issued by Ferren and Company, 1929.
- Technical Memorandums No. 562. Experimental investigation of aircraft propellers exposed to oblique air currents, by O. Flachsbart and G. Kröber.
 National Advisory Committee for Aeronautics, April 24, 1930 (mimeographed), Washington, April 1930, pp. 18, illus., diagrs.
 From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, December 14, 1929.
- Technical Memorandums No. 563. Balanced and servo control surfaces.
 National Advisory Committee for Aeronautics, May 1, 1930 (mimeographed), Washington, May 1930, pp. 15, illus., diagrs.
 From *The Aeroplane*, February 23, 1930.
- Technical Memorandums No. 564. Recent tests of tailless airplanes, by Alexander Lippisch.
 National Advisory Committee for Aeronautics, May 8, 1930 (mimeographed), Washington, May 1930, pp. 10, illus., diagr.
 From *L'Aérophile*, February 1-15, 1930.
- Technical Memorandums No. 565. Development of the Junkers-Diesel aircraft engine, by Dr. Gasterstädt.
 National Advisory Committee for Aeronautics, May 15, 1930 (mimeographed), Washington, May 1930, pp. 20, illus. diagrs.
 From *Automobiltechnische Zeitschrift*, January 10 and 20, 1930.
- Technical Memorandums No. 566. Experimental research on the friction of pivots, by A. Jaquierod, L. Defossez, and H. Mügeli.
 National Advisory Committee for Aeronautics, May 22, 1930 (mimeographed), Washington, May 1930, pp. 54, illus., diagrs.
 From *Journal Suisse d'Horlogerie et de Bijouterie*, Nos. 11 & 12, 1922, and Nos. 1, 2, 3, 1923.
- Technical Memorandums No. 567. The Magnus effect in theory and in reality, by F. Ahlborn.
 National Advisory Committee for Aeronautics, May 26, 1930 (mimeographed), Washington, May 1930, pp. 40, illus.
 From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, December 28, 1929.
- Technical Memorandums No. 568. Contribution to the theory of propeller vibrations, by F. Liebers.
 National Advisory Committee for Aeronautics, June 5, 1930 (mimeographed), Washington, June 1930, pp. 23, diagrs.
 From *Zeitschrift für technische Physik*, Vol. X, 1929.
- Technical Memorandums No. 569. A possible method for preventing the autorotation of airplane wings, by Oskar Schrenk.
 National Advisory Committee for Aeronautics, June 12, 1930 (mimeographed), Washington, June 1930, pp. 6, illus., diagrs.
 From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, November 14, 1929.
- Technical Memorandums No. 570. “Gloster” metal construction.
 National Advisory Committee for Aeronautics, June 19, 1930 (mimeographed), Washington, June, 1930, pp. 9, illus.
 From *Flight* April 18, 1930.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Memorandums No. 571. Propulsion by reaction, by Maurice Roy.
National Advisory Committee for Aeronautics, June 23, 1930 (mimeographed), Washington, June 1930, pp. 19, illus., diagrs.
From *La Technique Aéronautique*, January 15, 1930.
- Technical Memorandums No. 572. Impact tests on rubber compression springs for airplane landing gears, by K. Hohenemser.
National Advisory Committee for Aeronautics, July 3, 1930 (mimeographed), Washington, July 1930, pp. 14, illus., diagrs.
From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, March 28, 1930.
- Technical Memorandums No. 573. Air forces and air-force moments at large angles of attack and how they are affected by the shape of the wing, by Richard Fuchs and Wilhelm Schmidt.
National Advisory Committee for Aeronautics, July 10, 1930 (mimeographed), Washington, July 1930, pp. 20, illus., diagrs.
From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, January 14, 1930.
- Technical Memorandums No. 574. Calculations of pressure distribution on airship hulls, by Theodor von Karman.
National Advisory Committee for Aeronautics, July 17, 1930 (mimeographed), Washington, July 1930, pp. 27, diagrs.
From *Abhandlungen aus dem Aerodynamischen Institut an der Technischen Hochschule, Aachen*, 1927, No. 6.
- Technical Memorandums No. 575. Investigation of the variations in the velocity of the air flow about a wing profile, by Walter Repentin.
National Advisory Committee for Aeronautics, July 24, 1930 (mimeographed), Washington, July 1930, pp. 18, illus.
From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, July 15, 1929.
- Technical Memorandums No. 576. The vortex theory and its significance in aviation. Part I.—Vortex theory. Part II.—Wing theory, by A. Betz.
National Advisory Committee for Aeronautics, July 31, 1930 (mimeographed), Washington, July 1930, pp. 28, ill.
From *Unterrichtsblätter für Mathematik und Naturwissenschaften*, Vol. 34, 1928, No. 12.
- Technical Memorandums No. 577. Determination of the best cross section for a box beam subjected to bending stresses, by A. von Baranoff.
National Advisory Committee for Aeronautics, Aug. 7, 1930 (mimeographed), Washington, August 1930, pp. 9, ill., diagrs.
From 1927 Yearbook of the Deutsche Versuchsanstalt für Luftfahrt.
- Technical Memorandums No. 578. Calculation of tapered monoplane wings, by E. Amstutz.
National Advisory Committee for Aeronautics, Aug. 14, 1930 (mimeographed), Washington, August 1930, pp. 20, illus., diagrs.
From *Schweizerische Bauzeitung*, April 5, 1930.
- Technical Memorandums No. 579. Structural details of German light airplanes, by Martin Schrenk.
National Advisory Committee for Aeronautics, Aug. 22, 1930 (mimeographed), Washington, August 1930, pp. 25, illus., tabls.
From *Zeitschrift des Vereines Deutscher Ingenieure*, March 15, 1930.
- Technical Memorandums No. 580. Theory of the landing impact of seaplanes, by Wilhelm Pabst.
National Advisory Committee for Aeronautics, Aug. 28, 1930 (mimeographed), Washington, August 1930, pp. 36, illus., diagrs.
From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, May 14, 1930.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Memorandums No. 581. Load assumptions for calculating the strength of airplanes.
 National Advisory Committee for Aeronautics, Sept. 4, 1930 (mimeographed), Washington, September 1930, pp. 31, ill., diagrs.
 From D. V. L. building specifications for airplanes.
- Technical Memorandums No. 582. Effects of the end fixation of airplane struts, by Alfred Teichmann.
 National Advisory Committee for Aeronautics, Sept. 11, 1930 (mimeographed), Washington, September 1930, pp. 25, ill.
 From Zeitschrift für Flugtechnik und Motorluftschiffahrt, May 28, 1930.
- Technical Memorandums No. 583. Determination of the maximum control forces and attainable quickness in the operation of airplane controls, by Heinrich Hertel.
 National Advisory Committee for Aeronautics, Sept. 18, 1930 (mimeographed), Washington, September 1930, pp. 31, ill., diagrs., tabs.
 From Zeitschrift für Flugtechnik und Motorluftschiffahrt, January 28, 1930.
- Technical Memorandums No. 584. Flight tests for the determination of static longitudinal stability, by Hermann Blenk.
 National Advisory Committee for Aeronautics, Sept. 25, 1930 (mimeographed), Washington, September 1930, pp. 11, ill., diagrs.
 From 1930 Yearbook of the Deutschen Versuchsanstalt für Luftfahrt.
- Technical Memorandums No. 585. Velocity distribution in the boundary layer of a submerged plate, by M. Hansen.
 National Advisory Committee for Aeronautics, Oct. 2, 1930 (mimeographed), Washington, October 1930, pp. 18, ill., diagrs.
 From Abhandlungen aus dem Aerodynamischen Institut an der Technischen Hochschule, Aachen, No. 8, 1928.
- Technical Memorandums No. 586. Göttingen six-component scale measurements on a Junkers A 35 airplane model, by Hermann Blenk
 National Advisory Committee for Aeronautics, Oct. 9, 1930 (mimeographed), Washington, October 1930, pp. 8, ill., diagrs.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt.
- Technical Memorandums No. 587. Counterpropeller, by Ugo de Caria.
 National Advisory Committee for Aeronautics, Oct. 16, 1930 (mimeographed), Washington, October 1930, pp. 11, ill.
 From Aeronautica, June 1930.
- Technical Memorandums No. 588. The Behm acoustic sounder for airplanes with reference to its accuracy, by Ernest Schreiber.
 National Advisory Committee for Aeronautics, Oct. 23, 1930 (mimeographed), Washington, October 1930, pp. 18, ill., diagrs., tabs.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt.
- Technical Memorandums No. 589. Diesel-chamber investigations; ignition-chamber engines, by Kurt Neumann.
 National Advisory Committee for Aeronautics, Oct. 30, 1930 (mimeographed), Washington, October 1930, pp. 30, diagrs.
 From Dieselmashinen IV, 1929.
- Technical Memorandums No. 590. Riveted joints in thin plates, by W. Hilbes.
 National Advisory Committee for Aeronautics, Nov. 10, 1930 (mimeographed), Washington, November 1930, pp. 15, ill., diagrs.
 Jahrbuch 1929 der Wissenschaftlichen Gesellschaft für Luftfahrt.
- Technical Memorandums No. 591. Mathematical treatise on the recovery from a flat spin, by R. Fuchs.
 National Advisory Committee for Aeronautics, Nov. 13, 1930 (mimeographed), Washington, November 1930, pp. 16, diagrs.
 From Jahrbuch 1929 der Wissenschaftlichen Gesellschaft für Luftfahrt.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Memorandums No. 592. Metal covering of airplanes, by J. Mathar.
National Advisory Committee for Aeronautics, Nov. 20, 1930 (mimeographed), Washington, November 1930, pp. 15, illus., diagrs.
Jahrbuch 1929 der Wissenschaftlichen Gesellschaft für Luftfahrt.
- Technical Memorandums Nos. 593, 594. Practical tests with the "Auto control slot," by G. Lachmann. Part I: Lecture. Part II: Discussion.
National Advisory Committee for Aeronautics, Nov. 28, 1930 (mimeographed), Washington, November 1930, pp. 20, 30, illus., diagrs.
From *Zeitschrift für Flugtechnik und Motorluftschiffahrt*, August 28, 1930. Sept. 15, 1930.
- Technical Memorandums No. 595. English airplane construction, by D. Schwencke.
National Advisory Committee for Aeronautics, Dec. 4, 1930 (mimeographed), Washington, December 1930, pp. 11, illus.
From *Zeitschrift des Vereines deutscher Ingenieure*, August 2, 1930.
- Technical Memorandums Nos. 596, 597, 598, 599. Riveting in metal airplane construction, by Wilhelm Pleines. Parts I-IV.
National Advisory Committee for Aeronautics, Dec. 11, 18, 23, 31, 1930 (mimeographed), Washington, December 1930, pp. 42, 50, 28, 32, illus., tabls.
From *Luftfahrtforschung*, Vol. VII, No. 1, April 20, 1930.
- Technical Notes No. 330. Wind tunnel pressure distribution tests on a series of biplane wing models. Part III. Effects of changes in various combinations of stagger, gap, sweepback, and decalage, by Montgomery Knight and Richard W. Noyes.
National Advisory Committee for Aeronautics, Jan. 23, 1930 (mimeographed), Washington, December 1929, pp. 6, illus., diagrs.
- Technical Notes No. 331. Rate of heat transfer from finned metal surfaces. Progress report on investigations at Aeronautical Engineering Department, Massachusetts Institute of Technology, by C. Fayette Taylor and A. Rehbock.
National Advisory Committee for Aeronautics, Jan. 31, 1930 (mimeographed), Washington, January 1930, pp. 21, illus., diagrs.
- Technical Notes No. 332. Injection lags in a common-rail fuel injection system, by A. M. Rothrock.
National Advisory Committee for Aeronautics, Feb. 11, 1930 (mimeographed), Washington, February 1930, pp. 7, illus., diagrs.
- Technical Notes No. 333. Test of an adjustable pitch model propeller at four blade settings, by E. P. Lesley.
National Advisory Committee for Aeronautics, Feb. 18, 1930 (mimeographed), Washington, February 1930, pp. 15, illus., diagrs., tabls.
- Technical Notes No. 334. Comparative performance obtained with XF7C-1 airplane using several different engine cowlings, by Oscar W. Schey, Ernest Johnson, and Melvin N. Gough.
National Advisory Committee for Aeronautics, Feb. 28, 1930 (mimeographed), Washington, February 1930, pp. 17, illus., diagrs., tabls.
- Technical Notes No. 335. The structure and properties of parachute cloths, by H. J. McNicholas, and A. F. Hedrick.
National Advisory Committee for Aeronautics, Mar. 18, 1930 (mimeographed), Washington, March 1930, pp. 28, diagrs., tabls.
- Technical Notes No. 336. The effect of wing tip floating ailerons on the autorotation of a monoplane wing model, by Montgomery Knight and Carl J. Wenzinger.
National Advisory Committee for Aeronautics, Mar. 31, 1930 (mimeographed), Washington, March 1930, pp. 19, illus., diagrs., tabls.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Notes No. 337. Pressure distribution on the tail surfaces of a PW-9 pursuit airplane in flight, by Richard V. Rhode.
National Advisory Committee for Aeronautics, April 30, 1930 (mimeographed), Washington, April 1930, pp. 13, illus., diagrs., tabs.
- Technical Notes No. 338. Some effects of air and fuel oil temperatures on spray penetration and dispersion, by A. G. Gelalles.
National Advisory Committee for Aeronautics, May 14, 1930 (mimeographed), Washington, May 1930, pp. 11, illus., diagrs.
- Technical Notes No. 339. Refrigerated wind tunnel tests on surface coatings for preventing ice formation, by Montgomery Knight and William C. Clay.
National Advisory Committee for Aeronautics, May 24, 1930 (mimeographed), Washington, May 1930, pp. 21, ill.
- Technical Notes No. 340. Full scale drag tests on various parts of Fairchild (FC2W2) cabin monoplane, by William H. Herrnstein, jr.
National Advisory Committee for Aeronautics, May 29, 1930 (mimeographed), Washington, May 1930, pp. 14, illus., diagrs., tabs.
- Technical Notes No. 341. Calibration and lag of a Friez type cup anemometer, by Robert M. Pinkerton.
National Advisory Committee for Aeronautics, June 3, 1930 (mimeographed), Washington, June 1930, pp. 8, ill., diagrs., tabl.
- Technical Notes No. 342. Identification of aircraft tubing by Rockwell test, by Horace Knerr.
National Advisory Committee for Aeronautics, June 10, 1930 (mimeographed), Washington, June 1930, pp. 8, ill.
- Technical Notes No. 343. Strength in shear of thin curved sheets of Alclad, by George Michael Smith.
National Advisory Committee for Aeronautics, June 17, 1930 (mimeographed), Washington, June 1930, pp. 27, illus., diagrs., tabs.
- Technical Notes No. 344. Performance of a high-speed compression-ignition engine using multiple orifice fuel injection nozzles, by J. A. Spangler and H. H. Foster.
National Advisory Committee for Aeronautics, June 27, 1930 (mimeographed), Washington, June 1930, pp. 18, illus., diagrs.
- Technical Notes No. 345. The prevention of the ice hazard on airplanes, by William C. Geer and Merit Scott.
National Advisory Committee for Aeronautics, July 8, 1930 (mimeographed), Washington, July 1930, pp. 23, ill.
- Technical Notes No. 346. Span load distribution on two monoplane wing models as affected by twist and sweepback, by Montgomery Knight and Richard W. Noyes.
National Advisory Committee for Aeronautics, July 29, 1930 (mimeographed), Washington, July 1930, pp. 7, illis., diagrs., tabs.
- Technical Notes No. 347. The pressure distribution over a Douglas wing tip on a biplane in flight, by Richard V. Rhode and Eugene E. Lundquist.
National Advisory Committee for Aeronautics, Aug. 26, 1930 (mimeographed), Washington, August 1930, pp. 19, illus., diagrs., tabs.
- Technical Notes No. 348. Alterations and tests of the "Farnboro" engine indicator, by John H. Collins, jr.
National Advisory Committee for Aeronautics, Sept. 23, 1930 (mimeographed), Washington, September 1930, pp. 14, ill.

- NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. Technical Notes No. 349
An investigation of airplane landing speeds, by Kenneth F. Ridley.
National Advisory Committee for Aeronautics, Sept. 30, 1930 (mimeographed), Washington,
September 1930, pp. 39, illus., diagrs., tabs.
- Technical Notes No. 350. Methods for the identification of aircraft
tubing of plain carbon steel and chromium-molybdenum steel, by W. H.
Mutchler and R. W. Buzzard.
National Advisory Committee for Aeronautics, Oct. 10, 1930 (mimeographed), Washington,
October 1930, pp. 27, illus., tabs.
- Technical Notes No. 351. An accurate method of measuring the moments
of inertia of airplanes, by M. P. Miller.
National Advisory Committee for Aeronautics, Oct. 17, 1930 (mimeographed), Washington,
October 1930, pp. 20, illus.
- Technical Notes No. 352. Effect of orifice length-diameter ratio on spray
characteristics.
National Advisory Committee for Aeronautics, Oct. 21, 1930 (mimeographed), Washington,
October 1930, pp. 14, illus., diagrs.
- Technical Notes No. 353. Analytical determination of the load on a
trailing edge flap, by Robert M. Pinkerton.
National Advisory Committee for Aeronautics, Oct. 28, 1930 (mimeographed), Washington,
October 1930, pp. 7, diagrs.
- Technical Notes No. 354. An investigation of the phenomenon of separation
in the air flow around simple quadric cylinders, by John F. Parsons and
Jarvis A. Wallen.
National Advisory Committee for Aeronautics, Nov. 8, 1930 (mimeographed), Washington,
November 1930, pp. 26, illus., diagrs., tabs.
- Technical Notes No. 355. Effect of the angular position of the section of a
ring cowling on the high speed of an XF7C-1 airplane, by Melvin N. Gough.
National Advisory Committee for Aeronautics, Nov. 11, 1930 (mimeographed), Washington,
November 1930, pp. 15, illus., diagrs., tabs.
- Technical Notes No. 356. Some characteristics of fuel sprays from open
nozzles, by A. M. Rothrock and D. W. Lee.
National Advisory Committee for Aeronautics, Nov. 21, 1930 (mimeographed), Washington,
November 1930, pp. 11, illus., diagrs.
- Technical Notes No. 357. Bending tests of metal monocoque fuselage
construction, by Ralph W. Mossman and Russell G. Robinson.
National Advisory Committee for Aeronautics, Nov. 29, 1930 (mimeographed), Washington,
November 1930, pp. 38, illus., diagr., logs.
- Technical Notes No. 358. Experiments with a model water tunnel, by
Eastman N. Jacobs and Ira H. Abbott.
National Advisory Committee for Aeronautics, Dec. 4, 1930 (mimeographed), Washington,
December 1930, pp. 10, illus., diagrs.
- Technical Notes No. 359. A balanced diaphragm type of maximum
cylinder pressure indicator, by J. A. Spanogle and John H. Collins, jr.
National Advisory Committee for Aeronautics, Dec. 9, 1930 (mimeographed), Washington,
December 1930, pp. 7, illus.
- See Drake, G. H., and A. W. Parkes, jr.: The shielding effect of N. A. C. A.
cowlings.
- See Klemin, Alexander: The N. A. C. A. conference at Langley Field.
- See Neville, Leslie E.: The N. A. C. A. meets the industry.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS. *See* Reyneker, F. H.: De vorming van ijs op blootgestelde deelen van een vliegtuig in de vlucht. Door Thomas Carroll en Wm. H. McAvoy.

— *See* Rhode, R. V.: Die Lasteverteilung über Höhen- und Seitenleitwerk eines F 6 C-4 Jagdflugzeuges bei aussergewöhnlichen Flugbewegungen.

— *See* Wood, R. McKinnon: I nouvi tunnel aerodinamici americani.

NATIONAL AERONAUTIC ASSOCIATION. The 18th National Aeronautic Meeting. Journ. Soc. Automotive Engineers Vol. 27, No. 3 (Sept. 1930), New York, pp. 247-251, ill.

— N. A. A. Ninth annual convention.

National Aeronautic Magazine, Vol. 8, No. 9 (Sept. 1930), Washington, pp. 10-15, ill.

— *See* Bingham, Hiram: Annual report of the president.

NATIONAL AIR RACES. All set for National Air Races.

Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1191-1194, ill.

— The National Air Races.

Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1319-1326, ill.

— National Air Services, U. S. A.

Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, p. 1052.

— *See* Chicago: National Air Races. Chicago—August 23—September 1.

NATIONAL BUREAU OF STANDARDS. Aeronautics.

Standards Yearbook 1929, Washington, United States Government Printing Office, 1929, pp. 152-155.

NATIONAL CONFERENCE ON AERONAUTICAL EDUCATION. Proceedings . . .

National Conference on Aeronautical Education . . . First 1930.

New York, Daniel Guggenheim Fund Committee on Elementary Secondary Aeronautical Education, 1930.

NATIONAL FLYING SERVICES. An N. F. S. week-end.

Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, pp. 1036-1039, illus.

NAULIN. Le 37e régiment d'aviation et l'aviation du Maroc.

Revue des Forces Aériennes, No. 15 Oct. 1930, Paris, pp. 1119-1150, ill.

NAVAL architecture. *See* Sumner, Percy James Hammond: Marine aircraft: Elementary naval architecture.

NAVARRA, JEAN. *See* Chambe, René: La première victoire de Navarre.

NAVIGATION. Les cartes aéronautiques. Nouvelle méthode de navigation aérienne.

L'Aérophile, 38e année, Nos. 7-8 (15 avril 1930), Paris, pp. 103-106, maps.

— Gids voor luchtvarenden.

Uitgave Luchtaartdienst. Ministerie van Waterstaat.

— Un importante problema di navigazione aerea. La guida dei velivoli.

Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 140-143, ill.

— La navigazione fisica per vie aeree e marittime.

La Radio Industria, Anno 39, N. 9, 1930.

— *See* Biseo, Attilio: Considerazioni sull' impiego della navigazione astronomica in volo.

— *See* Block, Walter: Die Anwendung von Libellen bei nautischen Höhenwinkelmessern.

— *See* Clériot, Marcel: Le radiophare de Bobigny pour la navigation aérienne.

— *See* Cluzel: Un nouvel instrument de navigation: le calculateur du Cluzel.

NAVIGATION. *See* Connor, H. P. McLean: Navigation on the non-stop flight from New York to Bermuda and return.

— *See* Courtney, Frank T.: The future of air navigation.

— *See* Gloeckner, M. H.: Über Flugfunkpeilungen.

— *See* Gyrorector: Le Gyrorector.

— *See* Hingsburg, F. C.: Air navigation facilities.

— *See* Loth: Le rotte radioelettriche sistema Loth.

— *See* Radio: Navigazione aerea per radio.

— *See* Ramsey, Logan C.: The navigation of aircraft.

— *See* Roth, M. W.: Le guidage des navires ou aéronefs par ondes dirigées.

— *See* Sudeck, Günther: Ueber die Sendecharakteristik von Flugzeugschepp-antennen.

— *See* United States Hydrographic office: Radio aids to navigation 1930. Including details of radio-compass stations, radiobeacons, weather bulletins, storm and navigational warnings, time signals, etc.

— *See* Weems, P. V. H.: How Lindbergh flies. "Many flyers are really 'lost' a good part of the time."

NAYLER, J. L. Atlantic transport by air.

Discovery, Vol. 11, No. 129 (Sept. 1930), London, pp. 301-305.

NAYLER, J. L., and E. OWER. Aviation of to-day, its history and development . . . with a chapter on aircraft engines by W. J. Stern . . .

London and New York, F. Warne & Co., Ltd., 1930, pp. xix, 491, illus.

NEANT. L'instruction d'observation donnée en salle aux élèves-observateurs en ballon captif.

Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 524-552, ill.

NELSON, WILLIAM. Flying boat ranges as influenced by size.

Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1302-1303, ill.

— Protecting flying boats against corrosion.

Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 650-653, ill.

NEO-AEROBIA. Balance.

U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 44-45.

NEON LAMPS. *See* Breckenridge, Francis Chapin, and J. E. Nolan: Relative visibility of luminous flashes from neon lamps and from incandescent lamps with and without red filters.

NETHERLANDS. Zeilvliegen in Nederland.

Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, p. 5, ill.

— *See* Bleeker, W.: De meteorologische organisatie der Duitsche vliegvelden.

— *See* Cannegieter, H. G.: Ballonvaarten van de "Hollandia" en "Neerlandia."

NEUENDORFF, HANS. Das Aufmessen von Luftschauben.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 10. Heft (28. Mai 1930), München, pp. 255-257, illus.

NEUMANN, KURT. Diesel-chamber investigations; ignition-chamber engines.

National Advisory Committee for Aeronautics, Technical Memorandums No. 589, Oct. 30, 1930, Washington, October 1930, pp. 30, diagrs.

NEVILL, JOHN T. Behind the scenes of the national air tour.

Aviation, Vol. 29, No. 4 (October 1930), New York, pp. 241-244.

- NEVILL, JOHN T.** The new Detroit city airport.
 Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 720-728, illus.
- The story of Wichita.
 Aviation, Vol. 29, Nos. 3, 5, 6 (Sept., Nov., Dec., 1930), New York, pp. 166-170, 291-295, 353-357, illus.
- The tour in retrospect.
 Aviation, Vol. 29, No. 5 (Nov. 1930), New York, pp. 278-280.
- NEVILLE, LESLIE E.** Airplanes at the show. An analysis of the group with descriptions of the newer types.
 Aviation, Vol. 28, No. 9 (March 1, 1930), New York, pp. 419-433, illus., tabls.
- The consolidated "Commodore" flying boat.
 Aviation, Vol. 28, No. 2 (Jan. 11, 1930), New York, pp. 49-53, ill.
- Designs at the national air races.
 Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 209-213, illus.
- The fastest commercial airplane.
 Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 81-83, illus.
- Impressions of the New York show.
 Aviation, Vol. 28, No. 20 (May 17, 1930), New York, pp. 976-982, illus.
- The N. A. C. A. meets the industry.
 Aviation, Vol. 28, No. 21 (May 24, 1930), New York, pp. 1032-1036, illus., tabls.
- The N. Y. show in prospect.
 Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 885-887, illus.
- Planes, engines and accessories at the Detroit show.
 Aviation, Vol. 28, No. 16 (April 19, 1930), New York, pp. 796-809, illus., tabls.
- The S. A. E. discusses fuel.
 Aviation, Vol. 29, No. 5 (Nov. 1930), New York, pp. 273-277, diagrs., tabl.
- Three low-wing monoplanes.
 Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 232-240, illus., tabl.
- NEW, HARRY S.** Glancing back at 1929. More mail by air.
 Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., p. 62.
- NEW GUINEA.** Air transport aids mining in New Guinea.
 Engineering and Mining Journal, Vol. 129, No. 12 (June 23, 1930), pp. 594-596, illus., maps.
- Civil aviation in Australia and New Guinea. Review of progress, 1929.
 Aerodromes and emergency landing grounds.
 Air annual of the British Empire, 1930, pp. 125-133.
- Deutsche Frachtflugzeuge für Neu-Guinea.
 Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 43 (25. Okt. 1930), Berlin, p. 1494.
- Junkers aircraft for New Guinea.
 The Airplane, Vol. 39, No. 14 (Oct. 14, 1930), London, p. 781.
- See Guinea airways.
- NEW SOUTH WALES.** See Australia: Report together with Minutes of evidence and plan relating to the proposed development of the civil aerodrome at Mascot, New South Wales . . .
- NEW YORK.** New York Aircraft Salon.
 The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, p. 20, ill.
- The New York show.
 Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 671-672, ill.
- New York show proves successful. Bona fide sales good—Attendance reaches 130,000.
 Airway Age, Vol. 11, No. 6 (June 1930), New York, pp. 807-808, ill.

- NEW YORK. *See* B., H.: Paris-New York sans escale.
 — See Durán, Heriberto: *El bombardeamiento aéreo de Nueva York.*
 — See Connor, H. P. McLean: Navigation on the non-stop flight from New York to Bermuda and return.
 — See Holme, John C., jr.: Surveying the airport problem in New York city.
 — See Marshall, Fred F.: New York air show may determine future show policy.

- See Marshall, Fred F.: The New York show.
 — See Neville, Leslie E.: Impressions of the New York show.
 — See Neville, Leslie E.: The N. Y. show in prospect.
 — See Noyes, Charles E.: New York shows of the past.

NEW YORK STATE. *See* Lindgren, Gustave S.: New York State airways weather service.

NEW YORK TIMES. Catalog, the New York Times antarctic aviation exhibit, together with a chronology of historic events in aviation. Second annual New York aviation show, Grand Central Palace, February seventh to fifteenth, nineteen-hundred thirty.

[New York, American Printing Company, 1930], pp. 14, [2], ill.

NEW ZEALAND. Civil aviation in New Zealand.
 Air annual of the British Empire, 1930, London, p. 148.

- See Kundel, C. F.: Aviation in New Zealand.

NEWARK. *See* Snow, Virginia: The Newark air service.

NEWELL, JOSEPH S. The static testing of airplane wings.
 Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 188-190, ill.

- The static testing of fuselage structures.
 Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 358-359, ill.
 — Still higher performance and easier maintenance.
 Aviation, Vol. 28, No. 11 (March 15, 1930), New York, p. 526.
 — The strength of aluminum alloy sheets.
 Airway Age, Vol. 11, Nos. 11, 12 (Nov., Dec., 1930), New York, pp. 1420-1424, 1548-1551, ill., diagrs.

NEWFOUNDLAND. *See* Ring, Laurence Elmer: Airports in Canada and Newfoundland.

NEWLIN, J. A., and GEO. W. TRAYER. The design of airplane wing ribs.
 National Advisory Committee for Aeronautics, Report No. 345, June 11, 1930, Washington, U. S. Government Printing Office, 1930, pp. 54, ill.s., diagrs., tabs.

- A method of calculating the ultimate strength of continuous beams.
 National Advisory Committee for Aeronautics, Report No. 347, June 30, 1930, Washington, U. S. Government Printing Office, 1930, pp. 28, ill.s., diagrs., tabs.

NEWMAN, ARTHUR L. Aviation law and the Constitution. II.
 Yale Law Journal, Vol. 39, No. 8 (June 1930), New Haven, pp. 1113-1129.

NEWSPAPERS. *See* Rheinstrom, Charles A.: Newspapers and airplane accidents.

NICARAGUA. *See* Turner, Thomas C.: Flying with the marines in Nicaragua.

NICHOLS, P. W. Where design counts.
 Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Calif., pp. 42-43, 102.

NICHOLS, RUTH. The sportsman flies his plane.
 National Aeronautic Review, Vol. 8, No. 4 (April 1930), Washington, pp. 33-36, ill.

- NICKELS, C. B. *See* Lathrop, Frank Heidtman, and C. B. Nickels: A comparative study of dusting by means of airplane and ground machine for the control of the blueberry maggot.
- NIESSEL, HENRI-ALBERT. *Préparons la défense antiaérienne.*
Paris, J. Tallandier, 1929, pp. 128.
- NIET, J. M. D. DE. N. L. S. kroniek.
Het Vliegveld, 14de Jaarg., No. 4 (April 1930), Amsterdam, pp. 109-110, port.
- De opleiding tot vlieger.
Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, pp. 53-55, diagr.
- NIEUPORT-DELAGE. *L'hydravion de course Nieuport-Delage, type 450.*
L'Aérophile, 38e année, Nos. 3-4 (1er-15 fév. 1930), Paris, p. 42, ill.
- NIGHT flying. *Het Luchtverkeer bij nacht.*
Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, pp. 3-4, map.
- *See* Gubbins, M. N. T.: The development of civil aviation and night flying.
- *See* Rengaw: Aids to night-flying.
- NILES, ALFRED S. Airplane chassis design—The shock absorbing unit. A discussion of landing gear problems.
Airway Age, Vol. 11, Nos. 7-8 (July-Sept. 1930), New York, pp. 918-921, 1054-1058, 1205-1207
ill., diagrs., tabs.
- Criteria for the structural strength of airplanes.
Journ. Soc. Automotive Engineers, Vol. 26, No. 2 (Feb. 1930), New York, pp. 226-234.
- The design of landing gear. Axial loads, bending moments and torsions in tripod type chassis. Part II.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 61-65, ill., tabs.
- Structural strength of aeroplanes.
Journ. Soc. Automotive Engineers, Vol. 26, No. 2 (Feb. 1930), New York, p. 226.
1918. *See* Buckley, Harold R.: Sportsmen pilots of 1918.
1929. Glancing back at 1929.—Extracts from annual reports of Government Department heads.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 60-63, ports.
- *See* Great Britain: On British progress in 1929.
- *See* Helbig: Jugendbewegung und motorloser Flug im Deutschen Luftfahrt-Verbande. *Statistischer Rückblick* 1929.
- *See* Italy: Annuario ufficiale della regia aeronautica; 1929, a. VII. Ufficiali in s. p. e. e personale civile a ruolo.
- *See* Kirschner, A.: Die Weltluftfahrt 1929. I. Luftpolitik.
- *See* Walter, Franz: Der Motorflugsport im Deutschen Luftfahrt-Verband Statistischer Rückblick 1929.
1930. Almanacco Aeronautico 1930.
Mailand, Verlag Bompiani
- *See* Italy: Annuario ufficiale della r. aeronautica; 1930, a. VII.
- *See* Italy: Annuario ufficiale della r. aeronautica 1930, a. VIII. Ufficiali della riserva aeronautica.
- *See* Italy: Regolamento per il Servizio Aeronautico 1930. Edito dal Registro Italiano Navale ed Aeronautico con sede in Roma.
- *See* Vergani Orio, Massai Mario: Almanacco aeronautico 1930.

1931. Aviation in 1931.
Trade Winds, Vol. 9, No. 12 (Dec. 1930), pp. 13, 16.
- Deutscher Luftfahrt-Kalender 1931.
[Berlin, [1930], pp. 365, ill.]
- NISTRI. *See* Baroni, Augusto: A defence of the Nistri photocartograph.
- *See* Baroni, Augusto: In difesa del fotocartografo "Nistri".
- NISTRI, UMBERTO. L'aerofotogrammetria nelle sue pratiche applicazioni con particolare riferimento al metodo di restituzione "Nistri."
L'Aerotecnica, Vol. 10, No. 5 (Maggio 1930), (Anno VIII), Roma, pp. 351-368, ill.
- NOBILE. *See* Polesine, Jotti da Badia: Critica alla spedizione Nobile.
- NOBILE, AMADEO. *See* Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen Ergebnisse der Polarexpedition der "Italia."
- NOBILE, UMBERTO. L' "Italia" al Polo nord.
Milano, A. Mondadori, 1930, pp. xv, 475, ills.
- Im Luftschiff zum Nordpol.
Berlin, Union Deutsche Verlagsgesellschaft, ill.
- Die Vorbereitungen und die wissenschaftlichen Ergebnisse der Polarexpedition der "Italia," unter Mitarbeit von Franz Böhounek, Finn Malmgren, Amadeo Nobile, Luigi Palazzo, Aldo Pontremoli, G. de Mottoni und E. Pugno-Vanoni, herausgegeben von Umberto Nobile; mit einem geleitwort von A. Berson und L. Breitfuss.
Gotha, J. Perthes, 1929, pp. 98, ill., maps, diagrs. Egränzungsheft Nr. 205 zu "Petermanns Mitteilungen." Nobile, U.—Das geographische Problem der Arkis, das Programm und die Durchführung der Flüge der "Italia." Das Programm und die wissenschaftliche Vorbereitung der Expedition der "Italia." Böhounek, F.—Forschungen über atmosphärische Elektrizität. Malmgren, F.—Bericht über den Flug nach Nordland (Nikolaus II.-Land). Nobile, A.—Aerometeorologische Beobachtungen an der Königs-Bucht im April und Mai 1928. Palazzo, L.—Vorstudien für die erdmagnetischen Forschungen auf der Luftschiffexpedition in die Arktis. Pontremoli, A.—Beobachtungen. Mottoni, G. de, und Pugno-Vanoni, E.—Einige Instrumente die von Prof. Aldo Pontremoli für die Polfahrt Nobiles im Jahre 1928 konstruiert worden sind.
- With the "Italia" to the North Pole.
London, G. Allen & Unwin Ltd., 1930, pp. 358, ill.
Translated by Frank Fleetwood.
- NODA, T. A contribution to the theory of the aerofoil.
Proceedings of the Imperial Academy, Vol. 5, No. 3 (March 1929), Tokyo, pp. 119-121, ill., diagrs.
- NOKES, G. D., and H. P. BRIDGES. The law of aviation.
London, Chapman and Hall, Ltd., 1930, pp. xix+220.
- NOLA, ANGELO DI. La lotta contro la malaria in aviazione.
Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 21-65, ill., tabls.
- Questioni sanitarie di aviazione.
Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 451-458.
- NOLAN, J. E. *See* Breckenridge, Francis Chapin, and J. E. Nolan: Relative visibility of luminous flashes from neon lamps and from incandescent lamps with and without red filters.
- NOLEN, JOHN. Airports and airways and their relation to city and regional planning.
New York, National Conference of City Planning, 1928, pp. 22, plan.
- NOMENCLATURE. *See* Hegener, Henri: Een taalwacht voor de luchtvaart.
- NORGE. *See* Wisting, Oscar: 16 år med Roald Amundsen; fra pol til pol.

NORMAND, C. W. B. India Meteorological Department. Upper air data 1928. Part 13.—Monthly means of pilot balloon data and monthly frequencies of cloud direction.

Calcutta, Government of India, Central Publication Branch, 1930, pp. II, 439-558.

NORMAND, PAUL-AUGUSTIN. Les origines de la chaudière à circulation accélérée. Paris, Société d'éditions maritimes et géographiques.

NORTH AMERICA. See Germany: Viaje de Alemania a Norte América.

NORTH POLE. See Andrée: The fate of Andrée.

— See Andrée, Salomon August: Hallazgo de la expedición Andrée.

— See Arctic.

— See Breitfuss, L.: Übersicht der hauptsächlichsten bisherigen polaren Flüge und Luftfahrten.

— See Graf Zeppelin: The "Graf Zeppelin."

— See Maurer, H.: Norddrehfehler und Deviation.

— See Mittelholzer, Walter: Im Flugzeug dem Nordpol entgegen.

— See Nobile, Umberto: L' "Italia" al Polo nord.

— See Nobile, Umberto: Im Luftschiff zum Nordpol.

— See Nobile, Umberto: With the "Italia" to the North Pole.

— See Svenska Sällskapet för Anthropologi och Geografi: Andrée's story; the complete record of his polar flight, 1897, from the diaries and journals of S. A. Andrée, Nils Strindberg, and K. Fraenkel, found on White Island in the summer of 1930 and edited by the Swedish society for anthropology and geography; translated from the Swedish by Edward Adams-Ray.

— See Svenska Sällskapet för Anthropologi och Geografi: Dem pol entgegen; auf grund der während Andrées Polarexpedition 1897 geführten und 1930 auf Vitö gefundenen Tagebücher S. A. Andrées, N. Strindbergs und K. Fraenkels, herausgegeben von der Schwedischen Gesellschaft für Anthropologie und Geographie.

NORTHROP. The Northrop monoplane.

Aeroplane, Vol. 38, No. 13 (March 26, 1930), London, pp. 530-532, ill.

NORTHROP, JOHN K. The all-wing type airplane.

Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 645-649.

— The flying wing.

Western Flying, Vol. 7, No. 3 (March 1930), Los Angeles, Calif., pp. 46-49, ill., diagr.

NORTHWEST AIRWAYS. See Fewkes, Charles K.: The plane for the purpose.

NOTRUS. Notrus hangars.

Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, p. 256, ill.

NOVALUX. Novalux ceiling light.

Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, p. 250, ill.

NOYES, CHARLES E. New York shows of the past.

Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 880-884, ills.

NOYES, RICHARD W. See Knight, Montgomery, and Richard W. Noyes: Span load distribution on two monoplane wing models as affected by twist and sweepback.

— See Knight, Montgomery, and Richard W. Noyes: Wind tunnel pressure distribution tests on a series of biplane wing models. Part III. Effects of changes in various combinations of stagger, gap, sweepback, and decalage.

NOZZLES. *See* Mueller, H., and H. Peters: Coefficients of flow of standard nozzles.

NUMANN, FIEF. De All-American Aircraft Show te Detroit.

Het Vliegveld, 13de Jaarg., No. 6 (Juni 1929), Amsterdam- pp. 222-223, ill.

NUTT, ARTHUR. Aircraft-engine installation.

Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 268-273, ill.

NUTT, A. E. WOODWARD. *See* Maitland, C. E., and A. E. Woodward Nutt: Flight tests on the variation of the range of an aircraft with speed and height.

— *See* Stevens, H. L., and A. E. Woodward Nutt: Charts for aircraft performance reduction.

○

OAKLAND. *See* Abel, Arthur H.: Selling airport facilities at a profit. How the Oakland airport secures a net profit of \$2,000 a month.

OBATA, JŪICHI, and YAHEI YOSIDA. Acoustical properties of some sound collectors for the aircraft sound collector.

Report of the Aeronautical Research Institute, Tōkyō Imperial University, No. 62 (Vol. 5, 9), (July 1930), Tōkyō, pp. 231-247, ill., diagrs.

— The analysis of the sounds emitted by aircraft.

Report of the Aeronautical Research Institute, Tōkyō Imperial University, No. 59 (Vol. 5, 6), (March 1930), Tōkyō, pp. 143-185, ill., diagrs., tabs.

Proc. Phys.-Math. Soc. Japan, Ser. III, Vol. 12, 1930, Tōkyō, pp. 80-92.

OBATA, JŪICHI, and YUGIO MUNETOMO. On the possibility of applying the cathode-ray oscillograph to the indicator for high-speed engines.

Report of the Aeronautical Research Institute, Tōkyō Imperial University, No. 57 (Vol. 5, 4), (Feb. 1930), Tōkyō, pp. 93-100, ill.

OBERFELL, G. G., T. W. LEGATSKI, and BILLY PARKER. Aviation natural and its relation to other aviation gasoline.

U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 50-54, 58, 60, diagrs., tabs.

OBERTH, HERMANN. Wege zur Raumschiffahrt.

München, R. Oldenburg.

OBSERVATION BALLOONS. *See* Kamm, Wunibald: Betriebsverhältnisse und Konstruktionsgrundlagen der Fesselballone.

OCKER, WILLAIM C. Economic value of flying by instruments.

Aero Digest, Vol. 17, No. 4 (Oct. 1930), New York, pp. 62-63, ill.

ODIER, A. La libération.

L'Aéophile, 38e année, No. 10 (15 oct. 1930), Paris, pp. 297-299.

OFFERMANN, E. Der Flug ohne Horizont.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 7, 8. Heft (14., 28. April 1930), München, pp. 161-164, 200-203.

OFSTIE, R. A. Airplanes as the test pilot sees them.

Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 335-338, ill., diagr.

OGAWA, TAITIRO. The attempted take-off of the "City of Tacoma" for the trans-pacific flight at Kasumigaura, Japan.

Report of the Aeronautical Research Institute, Tōkyō Imperial University, No. 63 (Vol. 5, 10), (October 1930), Tōkyō, pp. 249-258, ill., diagrs.

OGER, MARCEL. Le trafic sur les lignes aériennes Françaises en 1929 comparé aux années précédentes.

Aéronautica, Vol. 4, No. 3 (March 1930), Arnhem, pp. 49, 51.

OGLE, LESTER L. Training army air corps technicians.

Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 67, 210, ill.

- OIL. *See* Gheorghiu, T. D.: Etude de l'absorption dans le spectre visible de quelques huiles minérales.
- *See* Water: Notes complémentaires sur la circulation d'eau et la circulation d'huile.
- *See* Yamaguchi, Bunnosuke: Action of antioxydants in oxidation of unsaturated fatty oils. I.
- *See* Yamaguchi, Bunnosuke: Action of antioxygens in the oxidation of unsaturated fatty oils II.
- OIL pumps. *See* Castagna, A.: Prove su di una pompa ad ingranaggi.
- OKLAHOMA. *See* McBoyle, William W.: Are airplanes motor vehicles? Supreme Court asked to decide if auto law applies to stolen aircraft.
- OKUMURA, HIROTO. *See* Kobayasi, Tatuo, Hiroto Okumura, Kinmatsu Simamura, and Tatuo Koyama: Application of the inverse Wiedemann effect to torque variation recordings. Part II.
- ORDONYEZ, C. El motor Diesel en la aviaciⁿ.
Revista de Ingenieria Industrial, Vol. 1, No. 2 (Junio 1930), Madrid, pp. 11-19, ill.
- ORIENTING. Orientierungssystem für Luftfahrer.
Luftschau, 3. Jahrg., Nr. 24 (24. Dez. 1930), Berlin, pp. 187-188, map.
- ORLOVIUS, HEINZ. Deutsche Luftpost.
Aeronautica, Vol. 4, No. 3 (March 1930), Arnhem, pp. 51-53, illus.
- ORNITHOPTER. *See* Guillaume: La question de l'ornithoptère. "Le vol ramé des oiseaux."
- ORSELLI. Le nouveau matériel photographique des forces aériennes.
Revue des Forces Aériennes, No. 11, juin 1930, Paris, pp. 696-708, ill., tabls.
- Les nouveaux postes de T. S. F. de l'aviation militaire.
Revue des Forces Aériennes, No. 7, fév. 1930, Paris, pp. 200-209, ill.
- OSBORN, EARL D. An amateur plane for the amateur pilot.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 134-136, ill.
- Seaplane bases.
Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 52-54, illus.
- OSBORN, ROBERT R. Future aircraft-design trends.
Mech. Eng., Vol. 52, No. 11 (Nov. 1930), New York, pp. 971-974, ill.
- The "Tanager" and some of its history.
Aviation, Vol. 28, No. 6 (Feb. 8, 1930), New York, pp. 242-248, ill.
- OSCILLOGRAPH. *See* Obata, J^aichi, and Yugio Munetomo: On the possibility of applying the cathode-ray oscilloscope to the indicator for high-speed engines.
- OSTMARK. *See* Platzek, A.: Der "Luftfahrtverein Ostmark," Frankfurt a. d. Oder.
- OSWALD, M. BAILEY. Comparison of aircraft. Some criticisms of Capt. Sumner's article.
The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. (1068g-1068h), 71-72.
- OUTRAM, H. W. S. British aeronautical inspection.
Air annual of the British Empire 1930, London, pp. 226-250, ill.
- OVER, WING. China as an aeronautic market.
Aero Digest, Vol. 16, No. 4 (April 1930), New York, p. 178.
- OVINGTON, EARLE. Flying from the private-owner's standpoint.
Mech. Eng., Vol. 52, No. 11 (Nov. 1930), New York, pp. 974-976.

- OWER, E. A micromanometer of high sensitivity.
Aer. Res. Comm., Rep. Mem., No. 1308, (Ae. 448), February 1930, London, 1930, pp. 7, ill.
- See Nayler, J. L., and E. Ower: Aviation of to-day, its history and development . . . with a chapter on aircraft engines by W. J. Stern . . .
- OWER, E., and C. T. HUTTON. Investigation of the boundary layers and the drags of two streamline bodies.
Aer. Res. Comm., Rep. Mem., No. 1271, (Ae. 417), September 1929, London, 1930, pp. 19, ill., diagrs., tabls.
- OXFORD UNIVERSITY. Oxford University air squadron. Annual camp at Manston.
Flight, No. 1127, Vol. 22, No. 31 (Aug. 1, 1930), London, pp. 862-863, ill.
- OXYGEN. See Strughold, H.: Flugphysiologische Studien. II. Sauerstoffmangel und die Feinheit der Wahrnehmung der Gliederbewegung.
— See Strughold, H.: Kinematographische Studie der Herzgrossen bei Sauerstoffmangel. ("Direktelekt" auf das Herz.)
- P
- P. Fokker 40 jaar.
Het Vliegveld, 14de Jaarg., No. 4 (April 1930), Amsterdam, pp. 111-113, ill., port.
- P., L. Aménagement des planches de bord.
L'Aéronautique, 12me année, No. 138 (nov. 1930), Paris, pp. 414-420, ill.
- Het "Robur" valscherf.
Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, pp. 55-57, ill.
- PABST, WILHELM. Aufzeichnen schneller Schwingungen nach dem Ritzverfahren.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin 1930, pp. 31-36, ill., diagrs.
- Theorie des Landestosses von Seeflugzeugen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 69-78, ill., diagrs.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 9. Heft (14. Mai 1930), München, pp. 217-226, ill., diagrs.
- Theory of the landing impact of seaplanes.
National Advisory Committee for Aeronautics, Technical Memorandums No. 580, Aug. 28, 1930, Washington, August 1930, pp. 36, ill., diagrs.
- Vergleich zwischen theoretischer und experimenteller Ermittlung des Stosses eines auf die Wasseroberfläche auftreffenden Kegels.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 16. Heft (28. Aug. 1930), München, pp. 418-419, ill., diagr.
- PACE, E. M. The good-will air tour.
Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, p. 18, 63.
- PACIFIC. See Ogawa, Taitiro: The attempted take-off of the "City of Tacoma" for the trans-Pacific flight at Kasumigaura, Japan.
— See Quinn, J. J.: Airships to fly Pacific.
- PACIFIC SCHOOL OF AVIATION. See Pilots: Getting them up in the air.
- PACKARD. Le moteur Packard-Diesel.
L'Aéronautique, 12me année, No. 135 (août 1930), Paris, pp. 291-294, ill.
- The Packard Diesel.
Western Flying, Vol. 7, No. 4 (April 1930), Los Angeles, Calif., pp. 94-98, ill.
- The Packard Diesel engine.
Aeronautical Engineering, suppl. to Aeroplane, Vol. 38, No. 18 (April 30, 1930). London, pp. 794-798, ill.
- The Packard Diesel is ready and approved.
Airway Age, Vol. 11, No. 4, (April 1930), New York, pp. 544, 546, 548, 550, 552, ill.

PACKARD. Der Packard-Dieselflugmotor.

Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 233-287, illus., tabls.

— The Packard aircraft Diesel.

The Sportsman Pilot, Vol. 3 No. 4 (April 1930), New York, pp. 21-23, 52, ill.
Portrait of L. M. Woolson.

— See Diesel engines: Il motore Diesel-Packard.

— See Ford: Ford transport equipped with three Packard Diesel radial air-cooled motors.

— See Schneider, Helmut: Der "Packard Diesel"-Flugmotor.

— See Woolson, L. M.: The Packard Diesel aircraft engine.

— See Woolson, L. M.: The Packard Diesel engine.

PACKING. See James Walker & Co., Ltd.: Packing and jointing for aero engines.

PAGE, FREDERICK HANDLEY. See Handley Page, Frederick.

PAGÉ, VICTOR WILFRED. Aviation engine examiner; a complete course of lessons for home or school use, in question and answer form, for those wishing to qualify as aircraft engine mechanics. Also for pilots or students wishing a general and diversified knowledge of aviation engines and their accessories. It considers in detail and in simple language, all leading types of aviation engines, describes principles on which their operation is based and gives instructions for engine inspection, installation, trouble shooting and repair.

New York, The Norman W. Henley Publishing Co., 1930, pp. 448, illus., diagrs.

— Henley's ABC of gliding and sailflying.

New York, Norman W. Henley Publishing Company, 1930, pp. xvi, 294, ill.

— Modern aviation engines.

New York, Norman W. Henley. London, Chapman et Hall, 1929, 2 vols., pp. 976, 1908, ill.

PAINLEVÉ, PAUL. Leçons sur la résistance des fluides non visqueux.

Paris, Gauthier-Villars et Cie., éditeurs.

PAKAS, MANFRED A. The real estate aspects of airports. The need for airports and the importance of land and property development.

Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 519-521, ill.

PALAZZO, LUIGI. See Nobile, Umberto: Die Vorbereitungen und die wissenschaftlichen Ergebnisse der Polarexpedition der "Italia."

PALERMO. See Boffito, Giuseppe: L'aeronautica nelle città italiane: Palermo.

— See Bolla, Filippo: La velocità del vento al suolo e a quote a Palermo.

PAN AMERICAN AIRWAYS, INC. Pan American Airways system, instructions for the handling and recording of air mails.

Washington, D. C., 1930, pp. 25.

— Pan American Airways System; private cable code.

Washington, D. C., 1929, pp. 384.

— See H.: De Pan American airways.

PANAMA CANAL. Die amerikanischen Flotten- und Luftmanöver am Panama-kanal 1929.

Die Luftwacht, Heft 4, April 1930, Berlin, pp. 163-166.

PANDER. See India: Op 'n Pander naar Indië.

PAPPEL, EGINHARD. See Mock, Richard M., and Eginhard Pappel: German airplane requirements as compared with those of the Department of Commerce. (Parts 1 and 2.)

PARACHUTE cloth. Physical characteristics of parachute cloth under varying atmospheric conditions.

Air Corps Information Circular, Vol. 7, No. 651 (June 23, 1930), Washington, United States Government Printing Office, 1930, pp. 11, illus., diagrs., tabls.
Air Corps Technical Report No. 3228.

PARACHUTES. Quick-attachable parachute.

Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, p. 1230, ill.

— New Irvin air chute.

Airway Age, Vol. 11, No. 6 (June 1930), New York, p. 842, ill.

— Un nuovo paracadute svizzero.

Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, p. 583, ill.

— Un nuovo sistema di paracadute.

Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 349-351, ill.

— See Dixon, Charles: The parachute in the Royal Air Force.

— See Dixon, Charles: Parachutes for airmen.

— See Dixon, Charles: Parachuting.

— See Graham, Lloyd: Care and maintenance of parachutes.

— See Hartz, Rutherford S., and Elzor E. Hall: Airplane mechanics rigging handbook.

— See Hegener, Henri: De geschiedenis van het valscherf.

— See Irvin: The latest Irvin air chute.

— See Irvin, Leslie L.: Velocity tests on falling bodies relating to parachuting.

— See McNicholas, H. J., and A. F. Hedrick: The structure and properties of parachute cloths.

— See Murphy, Charles J. V.: Parachute.

— See P. L.: Het "Robur" valscherf.

— See Robur: Demonstratie met de "Robur" parachute van Lundholm.

— See Robur: The "Robur" parachute.

— See Salvator: Demonstratie met de "Salvator" parachute to Soesterberg.

— See Salvator D.: Descrizione ed istruzioni per l'impiego del paracadute "Salvator D."

— See Smith, Floyd: On the jump.

— See Waite, George: A new passenger chute for transport planes.

— See White, Bert: How to care for lifesavers of the air.

PARIS. 12e Exposition Internationale de l'Aéronautique—Paris.

Deutsche Luftfahrt, 34. Jahrg., Heft 10-11, 1930, Berlin-Charlottenburg, pp. 259-260.

— Le 12e Salon.

L'Aéophile, 38e année, No. 12 (15 dec. 1930), Paris, pp. 355-364, ill.

— Le 12e salon de Paris.

Revue des Forces Aériennes, No. 16 (nov. 1930), Paris, pp. 1247-1272, ill.

— The Paris aero show.

Flight, No. 1145, Vol. 22, No. 49 (Dec. 5, 1930), London, pp. 1401-1413, ill.

— Pariser Luftfahrtausstellung 1930.

Luftschau, 3. Jahrg., Nr. 23, 24 (10., 24. Dez. 1930), Berlin, pp. 177-180, 185-186, ill.

- PARIS.** *See* B., H.: Paris-New York sans escale.
- *See* Bourget: L'aéroport de Paris: Le Bourget.
- *See* Faure-Favier, Louise: Au Salon de l'Aéronautique et l'Art. L'art et l'avion.
- *See* Granet, André: Le 12e Salon de l'Aviation.
- *See* Hegener, Henri: De Luchtvaart-Salon te Parijs.
- PARKER, BILLY.** *See* Oberfell, G. G., T. W. Legatski, and Billy Parker: Aviation natural and its relation to other aviation gasolines.
- PARKER, WILLIS.** Dealers wanted—but what kind?
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1343-1345, ill.
- Organizing to sell airplanes.
Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 529-530, ill.
- Sells airplanes like motor trucks. Pikes Peak Air Commerce, Inc., merchandises planes by emphasizing capacity.
Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 685-686.
- This is selling! Four fundamentals in airplane merchandising.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 228-230, ill.
- PARKES, A. W., jr.** *See* Drake, G. H., and A. W. Parkes, jr.: The shielding effect of N. A. C. A. cowlings.
- PARKIN, J. H., and G. J. KLEIN.** The interference between the body and wings of aircraft.
Journ. Roy. Aer. Soc., Vol. 34, No. 229 (Jan. 1930), London, pp. 1-91, illus., diagrs., tabs.
- PARKINSON, H.** Seaplane take-off calculations.
The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, pp. 1480-1481, illus.
- PARNELL.** George Parnall & Co.
Air annual of the British Empire 1930, London, pp. 510-517, ill.
- PARSONS, JOHN F., and JARVIS A. WALLEN.** An investigation of the phenomenon of separation in the air flow around simple quadric cylinders.
National Advisory Committee for Aeronautics, Technical Notes No. 354, Nov. 8, 1930, Washington, November 1930, pp. 26, illus., diagrs., tabs.
- PASSOTH, OSKAR.** *See* Wolle, Georg, und Oskar Passoth: Borgeräte-Ausrüstung der am Internationalen Rundflug 1930 beteiligten Flugzeuge.
- PATTISON, HENRY O., jr.** Speed, the industry's greatest selling point.
Aviation, Vol. 28, No. 20 (May 17, 1930), New York, pp. 984-988.
- PAWLOWSKI, FELIX W.** Higher cruising speeds without increase of landing speed.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 527-529.
- PAYNE, ENOCH GEORGE, and H. R. BARROWS.** The story of aviation.
New York, American Viewpoint Society, inc., 1930, pp. 232, illus.
- PAYNE, JOHN BARTON.** Flying to the rescue.
National Aeronautic Magazine, Vol. 8, No. 11 (Nov. 1930), Washington, pp. 9, 12-13, 15-16, 21, ill.
- PEED, GARLAND POWELL, Jr.** Causes and preventions of flat and inverted spins.
Aero Digest, Vols. 16, 17, Nos. 6 and 1 (June, July 1930), New York, pp. 77-78, 204, 74-75, 200, 202, illus., diagrs.
- Refinements and more speed—commercial considerations; control design.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 533-534.
- PELTERIE.** *See* Esnault-Pelterie, Robert.

- PEÑA, J. El alumbrado eléctrico en la aviación.
Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, pp. 30-32, ill.
- PENNÈS. Réflexions sur l'emploi de l'aviation dans la réduction de la dissidence au Sud du Maroc.
Revue des Forces Aériennes, No. 7, fév. 1940, Paris, pp. 186-199, ill., maps.
- PENSIONS. See R 101: Pensions and gratuities to R 101 dependents.
- PÉRÈS, JOSEPH. Action sur un obstacle d'un fluide visqueux; démonstration simple de formules de Faxen.
C. R. Acad. Sci., T. 188, No. 4 (21 jan. 1929), Paris, pp. 310-312.
- PERFORMANCE. See Carafoli, Elie: Le calcul des performances d'un avion.
— See Grasé, Ir B.: Het meten van vliegtuigprestaties.
- PERKINS, KENDAL. Two fundamentals in aircraft welding.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., p. 78.
- PERRING, W. G. A., and C. CALLEN. Moments and forces on a yawed model aeroplane.
Aer. Res. Comm., Rep. Mem., No. 1319, (Ad. 455), February 1930, London, 1930, pp. 3, ill., diagrs., tabs.
- PERRING, W. G. A. See Douglas, G. P., W. G. A. Perring, and R. A. Fairthorne: Wind tunnel tests with high tip speed airscrews. Experimental investigation of blade twist under load.
— See Wood, R. McKinnon, and W. G. A. Perring: Stresses and strains in airscrews with particular reference to twist.
- PERSIA. Early Persian pursuit plane.
The Sportsman Pilot, Vol. 3, No. 5 (May 1930), New York, p. 15, ill.
- PERU. See Johnson, George R.: Peru from the air.
- PETERS, MELVILLE F., WAYNE L. SUMMERVILLE, and MERLIN DAVIS. An investigation of the effectiveness of ignition sparks.
National Advisory Committee for Aeronautics, Report No. 359, Nov. 17, 1930, Washington, U. S. Government Printing Office 1930, pp. 13, ill., diagrs., tabs.
- PETERSEN, WILLIAM J. Iowa City municipal airport.
Palimpsest, Vol. 11, No. 9 (Sept. 1930), Iowa City, pp. 404-414.
- PETERSON, F. S. Careful planning pays in airport lighting.
Electrical World, Vol. 96, No. 6 (Aug. 9, 1930), New York, pp. 259-260, ill.
- PETERSON, J. B., and G. W. Rounds. Flight test instruments.
Journ. Soc. Automotive Eng., Vol. 26, No. 3 (March 1930), New York, p. 313.
- PETLIAKOV, V. M. Aviation progress under the Soviet.
Aviation, Vol. 28, No. 3 (Jan. 18, 1930), New York, pp. 108-112, ill.
- PETRIE, FRANK. See Schetter, Clyde, and Fank Petrie: Training pilots for airships.
- PHILADELPHIA. Philadelphia, aeronautical center of the East . . . Survey by Airport Consultants, Inc.
Philadelphia, Philadelphia Chamber of Commerce, Aviation Committee, 1930, pp. 32, ill., map.
- PHILATELY. See Berezowski, Alexander: *Handbuch der Luftpostkunde*.
- PHILIPPINES. See Hoeck, James: A flying tour of the Philippines.
- PHILIPPOVICH, ALEXANDER von. See Rackwitz, Erich, und Alexander von Philippovich: Anforderungen an Kraftstoffe für Flugzeuge und Kraftwagen im Ausland.

- PHILIPPOVICH, ALEXANDER VON.** *See* Rackwitz, Erich, und Alexander von Philippovich: Beurteilung von Flugmotorenkraftstoffen in Deutschland.
- *See* Rackwitz, Erich, und Alexander v. Philippovich: Das Kalteverhalten von Kraftstoffen zur Verwendung in Luftfahrzeugen.
- *See* Rackwitz, Erich, und Alexander von Philippovich: Der Schwefelgehalt von Kraftstoffen und seine Bedeutung für den Flugbetrieb.
- PHILIPS.** Veilig vliegen des nachts! Proeven bij de luchtvaart afdeeling te Soesterberg met de Philips-luchtvaartlampen.
Het Vliegveld, 13de Jaarg., No. 4 (April 1929), Amsterdam, pp. 143-144, ill.
- PHOTOGRAMMETRY.** Az egyszerű légi fotogrammetria.
Aviatika, 6. évf., 4. szám (1930 április), Budapest, pp. 104-106, ill.
- *See* Baroni, Augusto: In difesa del fotocartografo "Nistri."
- *See* Bossolasco, Mario: L'aerofotogrammetria nell'indagine limnologica.
- *See* Cassinisi: The third international meeting of photogrammetry.
- *See* Gruber, O. V.: Fereinkurs in photogrammetrie.
- *See* Hugershoff, R.: Photogrammetrie und Luftbildwesen.
- *See* Lacmann, Otto, und Walter Block: Photogrammetrische Lage- und Geschwindigkeitsbestimmung des Luftschiffs LZ-127 "Graf Zeppelin" auf der ersten Versuchsfahrt der DVL.
- *See* Nistri, Umberto: L'aerofotogrammetria nelle sue pratiche applicazioni con particolare riferimento al metodo di restituzione "Nistri."
- PHOTOGRAPHY.** Aerial photography.
Army Ordnance, Vol. 10, No. 58 (Jan.-Feb. 1930), p. 277.
- Air survey and air photographic equipment. Williamson Manufacturing Company, Ltd.
Air annual of the British Empire 1930, London, pp. 642-654, ill.
- Air photography, Part I and II.
London, Air publications 1354-1355 from the Aeroplane Book Department.
- Un apparecchio fotografico per misurare la velocità e la traiettoria dei velivoli.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 136-139, ill.
- Il nuovo materiale fotografico dell'aeronautica francese.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 119-126, ill.
- *See* Carlier, A. H.: La photographie aérienne.
- *See* Crawford, O. G. S.: Ordnance survey professional papers. New Series No. 12. Air photography for archaeologists.
- *See* Durward, J.: Air photography surveys.
- *See* Fairchild, Sherman M.: Air photography for amateurs.
- *See* Ferber, R.: La photographie aérienne de précision.
- *See* Gehres, L. E.: Shooting the moon's shadow.
- *See* Guillaume: Le rendement des sections photographiques dans la guerre de mouvement.
- *See* Hotine, M.: Professional papers of the air survey committee. No. 5. Calibration of surveying cameras. No. 6. Extensions of the "Arundel" method.

- PHOTOGRAPHY** *See* Kennedy, Mel S.: Prospecting by air.
- *See* Kryptocyanine: Kryptocyanine in photography.
- *See* Küssner, Georg. Optisch-photographische Formänderungsmessungen an Luftfahrzeugen.
- *See* Leiber, Ferdinand: Untersuchung von organischen Farbstoffen auf ihre Verwendbarkeit für Lichtfilterzwecks.
- *See* Orselli: Le nouveau matériel photographique des forces aériennes.
- *See* Poncelet, L.: L'exploitation de la photographie aérienne.
- *See* Roussilhe, H.: Emploi de la photographie aérienne aux levers topographiques à grande échelle.
- *See* Schmieschek, Ulrich: Neue Wege zur Steigerung der Lichtempfindlichkeit von photographischen Emulsionen.
- *See* Schmieschek, Ulrich: Untersuchungsergebnisse von 61 photographischen Emulsionen des Handels.
- *See* Stevens, Albert W.: Aerial photography by infra-red rays.

- *See* Suhara, Toyotarō, Naozō Satō, and Sidutake Kamei: A new ultra-speed kinematographic camera taking 40,000 photographs per second.
- *See* Whitehead, R. F.: Problems of aerial photography in Alaska.

- *See* Wijn, J. W.: De luchtfotografie en hare toepassing op historisch gebied.
- PHYSIOLOGY.** *See* Gillert, Ernst: Sitz und Gurte im Flugzeug als Einheit.

- *See* Kaiser: Physiologische Probleme des Höhenfluges.
- *See* Strughold, H.: Flugphysiologische Studien. II. Sauerstoffmangel und die Feinheit der Wahrnehmung der Gliederbewegung.
- *See* Vy, A.: Physiologie der vliegers op groote hoogten.

PICCARDO, TOMASO. Modelli volanti (Opera naz. Balilla; aereo club della Liguria, Genova).

[Genova], tip. edit. Filli Pagano, 1929, pp. 59.

PIERCY, N. A. V. The turbulence in front of a body moving through a viscous fluid.

Philosophical Magazine, Vol. 9, No. 60 (May 1930), London, p. 1038.

PIERSON, MRS. HAROLD C. And how does success affect Igor Sikorsky? The answer is, not at all.

U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 25-28.

PILLARD, M. L'amélioration des avions multimoteurs par l'hélice. L'hélice roue-libre.

Marseille, Ferran & Co., 1929, pp. 20.

— Improving the performance of multi-engined airplanes by means of idling propellers—The "free-wheel" propeller.

National Advisory Committee for Aeronautics, Technical Memorandums No. 561, April 17, 1930, Washington, April 1930, pp. 18, illus., diagrs.

PILOTING. Manuel de pilotage.—Manuel officiel de l'aéronautique militaire et maritime.

Paris, Editions Blondel La Rougery.

— *See* Faenzi, Aldo: Esercizi fisici in rapporto al pilotaggio.

PILOTS. Getting them up in the air.

Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1198-1200, port.

— Pilota automatico trifase.

Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 551-557, ill.

— A quale quota massima può salire un aviatore senza pericolo?

Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 357-365, ill.

— See Deeds, Ed.: Mist in the pilot's eyes.

— See Myers, George: Training master pilots.

— See Preston, R. L.: How to become an air pilot.

— See United States Department of Commerce. Aeronautics Branch: Physical standards for airplane pilots (including standards for lighter-than-air pilots) and appendix of reference text. Rev. July 1, 1930.

— See Winters, S. R.: Testing psychological reaction time of future pilots.

PINCHETTI, B. See Bertuccioli, A., e B. Pinchetti: Ali nel cielo; antologia dell'aviazione.

PINKERTON, ROBERT M. Analytical determination of the load on a trailing edge flap.

National Advisory Committee for Aeronautics, Technical Notes No. 353, Oct. 28, 1930, Washington, October 1930, pp. 7, diagrs.

— Calibration and lag of a Friez type cup anemometer.

National Advisory Committee for Aeronautics, Technical Notes No. 341, June 3, 1930, Washington, June 1930, pp. 8, ill., diagrs., tabl.

— See Jacobs, Eastman N., John Stack, and Robert M. Pinkerton: Airfoil pressure distribution investigation in the variable density wind tunnel.

— See Jacobs, Eastman N., and Robert M. Pinkerton: Pressure distribution over a symmetrical airfoil section with trailing edge flap.

PIPES. See Satô-Kôzi: Kudo no tomonari ni tuite. (On the resonance of pipes with movable end).

PIPPARD, A. J. SUTTON, and W. E. FRANCIS. The stresses in a radially spoked wire wheel under loads applied to the rim.

Aer. Res. Comm., Rep. Mem., No. 1302, (Ae. 445), February 1930, London, 1930, pp. 43, ills., diagrs., tabls.

— The stresses in a radially spoked wire wheel under loads applied to the rim.

Part II.—Simplified formulae and curves.

Aer. Res. Comm., Rep. Mem., No. 1337, (Ae. 468), July 1930, London, 1930, pp. 10, ills., diagrs., tabls.

PIRATH, CARL. Les courants de transports aériens.

L'Aéronautique (L'Aéronautique marchande, 9me année, No. 100) 12me année, No. 131 (avril 1930), Paris, pp. 139-142, maps.

— Forschungsergebnisse des Verkehrswissenschaftlichen Instituts für Luftfahrt an der Technischen Hochschule Stuttgart.

München und Berlin, R. Oldenbourg, 1929, Heft 1, pp. 36, ills., tabls.; 1930, Heft 2, pp. 75, ills., tabls.

PIROZZI, ALFONSO. Le facilitazioni ai privati per l'acquisto dei velivoli e l'ordinamento di pubblica garanzia della nostra legislazione aeronautica.

Riv. Aeron., Anno 6, N. 1. (Gen. 1930), Roma, pp. 79-85.

PISTOLESI, E. Il funzionamenti dell'elica in una corrente non uniforme.

Atti della Società Italiana per il Progresso delle Scienze, Diciottesima riunione, Firenze—18-25 Settembre 1929, Vol. II, Roma, 1930, VIII, p. 111.
(Vedi il periodico "L'Aerotecnica," Nov. 1929).

- PISTOLESI, E.** Il funzionamento dell'elica in un vento non uniforme.
Atti della Società Italiana per il Progresso della Scienze, Dicottesima riunione, Firenze—18-25 Settembre 1929, Vol. II, Roma, 1930, VIII, pp. 111-112.
- Lo studio cinematografico dei fenomeni idrodinamici.
Atti della Società Italiana per il Progresso della Scienze, Dicottesima riunione, Firenze, 18-25 Settembre 1929, Vol. II, Roma, 1930, VIII, pp. 112-121, ill.
- Sul calcolo di resistenza delle eliche.
L'Aerotecnica, Vol. 10, N. 1-2 (Gen -Feb. 1930), (Anno VIII), Roma, pp. 12-28.
- PISTONS.** See Alloys: New low expansion aluminum piston alloy.
- PITCAIRN, HAROLD F.** The autogyro: Its characteristics and accomplishments.
Journ. Frankl. Inst., Vol. 209, No. 5 (May 1930), Philadelphia, Pa., p. 571.
- PITTONI, MARIO.** L' a b c dell'aviazione.
Roma, tip. Regionale, 1930, pp. 77.
- PIVOTS.** See Jaquierod, A., L. Defossez, and H. Mügeli: Experimental research on the friction of pivots.
- PLANCK, CHARLES E.** Cruising the Great Lakes by air.
National Aeronautic Magazine, Vol. 8, No. 10 (Oct. 1930), Washington, pp. 39-40, 49, 52, ill.
- PLANIOL, A.** See Huguenard, E., A. Magnan et A. Planiol: Aérologie.—Sur une méthode de mesure de la turbulence de l'atmosphère.
- PLATH, ERICH. II.** Beitrag zur Vereinfachung statischer Rechnungen an Tragflügel-Holmen.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 6. Heft (28. März 1930), München, pp. 138-141, diagrs.
- Vom elften Segelflug-Wettbewerb auf der Rhön.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 44 (1. Nov. 1930), Berlin, pp. 1520-1521.
- PLATZEK, A.** Der "Luftfahrtverein Ostmark," Frankfurt a. d. Oder.
Luftschau, 3. Jahrg., Nr. 22 (24. Nov. 1930), Berlin, p. 171.
- PLEINES, WILHELM.** Bericht über das Ergebnis des amerikanischen Guggenheim-Sicherheits-Wettbewerbs.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 15. Heft (14. Aug. 1930), München, pp. 381-391, ills., diagrs., tabs.
- Die Flugzeugmuster des 2. Internationalen Rundfluges 1930.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 19. Heft (14. Okt. 1930), München, pp. 490-508, ills., tabs.
- Nietverfahren im Metallflugzeugbau.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 111-182, ills., diagrs., tabs.
Luftfahrtforschung, Band 7, Heft 1, 1930, München und Berlin, R. Oldenbourg, pp. 72, ills.
- Riveting in metal airplane construction.
National Advisory Committee for Aeronautics, Technical, Memorandums Nos. 596, 597, 598, 599, Dec. 11, 18, 23, 31, 1930, Washington, December 1930, pp. 42, 50, 28, 32, ills., tabs.
- Vergleichende Flugleistungsmessungen mit verschiedenen Flugzeugmustern.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 623-637, ills., diagrs., tabs.
Luftfahrtforschung, Band 6, Heft 5, 1930, München und Berlin, R. Oldenbourg.
- PLENDL, HANS.** Hochfrequenzsteuerung mit Gitterstrom.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 539-543, diagrs.

- PLENDL, HANS. *See* Handel, Paul von, Kurt Krüger und Hans Plendl: Quarsteuerung von Kurzwellen-Empfängern.
- *See* Krüger, Kurt, und Hans Plendl: Aufnahme der Strahlungskennlinien eines Kurzwellenrichtstrahlsystems der Grossfunkstelle Nauen im Flugzeug.
- PLESMAN, A. De commercieele luchtvaart.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 282-283, port.
- PLÜSCHOW, GÜNTHER. "Silberkondor über Feuerland. Mit Segelkutter und Flugzeug ins Reich meiner Träume."
Berlin, Verlag Ullstein, pp. 290.
- PLUGS, Aero engine accessories.
Air annual of the British Empire 1930, London, pp. 393-395, ill.
- PLUMMER, HARRY CHAPIN. Civil aviation in Sweden.
Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 54-55, 246, illus.
- PLYWOOD. *See* Gerngross, Otto: Über Sperrholzeime.
- *See* Kraemer, Otto: Der Einfluss der Leimung auf die Güte von Flugzeugsperrholz.
- *See* Schmidt, Erich K. O.: Overflächenschutz von Sperrholz.
- *See* Trayer, George William: The design of plywood webs for airplane wing beams.
- POCHHAMMER, B. Das Prallschiff als schnelles Postluftschiff.
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 182-184, ill.
- POESCHEL, JOHANNES. Luftfahrerdeutsch. Einheitliche deutsche Fachausdrücke in Luftfahrt und Flug.
Berlin, Verlag des Deutschen Sprachvereins. 1929, pp. 62.
- POIRIER, JULES. Les bombardements de Paris (1914-1918): avions, gothas, zeppelins, berthas.
Paris, Payot.
- POLAR exploration. *See* Andrée, Salomon August: Après la découverte de l'expédition polaire d'Andrée.
- *See* Andrée, Salomon August: The discovery of Andrée's body in the Arctic ice: The pioneer of polar aeronautics found after 33 years.
- *See* Arnesen, Odd: The Polar adventure; the "Italia" tragedy seen at close quarters.
- *See* Dinglinger: Luftfahrt und Polarforschung.
- *See* Joerg, Wolfgang Louis Gottfried: Brief history of polar exploration since the introduction of flying.
- *See* Nobile, Umberto: Im Luftschiff zum Nordpol.
- *See* Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia."
- *See* Wisting, Oscar: 16 år med Roald Amundsen; fra pol til pol.
- POLESINE, JOTTI DA BADIA. Ai margini della storia. Documenti sull' italianità di Blanchard.
Riv. Aeron., Anno 6, N. 9 (Sett. 1930), Roma, pp. 629-631, ill.
- Critica alla spedizione Nobile.
Milan, Libreria Aeronautica.
- La tragica avventura di Andrée.
Milano, Editore: Alberto Tedeschi, 1930-VIII, pp. 144, ill.

- POLESINE, JOTTI DA BADIA.** *See* Arban, Francesco: Documenti sopre le ascensioni aerostatiche eseguite da Francesco Arban acronauta di Lione, raccolti, ordinati e notati da Jotti da Badia Polesine.
- POLLARD, H. J.** Structures of metal aircraft.
Air annual of the British Empire 1930, London, pp. 273-291, ill.
- POLLOG, CARL HANNS.** German commercial aviation in 1929.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 59, 98, port.
- Hugo Junkers; ein als erfinder und pionier.
Dresden, C. Reissner, 1930, pp. 205, ill.
- POLYNOMIAL equations.** *See* Cowley, W. L., and Sylvia W. Skan: A study of polynomial equations.
- PONCELET, L.** L'exploitation de la photographie aérienne.
Conquête de l'Air, Vol. 26, No. 5 (May 1930), Paris, pp. 387-394, ill.
- PONTOONS.** *See* Van Dusen, William L.: How to build pontoons for gliders.
- PONTREMOLI, ALDO.** *See* Nobile, Umberto: Die vorbereitungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia."
- PORTER, CHARLES TALBOT.** Factors in the design of commercial airplanes.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., pp. 77-78.
- PORTER, L. C.** Thirty cent protection for a million dollar ship.
Aviation, Vol. 28, No. 19 (May 10, 1930), New York, pp. 940-942, ill.
- PORTLAND CEMENT ASSOCIATION.** Air terminals.
Chicago, Portland Cement Association, 1930, pp. 19, ill.
- PORTUGAL.** Civil aviation in Portugal.
Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, pp. 849-850.
- *See* Grey, Charles Grey: On the importance of Portugal.—I-IV.
- POST, AUGUSTUS.** Skycraft.
New York, London, Oxford University Press, 1930, pp. XIV, 276, ill.
- *See* Kneen, Orville Hayter, and Augustus Post: Flying for everybody.
- POTEZ.** Un nouvel avion intégralement métallique: le biplace Potez 39.
L'Aéronautique, 12me année, No. 129 (fев. 1930), Paris, pp. 43-48, ill.
- The "Potez 39" observation airplane (French). An all-metal high-wing two-seat monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 114, April 18, 1930, Washington, April 1930, p. 7, ill.
- POTTER, LESLIE S.** Air routes of the British Empire.
Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1545-1547, ill., maps.
- Cairo-Baghdad air mail route.
Aero Digest, Vol. 17, No. 1 (July 1930), New York, pp. 56-57, ill., map.
- Civil aviation in India.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1445-1447, map.
- POTTER, W. F.** Conditions affecting the aircraft export market.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 68, 240.
- POTURZYN, FISCHER V.** Minister Balbos Kammerrede. Ein Kapitel italienischer Luftpolitik.
Die Luftwacht, Heft 4, April 1930, Berlin, pp. 147-149.
- POWELL, HERBERT F.** *See* Warner, Edward P., and Herbert F. Powell: Meetings of the Aero Chamber at St. Louis. A report on the convening of the fuel and lubricant, accessory and material, flying school, and finance and insurance sections.

- POWERPLANT.** *See* Taub, Alex: Powerplant economics. Discussion of Alex Taub's semi-annual meeting paper.
- *See* Wilson, Eugene E.: Aircraft powerplants.
- POWERPLUS.** Powerplus (1927) Limited, London. Rotary displacement blowers for aircraft engines.
Air annual of the British Empire, 1930, London, pp. 396-398, ill.
- PRANDTL, LUDWIG.** Beobachtungen über dynamischen Segelflug.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 5. Heft (14. März 1930), München, p. 116, ill.
- PRANDTL, Ludwig, und A. BETZ.** Ergebnisse der Aerodynamischen Versuchsanstalt zu Göttingen.
München, R. Oldenbourg, 1925, 1. Lieferung, pp. 144, illus., tabls.; 1923, 2. Lieferung, pp. 84, illus. (Zweiter unveränd. Abdruck, 1929); 3. Lieferung, 1927, pp. 172, illus., tabls.
- PRATT, JOHN E.** Glider training in Germany.
Western Flying, Vol. 7, No. 4 (April 1930), Los Angeles, Calif., pp. 50-51, 156, illus.
- PRENTICE, JAMES.** The influence of aircraft design on the trend of motor vehicle construction.
U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 44-45.
- "The magic city" nominated for air capital.
U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, p. 28.
- PREPOSITI, CLEMENTE.** Come nacque l'offensiva aerea nella guerra del mondo (il bombardamento).
Riv. Aeron., Anno 6, N. 11 (Nov. 1930), Roma, pp. 225-236.
- La disfatta degli "Zepplin" nella guerra del mondo.
Riv. Aeron., Anno 6, N. 4 (Aprile 1930), Roma, pp. 57-73, ill.
- PRESURE.** *See* Rhode, Richard V.: Die Lastverteilung über Höhen- und Seitenleitwerk eines F 6 C-4 Jagflugzeuges bei aussergewöhnlichen Flugbewegungen.
- PRESSURE indicators.** *See* Spanogle, J. A., and John H. Collins: A balanced diaphragm type of maximum cylinder pressure indicator.
- PRESSURE plotting.** *See* Lock, C. N. H., and F. C. Johansen: Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.
- PRESTON, R. L.** How to become an air pilot, with a foreword by the late Air Vice-Marshal Sir Sefton Brancker . . . a simple explanation of how to obtain a flying license, and various information for the private owner.
London, S. Low, Marston & Co., Ltd., [1930?], pp. 124.
- PRIS, R.** L'interaction des mâts dans les essais de maquettes.
L'Aéronautique, (l'Aérotechnique, 8e année, No. 93), 12me année, No. 136 (Sept. 1930), Paris, pp. 333-336, ill., diagrs.
- PRIVATE flying.** *See* Kahn, Roger Wolfe: The private flier.
- PROBYN, H. M.** Flying and maintenance from the owner's point of view.
Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 146-169.
- PRODUCTION.** *See* Doane, Robert R.: Aircraft demand past, present, and future.
- *See* Tarantini, Lello: La produzione aeronautica per l'aviazione civile negli Stati Uniti d'America.
- *See* United States: La production américaine en 1929.
- PROFILES.** *See* Steinitz, Otto: Knick- und Biegefestigkeit von Hohl-Profilen.
- PROPELLERS.** Automatische Propeller-Fräsmaschine im Propellerwerk Gustav Schwarz G. m. b. H., Berlin-Waidmannslust.
Deutsche Luftfahrt, 34. Jahrg., Heft 12, 1930, Berlin-Charlottenburg, p. 303, ill.

PROPELLERS. Instructions for assembly of detachable blade propellers.

Air Corps Information Circular, Vol. 7, No. 648 (March 1, 1930), Washington, United States Government Printing Office 1930, pp. 5, illus.
Air Corps Technical Report No. 3169.

- Reversible variable pitch propeller.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, p. 112, illus.
- See Bréguet, Louis: *Les hélices de sustentation*.
- See Carafoli, Elie: *Considerazioni teoriche sul "Girante a paletta."*
- See Caria, Ugo de: Counter-propeller.
- See Douglas, G. P., W. G. A. Perring, and R. A. Fairthorne: Wind tunnel tests with high tip speed airscrews. Experimental investigation of blade twist under load.
- See Dryden, H. L., and P. S. Ballif: The characteristics of two-blade propeller fans.
- See Fairey: The Fairey metal airscrew (Reed license).
- See Flackbart, O., and G. Kröber: Experimental investigation of aircraft propellers exposed to oblique air currents.
- See Flachsbart, O., und G. Kroeber. *Experimentelle Untersuchungen an schraeg angeblasenen Schraubenpropellern*.
- See Fuscaldo: *l'hélice métallique Fuscaldo à pas variable en vol*.
- See Geiger, Jos.: *Vibrations de torsion des vilebrequens et vibrations de flexion des pales d'hélices*.
- See Gloster: *Gloster-Hele-Shaw-Beacham variable pitch airscrew*.
- See Jennings, W. G.: Full scale experiments on high tip speed airscrews. Comparative performance trials of three airscrews of different sections.
- See Kulebakin, V. S.: *Riflessione luminosa delle eliche in rotazione*.
- See L., P.: *L'hélice Benuzzi à pales automatiquement déformables*.
- See Ledoux, Ch.; *Procédé et appareil pour étudier les déformations des hélices aériennes*.
- See Léglise, Pierre: Ratier metal propeller with pitch variable in flight.
- See Leitner-Watts: *Airscrews. The Leitner-Watts hollow steel airscrews*.
- See Lesley, E. P.: Test of an adjustable pitch model propeller at four blade settings.
- See Liebers, Frits: Contribution to the theory of propeller vibrations.
- See Liebers, Fritz: *Resonanzschwingungen von Luftschrauben*.
- See Lock, C. N. H., and A R. Collar: Exploration of the flow near the screw proposed for the N. P. L. compressed air tunnel.
- See Lock, C. N. H., and F. C. Johansen: Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.
- See Moriya, T.: On the aerodynamical interference of propeller blades.
- See Neuendorff, Hans: *Das Aufmessen von Luftschrauben*.
- See Pillard, M.: *L' amelioration des avions multimoteurs par l'helice. L'hélice roue libre*.
- See Pillard, M.: Improving the performance of multi-engined airplanes by means of idling propellers—The “Free-wheel” propeller.

- PROPELLERS. *See* Pistolesi, E.: Il funzionamento dell'elica in una corrente non uniforme.
- *See* Pistolesi, E: Il funzionamento dell'elica in un vento non uniforme.
- *See* Pistolesi, E.: Sul calcolo di resistenza delle eliche.
- *See* Roy, Maurice: Contribution à la théorie l'hélice propulsive.
- *See* Roy, Maurice: Propulsion by reaction.
- *See* Rysky, Carlo de: Description de l'hélice Benuzzi.
- *See* Schwam, Morton: Static balancing of propeller blades.
- *See* Serragli, G.: Considerazioni sul momento laterale di un'elica autorotante di costruzione rigida.
- *See* Serragli, G.: Teoria dell'elica in autorotazione. Ricerca delle condizioni necessarie per ottenere il massimo effetto necessarie.
- *See* Stroboglow: Moving propeller made to appear motionless.
- *See* United States Department of Commerce. Aeronautics Branch: Airworthiness requirements of air commerce regulations for engines and propellers.
- *See* Watter, Michael: Joukowski's vortex theory of propellers.
- *See* Webb, L. D.: New propeller construction methods.
- *See* Weick, Fred Ernest: Aircraft and propeller design.
- *See* Weick, Fred E.: The effect of reduction gearing on propeller-body interference as shown by full scale wind tunnel tests.
- *See* Weick, Fred E.: Full scale wind tunnel tests on several metal propellers having different blade forms.
- *See* Weick, Fred E.: Full scale wind tunnel tests with a series of propellers of different diameters on a single fuselage.
- *See* Weick, Fred E.: Working charts for the selection of aluminum alloy propellers of a standard form to operate with various aircraft engines and bodies.
- *See* Weinig, Fritz: Die Auswertung von Propellerversuchsfügen.
- *See* Weinig, Fritz: Bemerkungen über die Nachprüfung von Luftschauben durch optische Hilfsmittel.
- *See* Weinig, Fritz: Der Einfluss des Flugwerks auf den Vortriebswirkungsgrad der Luftschaube.
- *See* Wilson, Eugene E.: Radials, air-cooled, for dependability—controllable-pitch propellers—magnesium soon.
- *See* Wood, Donald H.; Full scale wind tunnel tests of a propeller with the diameter changed by cutting off the blade tips.
- *See* Wood, R. McKinnon, and W. G. A. Perring: Stresses and strains in airscrews with particular reference to twist.
- PROPELLION. *See* Roy, Maurice: Propulsion by reaction.
- PROSPECTING. *See* Kennedy, Mel S.: Prospecting by air.
- PUGNO-VANONI, E. *See* Nobile, Umberto: Die vorberietungen und die wissenschaftlichen ergebnisse der polarexpedition der "Italia."

PULLEY bracket. *See* Atkin, E. H.: In the drawing office. A drawing office problem.

PULLEYS. *See* Rodgers, R.: In the drawing office. That pulley problem.

PUMPS. *See* Castagna, A.: Prove su di una pompa ad ingranaggi.

PURDIN, W. E. *See* Jones, E. T., C. E. Maitland, and W. E. Purdin: Stalled flight tests of a Moth fitted with auto-control slots and interceptors.

PUTNAM, GEORGE PALMERS Andrée; the record of a tragic adventure.
New York, Brewer & Warren, Inc., 1930, pp. 239, ills.

PUTNAM, LAWSON L., and FRANKLIN D. MEYERS. Accounting for aviation operators. Purpose and scope—books and forms.

Airway Age, Vol. 11, Nos. 3-7 (March-July 1930), New York, pp. 348-352, 500-503, 660-664, 790-795, 941-943.

PUTNAM, LAWSON L. What it is worth to them?

Airway Age, Vo. 11, No. 11 (Nov. 1930), New York, pp. 1463-1465.

PUTNAM, RUSSELL L. Selling airplanes to business houses.
Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 82, 250.

PYE, D. R. The evolution of the modern aero engine.

Aeroplane, Vol. 38, No. 13 (March 26, 1930), London, pp. 521-528, ill.

PYE, ERNEST T. The Capital's chameleon beauty.

National Aeronautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 27, 31, 34, ill.

— Where memories ride the wind.

National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 17, 21, 24, 60.

PYLE-NATIONAL COMPANY. *See* Beacons: Pyle-National electric code beacon.

Q

QUESTION MARK. The transatlantic Brequet "Question Mark." Some notes on the "Long-Distance" machine of Costes and Bellonte.

Flight, No. 1133, Vol. 22, No. 37 (Sept. 12, 1930), London, pp. 1015-1017, ills.

QUINN, J. J. Airships to fly Pacific.

Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Cal., pp. 102, 104, ills.

R

RABEZZANA, HECTOR. Spark plugs for aircraft.

Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, p. 102, ills.

RACING. *See* Jennings, W. G.: "Cornering" at high speeds.

RACKWITZ, ERICH, und ALEXANDER VON PHILIPPovich. Anforderungen an Kraftstoffe für Flugzeuge und Kraftwagen im Ausland.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 320-325, diagrs., tabls.

— Beurteilung von Flugmotorenkraftstoffen in Deutschland.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 315-319, ills., diagrs., tabls.

— Das Kalteverhalten von Kraftstoffen zur Verwendung in Luftfahrzeugen.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 326-334, ills., diagrs., tabls.

— Der Schwefelgehalt von Kraftstoffen und seine Bedeutung für den Flugbetrieb.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 335-340, tabls.

RADCLIFFE, FRANK. Elements of detail design.

Journ. Roy. Aer. Soc., Vol. 34, No. 239 (Nov. 1930), London, pp. 936-959, ills., diagrs.

RADCLIFFE, FRANK. Technical features of the air mail.

The Aircraft Engineer, Flight Engineering Section, Suppl. to Nos. 1131, 1135, 1140, 1144, 1148, Vol. 22, Nos. 35, 39, 44, 48, 52 (Aug. 29, Sept. 26, Oct. 31, Nov. 28, Dec. 26, 1930), London, pp. (972d-972e), 60-61, (1068d-1068f), 68-70, (1192a-1192b), 73-74, (1388a-1388d), 81-84, (1484c-1484f), 91-94, ills., diagrs.

RADIATORS. See Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel experiments on steam condensing radiators.

— See Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel tests on Gloster and Supermarine wing radiators.

RADIO. Development of aircraft radio receivers.

Boonton, N. J., Aircraft Radio Corporation, [1929], pp. 22, ill.

— Navigazione aerea per radio.

Riv. Aeron., Anno 6, N. 2 (Feb. 1930) Roma, pp. 334-341, ill.

— La navigazione fisica per vie aeree e marittime.

La Radio Industria, 30 Sett. 1930, Roma, pp. 33-34.

— Progress in aeronautic radio research.

U. S. Department of Commerce, Technical News Bulletin of the Bureau of Standards, Washington, November 1930, No. 163, p. 107.

Reviewed: Journ. Amer. Inst. Electrical Engineers, Vol. 49, No. 12 (Dec. 1930), New York.

— La radio Marconi en el vuelo trasatlántico del comandante Kingsford Smith.

Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 28-29.

— See Allen, Edmund T.: Safety in aerial navigation through radio communication.

— See Auger, André: L'utilisation de l'onde courte à bord des aéronefs.

— See Blanchard, J.: Utilisation des procédés Loth pour le guidage des avions par ondes hertziennes. II.—Point de vue et réfutations de la S. I. P. L.

— See Bureau of Standards: Aeronautic radio research at the Bureau of Standards.

— See Dellinger, John Howard, H. Diamond, and F. W. Dunmore: Development of the visual type airway radiobeacon system.

— See Diamond, Harry: Applying the visual-modulation type radio range to the airways.

— See Diamond, Harry, and F. G. Gardner: Engine-ignition shielding for radio reception in aircraft.

— See Diamond, Harry, and F. G. Kear: A 12-course radio range for guiding aircraft with tuned reed visual indicator.

— See Drake, G. H., and A. W. Parkes, jr.: The shielding effect of N. A. C. A. cowlings.

— See Dunmore, Francis Winkley: A tuned-reed course indicator for the four and twelve course aircraft radio range.

— See Eddy, Myron F.: Radio for aircraft.

— See Everett, G. E.: T. A. T.-Maddux two-way radio communication.

— See Fassbender, Heinrich, und Franz Eisner: Der gegenwärtige Stand der Technik und der Betriebsorganisation des Deutschen Flugfunkwesens.

— See Fassbender, Heinrich, und Paul von Handel: Neuere Versuche über die Ausbreitung von ultrakurzen Wellen.

- RADIO.** *See* Fassbender, Heinrich, Franz Eisner und Georg Kurlbaum: Untersuchung über die Ausbreitungsdämpfung elektromagnetischer Wellen und die Reichweiten drahtloser Stationen im Wellenbereich 200 bis 2000 m.
- *See* Fassbender, Heinrich: Versuche mit ultrakurzen Wellen im Flugzeugverkehr.
- *See* Fucini, Mario: Il combattimento aereo e la radiotelefonia.
- *See* Gloeckner, M. H.: Über Flugfunkpeilungen.
- *See* Grey, Charles Grey: The trailing antenna.
- *See* Handel, Paul von, Kurt Krüger und Hans Plendl: Quarsteuerung von Kurzwellen-Emfängern.
- *See* Handel, Paul von: Untersuchungen über quarzgesteuerte Schwingvorgänge.
- *See* Hoover, Herbert, jr.: Blind flying and radio.
- *See* Hoover, Herbert, jr.: The function of aircraft radio.
- *See* Hoover, Herbert, jr.: Long-wave radio receivers in aircraft.
- *See* Hoover, Herbert, jr.: Radio in air transport operation.
- *See* Hoover, Herbert, jr.: Radio on the world's airlines.
- *See* Hoover, Herbert, jr.: Radio reception versus ignition interference.
- *See* Hoover, Herbert, jr.: Two-way radio communication in air transport service.
- *See* Kear, Frank Gregg, and W. E. Jackson: Applying the radio range to the airways.
- *See* Kennedy, Frank M.: Keeping in touch.
- *See* Krüger, Kurt, und Hans Plendl: Aufnahme der Strahlungskennlinien eines Kurzwellenrichtstrahlsystems der Grossfunkstelle Nauen im Flugzeug.
- *See* Krüger, Kurt: Über Kurzwellenempfang in beweglichen Stationen.
- *See* Manisco, Giovanni: La radio in aviazione.
- *See* Montagnes, James: Radio communication in the sub-Arctic.
- *See* Plendl, Hans: Hochfrequenzsteuerung mit Gitterstrom.
- *See* Sibley, Eugene: Aeronautical radio communications.
- *See* Sinclair, Duncan: Student instruction by radio.
- *See* Sudeck, Günther: Über die Sendecharakteristik von Flugzeugscheppantennen.
- *See* United States Hydrographic office: Radio aids to navigation 1930. Including details of radio-compass stations, radiobeacons, weather bulletins, storm and navigational warnings, time signals, etc.
- *See* Verdurand, A.: Utilisation des procédés Loth pour le guidage des avoines par ondes hertziennes. I.—Étude critique des procédés Loth pour la navigation aérienne.
- RADIO beacons.** *See* Clériot Marcel: Le radiophare de Bobigny pour la navigation aérienne.
- *See* Diamond, Harry, and Francis Winkley Dunmore: A radiobeacon and receiving system for blind landing of aircraft.

- RADIO beacons. *See* Hingsburg, F. Č.: Air navigation facilities.
- RAFFAELLI, ITALO. Motori d'aviazione suralimentati.
Riv. Aeron., Anno 6, N. 7 (Luglio 1930), Roma, pp. 1-20, ill., diagrs.
- RAGSDALE, E. J. W. Results of research in stainless steel.
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 97-98.
- RAIMONDI, EMANUELE. Lezioni sulle omografie vettoriali.
Roma, Litografia del Genio Civile, 1930-VIII.
- Un nuovo fenomeno di idro-aero-dinamica.
Atti della Società Italiana per il Progresso delle Scienze, Diciottesima riunione, Firenze—18-25 Settembre 1929, Vol. II, Roma, 1930, VIII, pp. 121-129, ill.
- On two noteworthy vectorial formulas for use in aerohydrodynamics.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), Roma, p. 976.
- Risultati sperimentali relativi ad un nuovo fenomeno di aerodinamica.
Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 1-19, diagrs., tabls.
- Sopra due notevoli formole vettoriali che trovano impiego in idro-aerodinamica.
L'Aerotecnica, Vol. 10, N. 11-12 (Nov.-Dic. 1930), (Anno IX), Roma, pp. 831-849, ill.
- RAMANATHAN, K. R. Discussion of results of sounding balloon ascents at Agra during the period July 1925 to March 1928 and some allied questions.
Memoirs of the Indian Meteorological Department, Vol. 25, Part V, Calcutta, Government of India Central Publication branch, 1930, pp. 163-191, diagrs., tabls.
- India meteorological Department. Upper air data 1928. Part 14. Sounding balloon data.
Calcutta, Government of India, Central Publication Branch, 1930, pp. [ii], 559-585.
- RAMANEFFEKT. *See* Schaefer, Clemens, und Frank Matossi: Der Ramaneffekt.
- RAMAT, GEORGES. Bréviaire du mécanicien d'aérodrome; utilisation-entretien-verification-réparation-rélage des moteurs et des avions.
Paris, Charles-Lavauzelle et Cie, 1930, pp. 428, ill.
- RAMSEY LOGAN C. Aviation in commercial aviation.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 73-74, 236, ills.
- The distinction between "Blind" flying and instrument flying.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 26-27, 68, port.
- The navigation of aircraft.
New York, The Ronald Press Company, 1929, pp. iv, 237, ill., 1930, Simpkin.
- RANGE. *See* Fairey, C. R.: Range of aircraft.
- *See* Maitland, C. E., and A. E. Woodward Nutt: Flight tests on the variation of the range of an aircraft with speed and height.
- *See* Nelson, William: Flying boat ranges as influenced by size.
- RASOR, W. W. Graf Zeppelin: Queen of the air.
Pan American Magazine, Vol. 42 (Sept. 1929), Washington, D. C., pp. 5-7, ill.
- RAUBE, W. C. Goodyear-Zeppelin hangar doors.
Aviation, Vol. 29, No. 4 (October 1930), New York, p. 246, ills.
- RAVELLI, ERMANNO. Studio di alcune spolette a percussione per bombe.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 245-262, ill.
- RAVENS. *See* Evershed, Sydney: Ravens flying upside down.
- RAY, JAMES G. Flying an autogiro. James G. Ray feels that learning to fly an autogiro offers no particular difficulties.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1427-1429, ill.

- REAGAN, L. S.** Heating airport buildings.
Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, pp. 98, 102, illus.
- REALE AERO CLUB d' ITALIA.** See Grasso, Renato: La carta aeronautica del R. Aero Club d' Italia.
- REAL estate.** See Pakas, Manfred A.: The real estate aspects of airports.
- REBUFFET, P.** The electrodynamometric balance of the small wind tunnel of the French service of aeronautical research.
National Advisory Committee for Aeronautics, Technical Memorandums No. 556, March 17, 1930, Washington, March 1930, pp. 10, illus.
- RECORDING.** See Küssner, Hans Georg: Optisch-photographische Formänderungsmessungen an Luftfahrzeugen.
- Tabelle dei records mondiali.
Riv. Aeron., Anno 6, N. 12 (Dic. 1930), Roma, pp. 569-580.
- See Everling, E.: Flugrekorde.
- See France: Deux nouveaux records rentrent en France.
- See R 100: The fastest airship in the world?
- REDMAN, BEN RAY.** Down in flames.
New York, Payson Clarke, Ltd., 1930, pp. 296.
- REDRUP.** Il motore assiale Redrup.
Riv. Aeron., Anno 6, N. 6 (Giugno 1930), Roma, pp. 550-553, ill.
- The Redrup-lever axial engine.
Aeroplane, Vol. 38, No. 7 (Feb. 12, 1930), London, pp. 262-264, ill.
- REED, S. A.** See Fairey: The Fairey metal airscrew (Reed License).
- REEVES, EARL.** Aviation's place in tomorrow's business.
New York City, B. C. Forbes Publishing Company, 1930, pp. xv, 323, illus.
- RE-FUELLING.** Re-fuelling in the air.
Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1175, ill.
- REGISTRO ITALIANO NAVALE e AERONAUTICO.** Regolamento per il servizio aeronautico. Edito a cura del "Registro Italiano Navale e Aeronautico".
Roma, Tipografia G. Lanzi, 1930-VIII, p. 39.
- REHBOCK, A.** See Taylor, C. Fayette, and A. Rehbock: Rate of heat transfer from finned metal surfaces.
- REID, ELLIOTT G.** How fast is maximum speed?
Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 86-91, illus., diagrs.
- REIF, HANS.** Die Versicherung im österreichischen Luftverkehr.
Deutsche Luftfahrt, 34. Jahrg., Heft 4/5, 1930, Berlin, pp. 117-118.
- REISSNER, H.** See Bergmann, Stefan, und H. Reissner: Neuere Problems aus der Flugzeugstatik. Über die Knickung von Wellblechstreifen bei Schubbeanspruchung.
- REMONDIERE.** Les dirigeables français.
Revue des Forces Aériennes, No. 8, mars 1930, Paris, p. 321-334, ill.
- RENAUDEL, PIERRE.** Ce qu'on pense en France des résultats obtenus par le ministère de l'air.
Aéronautica, Vol. 4, No. 1 (Jan. 1930), Arnhem, pp. 4, 6.
- RENAULT.** See Cailleux, J.: Le moteur Renault 95 CV 4 cylinders en ligne.
- RENFRO, ROBERT B.** The future of the airship. An interview with P. W. Litchfield.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, pp. 62-63, 98, illus.

RENFRO, ROBERT B. Juan de la Cierva's windmill.

The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 30-31, ill.

RENGAW. Aids to night-flying.

The Aeroplane, Vol. 39, No. 18 (Oct 29, 1930), London, pp. 990-992, ill.

REPENTHIN, WALTER. Investigation of the variations in the velocity of the air flow about a wing profile.

National Advisory Committee for Aeronautics, Technical Memorandums No. 575, July 24, 1930, Washington, July 1930, p. 18, ill.

RESEARCH. Flight research and radical design.

Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 251-253.

— See Bourne, R.: Air survey within the Empire. A summary of the general conclusions reached in recent research.

RESISTANCE. See Jones, E. T.: The full scale determination of the lateral resistance derivatives of the Bristol fighter aeroplane. Part III.—The determination of the rate of roll derivatives.

— See Sakakibara, Sigeiki: Further note on the existence of the transverse eddy resistance.

— See Tomotika, Susumu: On the resistance experienced by a cylinder moving in a channel of finite breadth.

REYNEKER, F. H. De luchtvaart in 1928.

Het Vliegveld, 13de Jaarg., No. 1 (Jan. 1929), Amsterdam, pp. 3-4.

— Het nieuwe toestel voor het starten van vliegbooten aan boord van de mailboot "Ile de France".

Het Vliegveld, 13de Jaarg., No. 5 (Mei 1929), Amsterdam, pp. 178-179, ill.

— Het nieuwe verkeersvliegtuig B. M. W. 20A.

Het Vliegveld, 13de Jaarg., No. 1 (Jan. 1929), Amsterdam, pp. 12-14, ill.

— De vorming van ijs op blootgestelde delen van een vliegtuig in de vlucht. Door Thomas Carroll en Wm. H. McAvoy.

Het Vliegveld, 13de Jaarg., No. 3 (Maart 1929), Amsterdam, pp. 84-86, ill.

REYNOLDS, ALFRED S. Personal contact in instruction.

U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, p. 44, port.

RHEINSTROM, CHARLES A. Newspapers and airplane accidents.

Aviation, Vol. 28, No. 13 (March 29, 1930), New York, pp. 640-641.

RHENSTROM, E. G. Basic forms for operations.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 78-79, 242, ill.

RHODE, RICHARD V. Die Lastverteilung über Höhen- und Seitenleitwerk eines F 6 C-4 Jagdflugzeuges bei aussergewöhnlichen Flugbewegungen.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 14. Heft (28. Juli 1930), München, pp. 353-357, ill. Bearbeitet von F. Hoffmann, Berlin-Adlershof.

— Pressure distribution on the tail surfaces of a PW-9 pursuit airplane in flight.

National Advisory Committee for Aeronautics, Technical Notes No. 337, April 30, 1930, Washington, April 1930, pp. 13, ill., diagrs., tabs.

RHODE, RICHARD V., and EUGENE E. LUNDQUIST. The pressure distribution over a Douglas wing tip on a biplane in flight.

National Advisory Committee for Aeronautics, Technical Notes No. 347, Aug. 26, 1930, Washington, August 1930, pp. 19, ill., diagrs., tabs.

RHÖN. Bericht über de 11. Rhön-Segelflug-Wett-bewerb 1930.

Luftschau, 3. Jahrg., Nr. 23 (10. Dez. 1930), Berlin, p. 182.

- RHON.** Vom Elften Segelflug-Wettbewerb auf der Rhön.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 44 (1. Nov. 1930), Berlin, pp. 1520-1521.
- See Ashwell-Cooke, J. R.: Gliding. The Rhön competitions.
- See Georgii, Walter: Beobachtungsergebnisse aerologischer Flugzeugaufstiege in Darmstadt und auf der Wasserkuppe in der Rhön Dezember 1927-Dezember 1928.
- See Georgii, Walter: Der 40. Rhön-Segelflug-Wettbewerb auf der Wasserkuppe i. Rh. 1929.
- See Kronfeld, Robert, und W. Kühnert: Die Segelflugexpedition des Forschungsinstitutes der Rhön-Rossittengesellschaft auf die Rax-Alpe (Osterreich) vom 15. Januar bis 15. Februar 1929.
- See Lippisch, Alexander: The 1929 Rhön soaring-flight contest.
- See Lippisch, Alexander: Technischer Bericht des Rhön-Segelflug-Wettbewerbs.
- See Schreiber, D.: Die Bilanz der "Rhön 1930."
- See Ysenburg, Graf: Bericht über Schulungs-Wettbewerb des 10. Rhön-Segelflug-Wettbewerbes 1929.
- RIABOUCHINSKY, D.** Aperçus théoriques sur la mécanique des fluides.
Service Technique de l'Aéronautique, Bulletin technique No. 67, Paris.
- RICARDO, H. R.** The aero engine. Its development and progress.
Automobile Engineer, (July 1930), London.
- The development and progress of the aero engine.
Journ. Roy. Aer. Soc., Vol. 34, No. 240 (Dec. 1930), London, pp. 1000-1015, diagrs.
- The supercharging and compounding of aero engines.
Engineering, Vol. 129, No. 3360 (June 6, 1930), London, pp. 738-739.
- See Wilbur Wright Memorial Lecture: The Wilbur Wright Memorial Lecture. (Lecture by H. R. Ricardo on aircraft engine development).
- RICE, E. D.** The autogiro.
Engineers and Engineering, Vol. 47, No. 2 (Feb. 1930), Philadelphia, pp. 25-28, ill.
- RICHARDSON, J. M.** Landing on one wheel.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 52-53.
- RICHARDSON, WILLIAM.** See Bohrer, Walt: Reseeding by air—How Doc and Bill do it.
- RICHFIELD.** See Marshall, Fred F.: Richfield host to foreign speed flyers.
- RICHMOND, V. C.** The development of rigid-airship construction.
Engineering, Vol. 130, Nos. 3374, 3376 (Sept. 12, 26, 1930), London, pp. 341-344, 412-414, ill.
- RICHTER, PAUL E.** See McOmie, Margaret: Selling flight training.
- RICHTHOFEN, MANFIELD VON.** See Gibbons, Floyd: The red knight of Germany.
- RICKENBACKER, EDWARD V.** Swift as eagles, and as free.
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, pp. 24-25.
- See Hoover, Herbert: The President presents Medal of Honor to Rickenbacker.
- RIDLEY, KENNETH F.** An investigation of airplane landing speeds.
National Advisory Committee for Aeronautics, Technical Notes No. 349, Sept. 30, 1930, Washington, September 1930, pp. 39, ill., diagrs., tabls.
- RIGGING.** See Arens: De Arens overbrenging.

- RING, LAURENCE ELMER.** Airports in Canada and Newfoundland.
 Bulletin, U. S. Bureau Foreign & Domestic Commerce, Trade Information, No. 716, 1930,
 Washington, pp. 46.
- Airports in Italy.
 U. S. Bureau of Foreign and Domestic Commerce, Department of Commerce, Trade In-
 formation Bulletin No. 721, Washington, Government Printing Office, 1930, pp. 59, tabs.
- RINGNALDA, MARK.** Dusting—An enlarged market for airplanes.
 Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Cal., pp. 53, 152, illus.
- RISACK, M.** Étude théorique et expérimentale d'une classede profils à centre
 de poussée constant.
 Bulletin, Service Technique de l'Aéronautique, No. 9, March, 1930, Brussels, pp. 3-22, ill.
- RIVETED joints.** See Hilbes, W.: Riveted joints in thin plates.
- RIVETING.** See Pleines, Wilhelm: Nietverfahren im Metallflugzeugbau.
 — See Pleines, Wilhelm: Riveting in metal airplane construction.
- ROBERTS, O. F. T.** On radiative diffusion in the atmosphere.
 Proceedings of the Royal Society of Edinburgh, Session 1929-30, Vol. 50, Part III, Edinburgh,
 pp. 225-242, ill.
- ROBERTSON, F. A. DE V.** Air transport in the British Empire.
 Air annual of the British Empire 1930, London, pp. 33-39.
- No. 2 army (co-operation) squadron, Royal Air Force.
 Flight, No. 1146, Vol. 22, No. 51 (Dec. 19, 1930), London, pp. 1453-1456, illus.
- No. 43 (Fighter) squadron.
 Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, pp. 1042-1047, illus.
- No. 601 (County of London) (Bomber) squadron, A. A. F.
 Flight, No. 1129, Vol. 22, No. 33 (Aug. 15, 1930), London, pp. 922-925, illus.
- R. A. F. exercises. Blue Andover versus Red Cranwell.
 Flight, No. 1129, 1130, Vol. 22, No. 33, 34 (Aug. 15, 22, 1930), London, pp. 933, 943-948, illus., map.
- ROBINSON.** The Robinson "Redwing Mark II." Armstrong-Siddeley "Genet"
 engine.
 Flight, No. 1146, Vol. 22, No. 51 (Dec. 19, 1930), London, pp. 1457-1460, illus.
- ROBINSON, RUSSEL G.** See Mossman, Ralph W., and Russell G. Robinson:
 Bending tests of metal monocoque fuselage construction.
- ROBOROUGH.** Roborough aerodrome opened.
 Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, p. 1088.
- ROBUR.** Demonstratie met de "Robur" parachute van Lundholm.
 Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 308-310, ill.
- The "Robur" parachute.
 Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, p. 1479, illus.
- See P. L.: Het "Robur" valscherf.
- ROCCA, CARLO.** La navigazione aerea dal punto di vista economico; opera
 insignita col primo premio dall'Istituto Centrale di Statistica del Regno
 d'Italia; prefazione del prof. ing. Filippo Tajani.
 Milano, U. Hoepli, 1930, pp. xii, 301, illus., diagrs., map.
- ROCHEVILLE, H. D.** See Wings: Variable camber wing.
- ROCHFORD, DANIEL.** Blind flying instruction. Methods used in instructing
 Pan American Airways pilots.
 Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 58-59, illus.
- Joining the Americas by air.
 Pan American Magazine, Vol. 43, No. 5 (Nov. 1930), Washington, pp. 316-322.

ROCKETS. *See* Roy, Maurice: Propulsion by reaction.

— *See* Rynin, N. A.: Raketen und Vortriebsmittel direkter Reaktion. Geschichte, Theorie und Technik.

— *See* Valier, Max: Raketenfahrt.

— *See* Ziolkowsky, K. E.: Fernflug- und Mehrfachraketen.

ROCKWELL test. *See* Knerr, Horace: Identification of aircraft tubing by Rockwell test.

RÖDER, HERMANN. Wirtschaftliche Luftfahrt.

Dresden, Verlag O. Herm. Horisch, 1929, pp. 285.

— Zur Frage der Distanz im Handelsluftverkehr.

Deutsche Luftfahrt, 34. Jahrg., Heft 12, 1930, Berlin-Charlottenburg, pp. 302-303.

RODGER, R. In the drawing office. Lever gearing.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1126, 1131, Vol. 22, No. 30, 35, (July 25, Aug. 29, 1930), London, pp. (838d-838g) 972f-972g, 52-55, 62-63, illus., tabs.

— In the drawing office. That pulley problem.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, pp. (1192d-1192e), 76-77, illus.

ROGERS, LEIGHTON W. Aviation's contribution to international trade. Planes make new markets and offer access to old ones.

Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 687-689, ill.

— Buying American aircraft in foreign lands.

Aero Digest, Vol. 16, No. 6 (June 1930), New York, pp. 58, 190.

— Competiton in the world market.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 51-53, 266, illus.

— Developing the foreign aircraft market.

Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 715-719, illus.

— Five months' exports off little.

Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1085-1087, 1090, ill.

ROLFE, JOHN. Draining Sky Harbor.

Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1457-1458, ill.

ROLL. *See* Fuchs, Richard, und Wilhelm Schmidt: Der gefährliche flache Trudelflug und seine Beeinflussung.

ROLLS-ROYCE. *See* Fell, L. F. R.: The Rolls-Royce Condor III. B engine.

R 100. British airship "R-100" twice spans the Atlantic.

U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, p. 48.

— Das englisch Luftschiff R 100.

Die Luftwacht, Heft 3 (Marz 1930), Berlin, pp. 137-140, ill.

— The fastest airship in the world?

Aeroplane, Vol. 38, No. 4 (Jan. 22, 1930), London, p. 122.

— The homecoming of R 100.

The Aeroplane, Vol. 39, No. 8 (Aug. 20, 1930), London, pp. 453a-456, illus.

— Return of R 100.

Flight, No. 1130, Vol. 22, No. 34 (Aug. 22, 1930), London, pp. 952-953, illus., map.

— R 100.

Flight, No. 1138, Vol. 22, No. 42 (Oct. 17, 1930), London, p. 1141.

Nature, Vol. 126, No. 3173 (Aug. 23, 1930), London, p. 287.

- R 100. R 100 crosses the Atlantic.
 The Aeroplane, Vol. 39, No. 6 (Aug. 6, 1930), London, p. 336.
- The R 100's endurance test.
 The Aeroplane, Vol. 38, No. 6 (Feb. 5, 1930), London, p. 206, ill.
- R 100 flies to Montreal.
 Flight, No. 1128, Vol. 22, No. 32 (Aug. 8, 1930), London, pp. 891-894, maps.
- R 100 starts for Montreal.
 Flight, No. 1127, Vol. 22, No. 31 (Aug. 1, 1930), London, pp. 872-875, illus.
- Viaje trasatlántico del R 100.
 Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, p. 27.
- Von der englischen Luftschiffahrt R 100.
 Das Luftschiff, 2. Jahrg., Nr. 5/6, 1930, Berlin-Lichterfelde, p. 42.
- The voyaging of R 100.
 The Aeroplane, Vol. 39, No. 5 (July 30, 1930), London, pp. 282-284, ill.
- See Brigham, R. B.: R 100.
- See Dollfus, Charles: Les traversées du "R 100."
- See Great Britain: A comparison of England's two new aircraft. A description of the recently launched R 100 and a comparison with R 101.
- See Herrera, Emilio: Primer viaje a sudamérica del "Graf Zeppelin" y doble viaje trasatlántico del "R 100".
- R 101. The airship R. 101.
 Engineering, Vol. 129, Nos. 3344, 3346 (Feb. 14, 28, 1930), London, pp. 187-189, 271-274, illus.
- The brotherhood of France.
 The Aeroplane, Vol. 39, No. 16 (Oct. 15, 1930), London, pp. 864-868.
- La catastrophe du R 101.
 L'Aéronautique, 12me année, No. 138 (nov. 1930), Paris, p. 390, ill.
- Le drame du R 101.
 L'Aérophile, 38e année, No. 11 (15 nov. 1930), Paris, pp. 326-328, ill.
- Dr. Eckener zur Katastrophe des R 101.
 Das Luftschiff, 2. Jahrg., Nr. 9, 1930, Berlin-Charlottenburg, pp. 66-67.
- How "R 101" will "dock" in Egypt and India: Airship mooring.
 Illustrated London News, Vol. 177, No. 4772 (Oct. 4, 1930), London, pp. 571-572, ill.
- The inquiry into the loss of the R. 101.
 The Aeroplane, Vol. 39, No. 19 (Nov. 5, 1930), London, pp. 1022-1027.
- Konstruktive Einzelheiten des englischen Luftschiffes R 101.
 Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 12 (22 März 1930), Berlin, pp. 376-377, ill.
- The loss of H. M. Airship R 101.
 Flight, No. 1137, Vol. 22, No. 41 (Oct. 10, 1930), London, pp. 1107-1114, 1126, illus.
- Modifications au rigide R 101.
 L'Aéronautique, 12me année, No. 129 (fév. 1930), Paris, p. 72, ill.
- Pensions and gratuities to R 101 dependents.
 Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, pp. 1239-1240.
- La pérdida del R 101.
 Aérea, Año 8, Núm. 86 (Sepbre-Oct. 1930), Madrid, pp. 4-5, ill.
- R 101.
 Journ. Roy. Aer. Soc., Vol. 34, No. 239 (Nov. 1930), London, pp. 895-901.
- R 101.
 Luftschau, 3. Jahrg., Nr. 19 (10. Okt. 1930), Berlin, p. 145, ill.

- R 101. The R 101 court of inquiry.
 Flight, No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, pp. 1181-1182.
- The R 101 disaster.
 Flight, No. 1137, 1145, Vol. 22, No. 41, 49 (Oct. 10, Dec. 5, 1930), London, pp. 1105-1106, 1421.
- "R 101" disaster.
 Illustrated London News, Vol. 177, No. 4773 (Oct. 11, 1930), London, pp. 605-615, ill. (Special number).
- The R 101 enquiry. Constitution of court.
 Flight, No. 1139, Vol. 22, No. 43 (Oct. 24, 1930), London, p. 1170.
- R 101. Funeral of victims.
 Flight, No. 1138, Vol. 22, No. 42 (Oct. 17, 1930), London, pp. 1137-1141, illus.
- R 101 has two reversible engines.
 Flight, No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, p. 1076.
- The R 101 inquiry.
 Aeroplane, Vol. 39, No. 20 (Nov. 12, 1930), London, pp. 1078, 1080, 1082.
- R 101 inquiry, Leakage from gas bags.
 Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, pp. 1238-1239.
- R 101 inquiry. The question of loss of gas.
 Flight, No. 1141, Vol. 22, No. 45 (Nov. 7, 1930), London, pp. 1228-1229.
- R 101 inquiry opened.
 Flight, No. 1140, Vol. 22, No. 44 (Oct. 31, 1930), London, p. 1187.
- Das tragische Schicksal des R 101.
 Das Luftschiff, 2. Jahrg., Nr. 9, 1930, Berlin-Charlottenburg, pp. 65-66.
- Vermutungen über die Katastrophe des R 101.
 Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, pp. 73-76.
- See Brancker, Sir Sefton: Sir Sefton Brancker's testament.
- See Carter, B. C., and N. S. Muir: Torsional vibration of crankshafts Beardmore "Tornado" airship engine investigations.
- See Gavo: En torno a la catástrofe del R. 101.
- See Great Britain: A comparison of England's two new aircraft. A description of the recently launched R 100 and a comparison with R 101.
- See Grey, Charles Grey: On a psychological problem.
- See Herrera, Emilio: Causes probables de la catástrofe del "R 101."
- See Kleffel, Walther: Drei Tote von R 101.
- See Milner, Henry B.: The de-nationalization of helium.
- See Rozendaal, John: Berlijnsche brief. R 101.—De "Do-X" en het Rohrbachstroo.—De "eend" redivivus.
- See Teed, P. L.: Advice to the crew of R. 101.
- Roof marker.** A new roof marker.
 Airway Age, Vol. 11, No. 3 (March 1930), New York, p. 406, ill.
- Roomé, A. B.** Aviation insurance. An explanation of coverages, and obligations resting upon the insured.
 Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 369-374, ill.
- ROOSEVELT FIELD.** Maintenance at Roosevelt Field, N. Y.
 Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 934-937, ill., tabs.
- ROPE.** See Abraham, Martin: Drähte, Litzen und Seile im Flugzeugbau.

ROPER, ALBERT. Recent developments in international law.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 395-414.

ROSE, JOHN A. Exhibits and salesmanship.
Aviation, Vol. 28, No. 18 (May 3, 1930), New York, p. 906.

ROSENKRANTZ, W. E. Runways of material at hand. Utilization of local materials for paving at airports.
Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 678-679, ill.

ROSENHAIN, WALTER. The development of materials for aircraft purposes.
Journ. Roy Aer. Soc., Vol. 34, No. 236 (Aug. 1930), London, pp. 631-648, ill., diagrs., tabl.

ROSENSTIEL. Étude des conditions d'utilisation d'un hydravion sanitaire dans la marine de guerre.
Revue des Forces Aériennes, No. 13, août 1930, Paris, pp. 947-954, ill.

ROSS, C. A. *See* Zahm, Albert Francis, and C. A. Ross: Tentative bibliography on skin friction flow.

ROSS, HUGH G. A new airplane guide and obstruction marker.
Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 951-952, ill.

ROSS, MALCOLM. America's aircraft builders and their products.
The Sportsman Pilot, Vol. 3, No. 4 (April 1930), New York, pp. 36-37, 59, ill., port.
Portrait Igor Ivan Sikorsky.

— The Henson "Ariel."
The Sportsman Pilot, Vol. 4, No. 1 (July 1930), New York, pp. 13-15, ill.

ROSS, RAYMOND L. Maps for aviators.
The August Scientific Monthly, Vol. 31, No. 2 (Aug. 1930), New York, pp. 126-128, map.

ROTARY "THUMBS." *See* Thurston, A. P.: Rotary "Thumbs." Further details of Dr. Thurston's invention.

ROTH, M. W. Le guidage des navires ou aéronefs par ondes dirigées.
La Science Moderne, 7e année, No. 7 (juil. 1930), Paris, p. 334.

ROTHROCK, A. M. Injection lags in a common-rail fuel injection system.
National Advisory Committee for Aeronautics, Technical Notes No. 332, Feb. 11, 1930,
Washington, February 1930, p. 7, ill., diagrs.

— Pressure fluctuations in a common-rail fuel injection system.
National Advisory Committee for Aeronautics, Report No. 363, Nov. 7, 1930, Washington,
U. S. Government Printing Office 1930, p. 16, ill., diagrs.

ROTHROCK, A. M., and D. W. LEE. Some characteristics of fuel sprays from open nozzles.
National Advisory Committee for Aeronautics, Technical Notes No. 356, Nov. 21, 1930,
Washington, November 1930, p. 11, ill., diagrs.

ROTHROCK, A. M. *See* Gelalles, A. G., and A. M. Rothrock: Experimental and analytical determination of the motion of hydraulically operated valve stems in oil engine injection systems.

ROTOSCOPE. *See* Ashdown: The Ashdown Rotoscope.

ROTROFF, DAVID. Bellanca produces another different type plane.
U. S. Air Service, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 44-45, ill.

ROTTERDAM. De Rotterdamsche luchthaven in den zomer van 1930.
Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, pp. 320-321, ill.

ROUGERIE. La méthode Bougerie de vol sans visibilité.
L'Aérophile, 38e année, Nos. 5-6 (15 mars 1930), Paris, p. 81, ill.

ROUNDS, G. W. *See* Peterson, J. B., and G. W. Rounds: Flight test instruments.

ROUSSILHE, H. Emploi de la photographie aérienne aux levers topographiques à grande échelle.

Encyclopédie industrielle et Commerciale, Paris, Librairie de l'Enseignement technique, Léon Eyrolles, 1930, p. 480, ill. (1 vol. texte. 1 vol. planches.)

ROWELL, ROSS E. Uses of aircraft in bush warfare.

U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 29-31, 56.

ROWLEDGE, A. J. Water-cooled aero engines (six years' progress).

Journ. Roy. Aer. Soc., Vol. 34, No. 235 (July 1930), London, pp. 578-602, illus.

ROWSE, FRANCIS W. Private flying in Canada.

Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 152-154, illus.

ROY, MAURICE. Contribution à la théorie l'hélice propulsive.

Paris, Aéro Club de France. Travaux du Cercle d'Études Aéronautiques, Fascicule 3. Paris, Le centre de documentation Aéronautique Internationale de l'Aéro-Club de France, 1929, pp. 38, diagrs., tabls.

— Propulsion by reaction.

National Advisory Committee for Aeronautics, Technical Memorandums No. 571, June 26, 1930, Washington, June 1930, p. 19, illus.

ROYAL AERO CLUB. See Turner, C. C.: The Royal Aero Club.

ROYAL AERONAUTICAL SOCIETY. See Grey, Charles Grey: On the Royal Aeronautical Society.

ROYAL AIR FORCE. The eleventh Royal Air Force display.

Flight, No. 1123, Vol. 22, No. 27 (July 4, 1930), London, pp. 739-750, 764, illus.

— Review of the air forces.

Air annual of the British Empire 1930, London, pp. 51-92, illus., diagrs., tabls.

— The Royal Air Force exercises, 1930.

The Aeroplane, Vol. 39, No. 7 (Aug. 13, 1930), London, p. 406.

— See Courtney, C. L.: The strategical mobility of air forces.

— See Dixon, Charles: The parachute in the Royal Air Force.

— See Grey, Charles Grey: On the R. A. F. display.

— See McAlery, C. M.: The eleventh Royal Air Force display.

— See McAlery, C. M.: The Royal Air Force in 1929.

ROYAL AIRCRAFT ESTABLISHMENT. Torsional vibration of crankshafts. A description of the R. A. E. MK. III torsigraph, by the staff of the Engine Experimental Department, Royal Aircraft Establishment. Presented by the director of Scientific Research, Air Ministry.

Aer. Res. Comm., Rep. Mem., No. 1248 (E. 32), November 1928, London, 1930, p. 5, illus.

ROZENDAAL, JOHN. Berlijnsche brief. "R 101".—De "Do-X" en het Rohr bachoctrooi.—De "eend" redivivus.

Het Vliegveld, 14de Jaarg., No. 11 (Nov. 1930), Amsterdam, pp. 373-377, ill.

— De Europeesche rondvlucht.

Het Vliegveld, 14de Jaarg., No. 8 (Aug. 1930), Amsterdam, pp. 263-266, ill.

— De Europeesche rondvlucht.

Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 299-305, ill.

— De tocht van de "Graf Zeppelin."

Het Vliegveld, 13de Jaarg., No. 4 (April 1929), Amsterdam, pp. 140-142, ill., map.

— De tragedie van een Duitsch luchtschipuitvinder.

Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, pp. 227-231, ill.

— Het vliegende wonderschip van Dornier.

Het Vliegveld, 13de Jaarg., No. 8 (Aug. 1929), Amsterdam, pp. 289-292, ill.

ROZENDAAL, JOHN. De wondervleugel van Dessau: de Junkers "G-38." Het Vliegveld, 13de Jaarg., No. 12 (Dec. 1929), Amsterdam, pp. 447-451, ill.

RUBBER. See Hohenemser, K.: Stossversuche an Druckgummifederungen für Flugzeugfahrgestelle.

RUBBER springs. See Hohenemser, K.: Impact tests on rubber composed springs for airplane landing gears.

RUDDERS. See Bradfield, F. B.: Centre of pressure travel of symmetrical section at small incidence.

— See Bradfield, F. B.: Maximum force on rudders.

— See Bradfield, F. B., and R. A. Fairthorne: Maximum force on the fin and rudder of a Bristol fighter.

— See Bradfield, F. B.: Maximum lift coefficient of R. A. F. 30 all-moving rudder.

RÜHL, KARL. Aerodynamik und Statik in der Luftfahrtforschung. Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 43 (25. Okt. 1930), Berlin, pp. 1491-1492, illus.

— Die amerikanische Luftfahrt 1929.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 12 (22. März 1930), Berlin, pp. 377-378.

RUMPLER. See Heinze, Edwin P. A.: The Rumpler twin-hull flying boat. Is the giant transocean plane coming?

RUNDFLUG. The rundflug day-by-day.

The Aeroplane, Vol. 39, No. 7 (Aug. 13, 1930), London, pp. 388-396.

RUNWAYS. See Arthur, William E.: Prepared runways on modern airports.

— See Rosengarten, W. E.: Runways of material at hand. Utilization of local materials for paving at airports.

RUSSELL, A. E. Method of stressing divided undercarriages.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1144, 1148, Vol. 22, No. 48, 52 (Nov. 28, Dec. 26, 1930), London, pp. (1388d-1388h), 84-88, (1484a-1484c), 89-91, illus.

RUSSELL, HARRY L. How I flew the tour.

Aviation, Vol. 29, No. 5 (November 1930), New York, pp. 281-282.

RUSSIA. Aeronautics. Commercial aviation in Soviet Russia.

Mech. Eng., Vol. 52, No. 2 (Feb. 1930), New York, p. 149.

— **Luftschiffpläne und Flugverkehr in Russland.**

Das Luftschiff, 2. Jahrg., Nr. 9, 1930, Berlin-Charlottenburg, pp. 69-70.

— **Das Luftverkehrsprogramm der Sowjet-Union.**

Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 249-251, map.

— See Ullendorff, Hans: Russia plans growth in the air.

RYAN. Wasp-powered Ryan B-7 monoplane.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 110-111, illus.

RYAN, F. M. See Jones, R. L., and F. M. Ryan: Abridgment of air transport communication.

RYDER, E. A. Factors involved in developing light weight design.

Machine Design, Vol. 2, No. 7 (July 1930), pp. 15-19, ill.

RYNIN, N. A. Raketen und Vortriebsmittel direkter Reaktion. Geschichte, Theorie und Technik.

Leningrad, Verlag, P. P. Soikin, 1929, p. 216.

Typographie "Transpetschatj" des Volkskommisariats für Verkehrswesen.

RYSKY, CARLO DE. Caproni—90 P. B.—6000 PS.

Deutsche Luftfahrt, 34, Jahrg., Heft 3 (März 1930), Berlin, pp. 73-75, illus.

RYSKY, CARLO DE. Description de l'hélice Benuzzi.

L'Aéronautique, (L'Aérotechnique, 8e année, No. 92), 12me année, No. 135 (août 1930), Paris, p. 302, ill.

S

S., G. L'attività del reparto aeronautico del registro italiano.
Riv. Aeron., Anno 6, N. 3 (Marzo 1930), Roma, pp. 508-517, tabls.

SABLIER, G. Manuel pratique de construction des planeurs; construction d'un biplan, d'un monoplan à poutre, et des fuselages—pilotage—résistance des matériaux.
Paris, F. L. Vivien, 1929, pp. 141, illus., diagrs.

SACRÉ, H. WALAARDT. De organisatie van het Vijfde Internationale Luchtvaartcongres.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, p. 280, port.

SAFETY. See Atwood, J. Paul: Dirigibles and air traffic safety.

— See Bauer, Louis H.: Medical aspects of safe flying.

— See Benkendorff, Rudolff: Fragen und Ziele der Flugsicherung.

— See Biche, Jean: Le concours Guggenheim pour la sécurité en aviation.

— See Bouché, Henri: Pour qu'il y ait moins d'"avions aveugles."

— See Carroll, Thomas: Relative flight safety of the autogiro.

— See Congrès International de la Sécurité Aérienne. Rapports . . .

— See Daniel Guggenheim Fund: The Daniel Guggenheim international safe aircraft competition: final report January 31, 1930.

— See Geyer, H.: Sicherheit des Flugsports.

— See Giacommelli, R.: La gara Guggenheim per il velivolo sicuro e i suoi risultati.

— See Giovine, Vittorio: Il problema dell'atteramento nella nebbia.

— See Gymnich, Alfred: Die Flughöhe als Faktor der Flugsicherheit.

— See Howard, Edward P.: Flight training as a means of insuring safety.

— See Irving, H. B.: Safety and control.

— See Jackson, J. H.: Is it safe to fly?

— See Llave, Joaquin de la: Trabajos de la F. Guggenheim sobre el vuelo a ciegas en Norteamérica.

— See Pleines, Wilhelm: Bericht über das Ergebnis des amerikanischen Guggenheim-Sicherheits-Wettbewerbs.

— See Schrenk, Martin: Das Ergebnis des Guggenheim-Sicherheits-Wettbewerbs für Flugzeuge.

SAFETY rules. Government issues safety rules.

Western Flying, Vol. 7, No. 3 (March 1930), Los Angeles, Cal., p. 118.

SAHARA. See Deschamps: L'aviation au Sahara et les voies de pénétration aérienne dans le Sahara oriental.

— See Gallet: La pénétration saharienne.

SAILS. See Tanner, T.: The forces on a yacht's sail.

SAINT-DENIS, PIERRE DE. L'aviation commerciale et son avenir au Canada.

L'Aéronautique, 12me année No. 132 (mai 1930), Paris, pp. 157-161, ill., map.

212 NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

- ST. LOUIS. The International Aircraft Exposition. The St. Louis show attracts large number of exhibitors.—Emphasis on merchandising.
Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 214-222, ill.
- St. Louis international aircraft exposition this month.
U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, pp. 32-34, ill.
- See Burtt, Robert Morris: A backward glance at St. Louis.
- See Neville, Leslie E.: Airplanes at the show. An analysis of the group with descriptions of the newer types.
- See Wines, James P.: The St. Louis show.
- SAKAKIBARA, SIGEKI. Further note on the existence of the transverse eddy resistance.
Proc. Phys-Math. Soc. Japan, Ser. III, 12, 1930, Tokyo, pp. 156-158.
- SALIER, CECIL W. Lawrence Hargrave.
Journal and Proceedings, Royal Australian Historical Society, Vol. 15, No. 3, 1929, Sydney, pp. 142-188.
- SALT, ALEXANDER EDWARD WROTTESLEY. Imperial air routes, with an introduction by Air Vice-Marshal Sir Sefton Brancker.
London, J. Murray, [1930], pp. xiv, 280, maps, diagrs.
- SALVATOR. Demonstratie met de "Salvator" parachute te Soesterberg.
Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, p. 215.
- SALVATOR, D. Descrizione ed istruzioni per l'impiego del paracadute "Salvator D" (Ministero dell'aeronautica; direzione gen. del. genio aeronautico).
Roma, tip. della Camera dei deputati, 1929, p. 43.
- SAMSON, CHARLES RUMNEY. Flights and flights.
London, E. Benn limited, 1930, pp. xii, 372, ill.
- SAN FRANCISCO. See Baldwin, Charles Hobart. A proposed airport for San Francisco . . .
— See D., Ch.: Protection météorologique de la ligne San Francisco-Los Angeles par un réseau spécialisé.
- SANDERS, RALPH. Speed record airplane flight.
Monthly Weather Review, Vol. 58, No. 3 (March 1930), Washington, p. 118.
- SANDS, A. B. State control of aviation in Connecticut.
Aviation, Vol. 28, No. 18 (May 3, 1930), New York, pp. 890-893, ill.
An Interview with Clarence M. Knox.
- SANDWELL, ARNOLD H. Canadian fixed base operator has good year. Continental aero corporation successfully completes first year's business.
Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 504-505, ill.
- SANITATION. See Hardecker, John F.: Sanitary plumbing for aircraft.
— See Nola, Angelo di; Questioni sanitarie di aviazione.
- SANZ, ANGEL B. L'aeroport de Madrid.
Aéronautica, Vol. 4, No. 2 (Feb. 1930), Arnhem, pp. 26-27, ill.
- Las comunicaciones aéreas entre España y América.
Aéronautica, Vol. 4, No. 2 (Feb. 1930), Arnhem, pp. 29-30, maps.
- SARO. The Saro "Flying Cloud." An amphibian boat with two "Whirlwind" engines.
Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, pp. 831-832, ill.
- SATÔ-KÔZI. Ensuigata-rappa no onkyôgakutekino seisitu ni tuite. Sono 2. (On the acoustical properties of conical horns.—Part 2.)
Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 64 (Vol. 5, 11), (Nov. 1930), Tôkyô, pp. 261-285, ill., tabs.

- SATÔ-KÔZI. Kuda no tomonari ni tuite. (On the resonance of pipes with a movable end.)
 Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 56 (Vol. 5, 3) (Jan. 1930), Tôkyô, pp. 49-92, illus., diagrs., tabs.
- SATÔ, NAOZÔ. See Suhara, Toyotarô, Naozô Satô, and Sidutake Kamei: A new ultra-speed kinematographic camera taking 40,000 photographs per second.
- SAUNDERS-ROE. Saunders-Roe, Ltd.
 Air annual of the British Empire 1930, London, 526-532, ill.
- SAVAGE, E. W. Consider the buyer.
 Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1339-1342, diagrs.
- New short line makes progress. Ludington line accomplishes the unexpected in operation as well as traffic.
 Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1540-1544, ill.
- SAVOIA, CESARE. La responsabilità civile del vettore aereo, con prefazione del cav. gr. cr. Prof. Pietro Ciglioli.
 Roma, Athenaeum, 1928, pp. xii, 293.
- SAWALLESH, GEORGE. The happy traffic evangel or rail plus pullman.
 U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 40-42, port.
- SAYRE, DANIEL. The purchasing department's relation to airline operation.
 Aviation, Vol. 29, No. 6 (Dec. 1930), New York, pp. 346-348, illus.
- SCALES. See Fairbanks: Fairbanks portable scale for airplanes.
- SCHAEFER, CLEMENS, und FRANK MATOSSI. Der Ramaneffekt.
 (Fortschritte der Chemie, Physik und physikalischen Chemie, herausgegeben von A. Eachen, Band 20, Heft 6) Berlin, Gebrüder Borntraeger, 1930, pp. iii, 52.
- SCHAEFFER, E. Im Zeppelin über der Schweiz.
 Zürich-Leipzig, Verlag Orell Füssli, 1930, pp. 16, illus.
- SCHATZKI. Motorschonung durch Drosseln.
 Zeitscher. Flugt. Motorluftsch., 21. Jahrg., 7. Heft (14. April 1930), München, pp. 164-175, diagrs.
- SCHEINERT, CARLETON A. Learning to be a cloud-wise pilot.
 Western Flying, Vol. 8, No. 1 (July 1930), Los Angeles, Calif., pp. 58-59, 132.
- SCHETTER, CLYDE, and FRANK PETRIE. Training pilots for airships.
 Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Calif., pp. 30-32, illus.
- SCHEY, OSCAR W., ERNEST JOHNSON, and MELVIN N. GOUGH. Comparative performance obtained with XF7C-1 airplane using several different engine cowlings.
 National Advisory Committee for Aeronautics, Technical Notes No. 334, Feb. 28, 1930, Washington, February 1930, p. 17, illus., diagrs., tabs.
- SCHEY, OSCAR W., and ARNOLD E. BIERMANN. The effect of cowling on cylinder temperatures and performance of a Wright J-5 engine.
 National Advisory Committee for Aeronautics, Report No. 332, Jan. 25, 1930 [Washington, U. S. Government Printing Office, 1929], p. 22, illus., diagrs., tabs.
- SCHEY, OSCAR W., and ALFRED W. YOUNG. Comparative flight performance with an N. A. C. A. Roots supercharger and a turbo-centrifugal supercharger.
 National Advisory Committee for Aeronautics, Report No. 355, Oct. 8, 1930, Washington, U. S. Government Printing Office 1930, p. 14, illus., diagrs., tabs.
- SCHILLER, HANS VON. "Im Zeppelin über der Schweiz."
 Zürich und Leipzig, herausgegeben von Emil Schaeffer im Orell Füssli Verlag, 1930, pp. 16. ill. Illustrations by Ernst Erwin Haberkorn.

- SCHILLER, LUDWIG. Hydro- und Aero-dynamik. 3. Teil. Technische Anwendungen.
 Leipzig, Akademische verlagsgesellschaft m. b. h., 1930, pp. 557, illus., diagrs.
 Handbuch der Experimentalphysik, Bd. 4, 3. teil.
 Bearbeitet von O. v. Eberhard, R. Emden, O. Flachsbart, W. Gaede, L. Hope, F. Horn,
 W. Klempner, W. Spannhake.
- SCHMALZ, HEINZ. Politik im Luftraum.
 Z Pol 19. Jahrg., Heft 11-12 (März 1930), pp. 786-792.
- SCHMECKEBIER, LAURENCE FREDERICK. The Aeronautics Branch, Department of Commerce; its history, activities and organization.
 Washington, D. C., The Brookings Institution, 1930, pp. x, 147.
 Institute for government research. Service monographs of the United States Government,
 No. 61.
- SCHMIDT, ERICH K. O. Oberflächenschutz von Sperrholz.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin,
 1930, pp. 420-427, diagrs., tabls.
 Luftfahrtforschung, Band 8, Heft 2, 1930, München und Berlin, R. Oldenbourg.
- SCHMIDT, WILHELM. See Fuchs, Richard, and William Schmidt: Air forces and air-force moments at large angles of attack and how they are affected by the shape of the wing.
 — See Fuchs, Richard, und Wilhelm Schmidt: Der gefährliche flache Trudelflug und seine Beeinflussung.
 — See Fuchs, Richard, und Wilhelm Schmidt: Luftkräfte und Luftkraftmomente bei grossen Anstellwinkeln und ihre Abhängigkeit von der Tragwerksgestalt.
- SCHMIEDEN, C. Das Ausknicken versteifter Bleche unter Schubbeanspruchung.
 Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 3. Heft (14. Feb. 1930), München, pp. 61-65, ill.
- SCHMIESCHEK, ULRICH. Neue Wege zur Steigerung der Lichtempfindlichkeit von photographischen Emulsionen.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin,
 1930, pp. 509-515, illus., diagrs., tabls.
- Untersuchungsergebnisse von 61 photographischen Emulsionen des Handels.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin,
 1930, pp. 516-524, diagrs., tabls.
- SCHNAUFFER, KURT. Aufzeichnung rasch verlaufender Druckvorgänge mittels des Verfahrens der halben Resonanzkurve.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin,
 1930, pp. 304-314, illus., diagrs.
 Luftfahrtforschung, Band 6, Heft 6, 1930, München und Berlin, R. Oldenbourg.
- SCHNEIDER. Curtiss Conqueror, Type G V 1570 600PS, die Motoren der Do X.
 Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 272-273.
- Schneider rules for 1931.
 Aeroplane, Vol. 33, No. 4 (Jan. 22, 1930), London, p. 120.
- Schneider trouble settled.
 Flight, No. 1145, Vol. 22, No. 49 (Dec. 5, 1930), London, pp. 1399-1400.
- SCHNEIDER, HELMUT. Flugmotoren der Schneider-Trophäe 1929.
 Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 15 (12 April 1930), Berlin, pp. 459-466, illus.
- Der "Packard Diesel"—Flugmotor.
 Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 156-159, illus.
- SCHNEIDER trophy. The Schneider crisis.
 Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, pp. 797-798.
- The Schneider trophy and the F. A. I. Italian deposit returned.
 Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, p. 807.

SCHNEIDER trophy. *See* Cowley, W. L., and R. Warden: Tests on quarter scale models of high speed seaplanes for the Schneider trophy contest of 1927. Section IV. Comparison with full scale and conclusions.

— *See* Léglise, Pierre: *L'hydravion de Coupe Schneider Bernard* 120.

— *See* Schneider, Helmut: *Flugmotoren der Schneider-Trophäe* 1929.

— *See* Waghorn, H. R. W.: *The Schneider trophy*, 1929.

SCHOLTE, J. B. *De Zeppelin en de Do-X.*

Het Vliegveld, 13de Jaarg., No. 11 (Nov. 1929), Amsterdam, pp. 404-405, ill.

SCHREIBER. Deutsche Flieger am Befreiten Rhein "3. D. L. V.-Zuverlässigkeitsflug" — "Rheinland-Befreiungsflug" — "Deutsche Kunstflugmeisterschaft 1930."

Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 134-137, ill.

SCHREIBER, D. *Die Bilanz der "Rhön 1930."*

Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, p. 243.

— Wissenschaft, Technik und Praxis auf der "1. Wissenschaftlichen Segelflugtagung."

Deutsche Luftfahrt, 34. Jahrg., Heft 3 (März 1930), Berlin, p. 86.

SCHREIBER, ERNEST. The Behm acoustic sounder for airplanes with reference to its accuracy.

National Advisory Committee for Aeronautics, Technical Memorandums No. 588, Oct. 23, 1930, Washington, October 1930, pp. 18, ill., diagrs., tabls.

— Das Behmlot für Flugzeuge und die mit ihm erzielte Genauigkeit.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 483-490, ill., diagrs., tabls.

SCHRENK, MARTIN. Aufbau und Einzelheiten deutscher Leicht- und Sportflugzeuge.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 11 (15. März 1930), Berlin, pp. 321-330, ill., tabls.

— Der Einfluss des Triebwerksgewichts auf die Flugleistungen.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 270-274, ill., diagrs.

Luftfahrtforschung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg.

— Das Ergebnis des Guggenheim-Sicherheits-Wettbewerbs für Flugzeuge.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 23 (7. Juni 1930), Berlin, pp. 769-770, ill.

— Measurement of profile drag on an airplane in flight by the momentum method. Parts I and II.

National Advisory Committee for Aeronautics, Technical Memorandums Nos. 557, 558, March 27, 31, 1930, Washington, March 1930, pp. 47, 31, ill., diagrs., tabls.

— Structural details of German light airplanes.

National Advisory Committee for Aeronautics, Technical Memorandums No. 579, Aug. 22, 1930, Washington, August 1930, pp. 25, ill., tabls.

SCHRENK, OSKAR. The boundary layer as a means of controlling the flow of liquids and gases.

National Advisory Committee for Aeronautics, Technical Memorandums No. 555, March 6, 1930, Washington, March 1930, p. 22, ill., diagrs.

— A possible method for preventing the autorotation of airplane wings.

National Advisory Committee for Aeronautics, Technical Memorandums No. 569, June 12, 1930, Washington, June 1930, pp. 6, ill., diagrs.

SCHRÖDER, P. Über die Bestimmung von Widerstand und Trimmoment bei gleitenden Wasserfahrzeugen.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 22. Heft (23, Nov. 1930), München, pp. 577-580, diagrs.

- SCHROETER, JOHN PAUL.** Starting and landing with gliders and soarers; a manual of instruction for glider clubs and pilots.
Wauwatosa, Wis., The Kenyon Press Publishing Co., 1929, p. 20, illus.
- SCHUBERT.** Schubert valveless engine.
Aero Digest, Vol. 16, No. 6 (June 1930), New York, p. 112, illus.
- SCHÜLZ, J.** Die Betriebsstoffversorgungsfrage im Weltluftverkehr.
Die Luftwacht, Heft 2, Feb. 1930, Berlin, pp. 89-90.
- SCHULZ, R.** Industrie und Technik. Die Entwicklung des Junkers-Schweröl-flugmotors. Höher siedende Kühlmittel. Junkers G 38.
Die Luftwacht, Heft 2, Feb. 1930, Berlin, pp. 71-81, ill.
- Industrie und technik. Die Flugzeuge des Guggenheim-Sicherheits-Wettbewerbes.
Die Luftwacht, Heft 3, März 1930, Berlin, pp. 130-136, ill.
- Die Weltluftfahrt 1929. IV. Luftfahrttechnik.
Die Luftwacht, Heft 1, Jan. 1930, Berlin, pp. 29-31.
- Die Weltluftfahrt 1929. V. Luftfahrtindustrie.
Die Luftwacht, Heft 1, Jan. 1930, Berlin, p. 32.
- SCHUMAN, LOUIS, and GOLDIE BACK.** Strength of rectangular flat plates under edge compression.
National Advisory Committee for Aeronautics, Report No. 356, Jan. 19, 1930, Washington, U. S. Government Printing Office 1930, p. 24, illus., diagrs., tabls.
- SCHW., A.** Temperaturdifferenzmesser für das Luftschiff "Graf Zeppelin."
Hersteller: Keiser & Schmidt.
Das Luftschiff, 2. Jahrg., Nr. 5/6, 1930, Berlin-Lichterfelde, pp. 36-37, illus.
- SCHWAGER, O.** Die Vorausberechnung der Hohenleistungen.
Flugwesen, Bd. 10, Nr. 6, 1930, Prague, pp. 61-63, ill.
- SCHWAM, MORTON.** Static balancing of propeller blades.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, p. 66, ill.
- SCHWARZ, O.** The relation between the tensile strength and the hardness of metals.
National Advisory Committee for Aeronautics, Technical Memorandums No. 552, Feb. 13, 1930, Washington, February 1930, pp. 15, diagrs.
- SCHWEGLER, H.** Die Luftschiffwerft der amerikanischen Zeppelin in Akron, Ohio.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 14. Heft (28. Juli 1930), München pp. 357-358, illus.
- SCHWENCKE, D.** English airplane construction.
National Advisory Committee for Aeronautics, Technical Memorandums No. 595, Dec. 4, 1930, Washington, December 1930, pp. 11, illus.
- Konstruktive und fabrikationstechnische Fragen des englischen Flugzeugbaues. Ergebnisse einer Studienreise nach England.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 31 (2. Aug. 1930), Berlin, pp. 1085-1090, illus.
- SCHWENGLER.** Über die grosse Wirtschaftlichkeit des Luftschiffverkehrs und des Bauens von Luftschiffen.
Strelitz i. Mecklbg, Juli 1929, pp. 14.
- SCIENTIFIC RESEARCH.** See Ames, Joseph Sweetman: Glancing back at 1929. Scientific progress.
- SCLAFFER.** L'aviation militaire en Mauritanie.
Revue des Forces Aériennes, No. 13, août 1930, Paris, pp. 927-946, ill., map.¹
- SCOTT, MERIT.** Ice formation on aircraft and its prevention.
Journal of the Franklin Institute, Vol. 210, No. 5, (Nov. 1930), Philadelphia, pp. 537-586, illus., diagrs., tabls.

- SCOTT-HALL, S.** Aerodynamic research flying.
 Royal Air Force Quarterly, Vol. I, No. 2 (April 1930), London, pp. 281-290.
- Experiments on an ape aeroplane fitted with pilot planes.
 Aer. Res. Comm., Rep. Mem., No. 1273, (Ae. 419), May 1929, London, 1930, pp. 5, ills., tabls., diagrs.
- Stresses in wing structures. Accelerometer and incidence measurements in various manœuvres.
 Aer. Res. Comm., Rep. Mem., No. 1309, (Ae. 449), December 1928, London, 1930, pp. 6, ills., diagrs.
- SCRAP.** See Hayes, Robert: Don't throw it away. Old material can be converted to other uses.
- SCRIBA, LUDWIG.** Elastische Nachwirkung elastische Hysteresis und Temperatur-Kompensation an Aneroiddosen.
 Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 1-30, ills., diagrs., tabls.
- SCRIBE, W. P.** Reducing the cost of learning to fly.
 Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 667-668, ill.
- SCUPHOLM, Ross C.** Detroit show big success.
 U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, p. 62.
- The third annual all-American aircraft show.
 U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, p. 44.
- SEADROMES.** See Fischetti, Ugo: Le isole Galleggianti.
- See Hanson, Earl: Armstrong seadrome project progresses. Plans complete for installing first drome within a year.
- See Hanson, Earl: Legal aspects of the seadrome. International considerations with respect to the Armstrong development.
- SEAPLANE hulls.** See Thompson, F. L.: Water distribution on a flying boat hull.
- SEAPLANES. Flying boats.**
 Flight, No. 1142, Vol. 22, No. 46 (Nov. 14, 1930), London, p. 1231-1232.
- Flying boats or large float seaplanes. A new angle on an old subject.
 U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 35-36, ill.
- Manoeuvrability tests of a seaplane.
 Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, p. 500.
- See Carter, W. G.: Flying boat development for speed research.
- See Coombes, L. P., and A. S. Crouch. The accelerations of a Fairey "Flycatcher" seaplane during aerobatic manœuvres.
- See Coombes, L. P.: The testing of seaplanes and flying boats.
- See Cowley, W. L., and R. Warden: Tests of models of high speed seaplanes for the Schneider trophy contest of 1927.
- See Cowley, W. L., and R. Warden: Tests on quarter scale models of high speed seaplanes for the Schneider trophy contest of 1927. Section IV. Comparison with full scale and conclusions.
- See Garner, H. M., and L. P. Coombes: The determination of the water resistance of seaplanes.
- See Giannini, Amedeo: L'hydravion.

SEAPLANES. *See* Hall, Norman B.: The new coast guard seaplanes.

— *See* Hardy, J. K.: Experimental comparison between a series of turns of different diameter on a Gloster IV seaplane.

— *See* Heinze, Edwin P. A.: The Rumpler twin-hull flying boat. Is the giant transocean 'plane coming?

— *See* Holroyd, F.: Racing seaplanes.

— *See* Kean, John S.: Racing seaplanes, present and future.

— *See* Munro, William: Floats for racing craft.

— *See* Nelson, William: Flying boat ranges as influenced by size.

— *See* Nelson, William: Protecting flying boats against corrosion.

— *See* Neville, Leslie E.: The consolidated "Commodore" flying boat.

— *See* Nieuport-Delage: L'hydravion de course Nieuport-Delage, type 450.

— *See* Pabst, Wilhelm: Theorie des Landestosses von Seeflugzeugen.

— *See* Pabst, Wilhelm: Theory of the landing impact of seaplanes.

— *See* Parkinson, H.: Seaplane take-off calculations.

— *See* Short floats: Accessories before the fact. Short floats.

— *See* Sumner, Percy James Hammond: Marine aircraft: Elementary naval architecture.

— *See* Weinig, F.: Kanitation als primäre Ursache von Korrosionserscheinungen an Flugzeug-Schwimmkörpern.

SEARCHLIGHTS. *See* Sperry Gyroscope Company: Antiaircraft searchlights and sound locators.

SEEDING. *See* Bohrer, Walt: Reseeding by air—How Doc and Bill do it. (Reseeding grazing ground.)

SEELY, LYMAN J. Flying pioneers at Hammondsport, New York. A very brief outline of the history of "The cradle of aviation" and of the work of invention, development and demonstration of aeroplanes done there by Glenn H. Curtiss, Alexander Graham Bell, the Aerial Experiment Association and their associates between 1908-14, written for the Finger Lakes Association and the Better Hammondsport Club.

Auburn, N. Y., The Fenton Press, 1929, pp. 55, illus.

SEEWALD, F. Deutsche Versuchsanstalt für Luftfahrt im Jahre 1929-30.
Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 52 (27. Dez. 1930), Berlin, pp. 1769-1770.

SEGRAVE. The Segrave Meteor.

Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 38, No. 22 (May 28, 1930), London, pp. 1040-1042, illus.

SEGRAVE, HENRY. Henry Segrave.

The Aeroplane, Vol. 38, No. 25 (June 18, 1930), London, pp. 1155-1156.

SEMPILL, COLONEL, the master of. Flying for the private owner in Great Britain.

Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 162-165, illus.

SERGIEVSKY, BORIS. Speed and altitude records made with a load-carrying seaplane.

Aero Digest, Vol. 16, No. 4 (April 1930), New York, pp. 81, 260, illus.

SERRA, DE ROCCA. Défense des ballons par mitrailleuses terrestres.

Revue des Forces Aériennes, No. 10, mai 1930, Paris, pp. 566-584, tabls.

- SERRAGLI, G.** Considerazioni sul momento laterale di un'elica autorotante di costruzione rigida.
L'Aerotecnica, Vol. 10, N. 3 (Marzo 1930), (Anno VIII), Roma, pp. 149-162, ill., diagrs., tabls.
- Teoria dell'elica in autorotazione. Ricerca delle condizioni necessarie per ottenere il massimo effetto frenante.
Notiziario Tecnico di Aeronautica, Vol. 6, No. 7 (Luglio, 1930), Rome, pp. 40-53, ill.
- SERVICE aircraft.** See Stewart, Oliver: Service aircraft.
- SEYDEL, EDGAR.** Beitrag zur Frage des Ausbeulens von versteiften Platten bei Schubbeanspruchung.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 235-254, diagrs., tabls.
Luftfahrtforschung, Band 8, Heft 3, 1930, München und Berlin, R. Oldenbourg, pp. 20, ill.
- SEYFFARDT, H. A.** Nieuwe plannen van Diedonné Coste.
Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 52-53, port., ill.
- SHANNON, HOMER H.** Breaks records with express traffic. Kohler Aviation Corp. handling 13,000 pounds monthly across Lake Michigan. Overshadows passenger business.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1195-1198, ill.
- SHAW, JOHN ARTHUR.** The D. C. Air Legion—A flying flying club.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, p. 54.
- SHAW, Sir WILLIAM NAPIER.** Manual of meteorology. Vol. III. The physical processes of weather.
Cambridge University Press, 1930, pp. xxviii, 446, ill., maps.
With the assistance of Elaine Austin.
- SHELMERDINE, F. E.** Civil aviation in India, 1929-30.
Air annual of the British Empire 1930, London, pp. 143-147, map.
- SHERRINGTON, C. E. R.** Economics of air transport.
Air annual of the British Empire 1930, London, pp. 3-9.
- SHOCK absorbers.** Shock-absorber strut embodies new ideas in design.
Machine Design, Vol. 2, No. 1 (Jan. 1930), pp. 42-43, ill.
- SHOEMAKER, J. M.** Sea-level supercharging—better reliability—unified responsibility for installation.
Aviation, Vol. 28, No. 11 (Mar. 15, 1930), New York, p. 532.
- SHOPE, LESLIE R.** "Merchandising." The much discussed need of aviation—yet to be properly applied—Who will be the leader?
Airway Age, Vol. 11, No. 12 (Dec. 1930), New York, pp. 1575-1577, ill.
- SHORT.** A flight in the Short "Valetta."
Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, pp. 1092-1093, ill.
- 4-engined Short flying boat. Bristol "Jupiter" engines.
Flight, No. 1138, Vol. 22, No. 42 (Oct. 17, 1930), London, pp. 1130-1132, ill.
- Short "Calcutta." (Service type).
Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, p. 1081, ill.
- The Short "Valetta" commercial seaplane (British). A high-wing all-metal twin-float monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 125, Aug. 31, 1930, Washington, August 1930, pp. 7, ill.
- The Short "Valetta." A new 3-engined twin-float monoplane.
Flight, No. 1126, Vol. 22, No. 30 (July 30, 1930), London, pp. 825-830, ill.
- SHORT, C. W., jr.** The Tulsa, Okla., municipal airport.
Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 380-383, ill.

SHORT BROTHERS. Short Brothers (Rochester & Bedford), Ltd.
Air annual of the British Empire 1930, London, pp. 533-541, ill.

SHORT floats. Accessories before the fact. Short floats.
Aeroplane, Vol. 38, No. 14 (Apr. 2, 1930), London, pp. 597-598, ill.

SIBLEY, EUGENE. Aeronautical radio communications.
Journ. Amer. Inst. Electrical Engineers, Vol. 49, No. 11 (November 1930), New York, pp. 918-920.

SIBOUR, VIOLETTE DE. Flying gypsies.
The Sportsman Pilot, Vol. 3, No. 3 (March 1930), New York, pp. 11-12.

— Flying gypsies; the chronicle of a 10,000-mile air vagabondage.
New York, G. P. Putman's Sons, 1930, pp. 306, ill.

SICKNESS. See Everling, E.: Die "Luftkrankheit."

SIDE slip. Luftfahrt-Kaleidoskop.
Deutsche Luftfahrt, 34. Jahrg., Heft 3 (März 1930), Berlin, p. 72.

SIEBEL, FR. W. Auszug aus der Gedenkrede am Boelke-Gedenktag.
Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 255-256.

SIEMANS-SCHUCKERT. A loud loud speaker. The Siemens-Schuckert mobile equipment for aerodrome use.
Flight, No. 1127, Vol. 22, No. 31 (Aug. 1, 1930), London, p. 861, ill.

SIKORSKY. Le frein Sikorsky à disques multiples.
L'Aéronautique, 12me année, No. 128 (jan. 1930), Paris, p. 14, ill.

— Il freno a dischi multipli Sikorsky.
Riv. Aeron., Anno 6, N. 2 (February 1930), Roma, pp. 360-361, ill.

— A new type of wheel brake.
Aeroplane, Vol. 38, No. 5 (Jan. 29, 1930), London, pp. 169-170, ill.

— Sikorsky S-40 flying boat.
Aero Digest, Vol. 16, No. 2 (February 1930), New York, pp. 126-127, ill.

— See Brakes: Multiple disc brakes.

SIKORSKY, IGOR. See Pierson, Mrs. Harold C.: And how does success affect Igor Sikorsky? The answer is, not at all.

SIKORSKY, IGOR IVAN. See Ross, Malcolm: America's aircraft builders and their products.

SIMAMURA, KINMATSU. See Kobayasi, Tatuo, Hiroto Okumura, Kinmatsu Simamura and Tatuo Koyama: Application of the inverse Wiedemann effect to torque variation recordings. Part II.

SIMMONS, L. F. G. Experiments relating to the flow in the boundary layer of an airship model.
Aer. Res. Comm., Rep. Mem., No. 1268 (Ae. 414), April 1929, London, 1930, pp. 7, diagrs.

SIMMONS, L. F. G., and N. S. DEWEY. Photographic records of flow in the boundary layer.
Aer. Res. Comm., Rep. Mem., No. 1335 (Ae. 466), May 1930, London, 1930, pp. 9, ill., diagr.

SINCLAIR, DUNCAN. Student instruction by radio.
Aviation, Vol. 29, No. 1 (July 5, 1930), New York, pp. 10-11, ill.

SINGAPORE. Singapore flying club.
Flight, No. 1129, Vol. 22, No. 33 (Aug. 15, 1930), London, pp. 927-930, ill.

SIPP, EDWARD A. Airport and aircraft lighting progress. The importance of the relation between airport and aircraft lighting.
Airway Age, Vol. 11, No. 3 (March 1930), New York, pp. 377-379, ill.

- SIPP, EDWARD A. Buy safe airport illumination. Carefully considered lighting is the only economic installation.
Airway Age, Vol. 11, No. 8 (August 1930), New York, pp. 1080-1081, ill.
- SIVEL, THÉODORE. *See* Hegener, Henri: De noodlottige hoogtevaart van de "Zenith."
- SKAN, SYLVIA W. *See* Cowley, W. L., and Sylvia W. Skan: A simplified analysis of the stability of aeroplanes.
- *See* Cowley, W. L., and Sylvia W. Skan: A study of polynomial equations.
- SKIS. Plymet skis.
Airway Age, Vol. 11, No. 3 (March 1930), New York, p. 408, ill.
- SKY HARBOR. *See* Rolfe, John: Draining Sky Harbor.
- SLOTEMAKER, L. H. "De Luchtvaartwet."
Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 43-44, port.
- SLOTTED wings. *See* Alston, R. P.: Stalled flight tests on a Bristol fighter fitted with auto control slots and interceptors.
- *See* Cushing, R. K.: Controllability at low speeds and full scale measurement of lift and drag of Parnall "Peto" fitted with R. A. F. 15 and R. A. F. 31 section wings (slotted and unslotted).
- *See* Guggenheim Safe Aircraft Competition: Slots and flaps take the lead.
- *See* Handley-Page: Le profil Villiers A-6 à fentes Handley-Page.
- *See* Jones, B. Melvill, C. E. Maitland, and R. P. Alston: Records of the lateral motions of a stalled Bristol fighter aeroplane with slots upon the upper wing tips. Experiments made in the Cambridge University Air Squadron.
- *See* Jones, E. T., C. E. Maitland, and W. E. Purdin: Stalled flight tests of a Moth fitted with auto control slots and interceptors.
- *See* Lachmann, G.: Practical tests with the "auto control slit."
- *See* Lachmann, G.: Praktische Erfahrungen mit dem automatischen Spaltflügel.
- *See* Maitland, C. E., and J. H. C. Wake: Comparative handling tests of three Bristol fighter aircraft with different types of slots.
- SMIRNOFF, IWAN. Iwan Smirnoff.
Het Vliegveld, 14de Jaarg., No. 1 (Jan. 1930), Amsterdam, p. 15, port.
- SMITH, A. K. TOULMIN. *See* Lighting: L'illuminazione dell'avio linea moderna.
- SMITH, C. E. KINGSFORD. Kingsford-Smith's Atlantic flight.
Flight, No. 1123, Vol. 22, No. 27 (July 4, 1930), London, pp. 757-761, illus.
- SMITH, ERLE H. From cold cream jars she conjured wings.
U. S. Air Services, Vol. 15, No. 4 (April 1930), Washington, pp. 50-51, port.
- SMITH, FLOYD. On the jump.
U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 36-40, ill.
- SMITH, FRANK M. Giant airplanes—go slow on abandoning wood.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, p. 527.
- SMITH, GEORGE MICHAEL. Strength in shear of thin curved sheets of Alelad.
 National Advisory Committee for Aeronautics, Technical Notes No. 343, June 17, 1930, Washington, June 1930, pp. 27, illus. diagrs., tabs.
- SMITH, JAMES W. Air-mail pilot encounters severe thunderstorm in Florida.
Monthly Weather Review, Vol. 58, No. 3 (March 1930), Washington, pp. 117-118.

- SMITH, KARL F. Modern developments in naval aviation.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 21-25, ill.
- Engine performances at altitude.
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1052-1053, diagr.
- SMITH, KINGSFORD. See H.: De ontvangst van Kingsford Smith en Stannage.
- SMITH, N. L. H. See Bigelow, A. A., and N. L. H. Smith: Airports in 1929 and 1930.
- SMITH, R. H. Aerodynamic theory and test of strut forms—II.
National Advisory Committee for Aeronautics, Report No. 335, Feb. 5, 1930, Washington, U. S. Government Printing Office, 1929, pp. 41, ills., diagrs., tabs.
- SMITHSONIAN INSTITUTION. A list of books forming the Langley aeronautical collection deposited in the Library of Congress by the Smithsonian Institution, March 1930.
Washington, D. C., 1930, pp. 69.
- SMOKE screen. L'escamotage d'une ville (Sacramento, en Californie) sous un écran de vapeurs tendu par un avion.
L'Illustration, 88e année No. 4548 (3 mai 1930), Paris, pp. 12-13, ill.
- SNIJDERS, C. J. Toestanden en vooruitzichten op luchtvaartgebied in Neder-Indië.
Het Vliegveld, 13de Jaarg., No. 2 (Feb. 1929), Amsterdam, pp. 38-42, port.
- SNOW, VIRGINIA. The Newark air service.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 78-81, ill.
- A toy plane that made history.
National Aeronautic Review, Vol. 8, No. 5 (May 1930), Washington, pp. 25-28, ill.
- SNOW, V. G. Dr. Eckener sees a dream fulfilled.
National Aeronautic Review, Vol. 8, No. 4 (April 1930), Washington, pp. 12-14, 62, ill.
- Gliding—modern airmen's sport—an early bird in flying history.
Aeronautic Review, Vol. 8, No. 3 (March, 1930), Washington, pp. 10-15, ill.
- SOARING. Il cinematografo rivelatore delle qualità di un velivolo.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 327-333, ill.
- El concurso alemán de vuelo sin motor.
Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 34-35.
- Ist der Segelflug eine Vorschule für den Motorflug?
Luftschau, 3. Jahrg., Nr. 4 (24. Feb. 1930), Berlin, pp. 26-27.
- Segelflugrekorde.
Luftschau, 3. Jahrg., Nr. 22 (24. Nov. 1930), Berlin, p. 170.
- Le vol sans moteur. La quinzaine de Sens.
L'Aérophile, 38e année, No. 10 (15 oct. 1930), Paris, pp. 294-295, ill.
- Le "Vol sans moteur" et son avenir.
L'Aérophile, 38e année, Nos. 5-6 (15 mars 1930), Paris, pp. 75-76, ill.
- Die "Wissenschaftliche Segelflugtagung" in Darmstadt—ein voller Erfolg für die deutsche Luftfahrt.
Luftschau, 3. Jahrg., Nr. 6 (24. März 1930), Berlin, pp. 41-42.
- See Barnaby, Ralph Stanton: Gliders and gliding. Design, principles, structural features and operations of gliders and soaring planes.
- See Bartocci, Enzo: Il volo a vela e la sua utilità nel campo scientifico.
- See Baumhauer, A. G. von: Congress over zweefvluchten.
- See Bee, R. S.: Some notes on glider flying.
- See Dowd, R. E.: Glider flying at Cape Cod.

- SOARING. *See* Dowd, R. E.: Mechanical launching of gliders.
— *See* Fischer, A.: Zum Segelflugproblem.
— *See* Fucini, Mario: L'addestramento al volo a vela.
— *See* Gale, Charles H.: Where stands the glider?
— *See* Georgii, Walter: Der 40. Rhön-Segelflug-Wettbewerb auf der Wasserkuppe i. Rh. 1929.
— *See* Georgii, Walter: Ten years' gliding and soaring in Germany.
— *See* Gliding.
— *See* Hartshell, H.: Sailplaning.
— *See* Hawks: Un planneur remorqué du Pacifique a l'Atlantique.
— *See* Helbig: Jugendbewegung und motorloser-Flug im Deutschen Luftfahrt-Verbande. Statistischer Rückblick 1929.
— *See* Hirth, Wolf: Why soaring creates better flyers.
— *See* Junkers: Der Junkers-Schwerölfugmotor.
— *See* Kittredge, L. T.: Gliding in high school.
— *See* Kleffel, Walther: Die Organisation im deutschen Segelfugsport.
— *See* Kleffel, Walther: Der Segelflug. Ein Ruhmeskapitel aus der Geschichte des Menschenfluges.
— *See* Klemperer, Wolfgang: Making the wind be your motor.
— *See* Knott, Heinrich: Soaring in America.
— *See* Kronfeld, Robert: Deutscher Segelflug in England.
— *See* Krotki, Rud: 14 hours motorless.
— *See* Krupta, Joseph: "Sky-flying": The winged "Bird-man" making his first flight; and his apparatus, unpacked and packed.
— *See* Lippisch, Alexander: The 1929 Rhön soaring-flight contest.
— *See* Lippisch, Alexander: Technischer Bericht des Rhön-Segelflug-Wettbewerbs.
— *See* Lippisch, Alexander: Vliegen zonder motor.
— *See* Matthias, Joachim: Entwicklung des britischen Segelflugwesens.
— *See* Mátyás, Bernárd: Beszámolo a vitorlázó repülő kongresszusról.
— *See* Netherlands: Zeilvliegen in Nederland.
— *See* Nichols, P. W.: Where design counts.
— *See* Page, Victor W.: Henley's ABC of gliding and sailflying.
— *See* Plüschor, Günther: "Silberkondor über Feuerland. Mit Segelkutter und Flugzeug ins Reich meiner Träume."
— *See* Prandtl, Ludwig: Beobachtungen über dynamischen Segelflug.
— *See* Rhön: Bericht über den 11. Rhön-Segelflug-Wettbewerb 1930.
— *See* Schreiber, D.: Wissenschaft, Technik und Praxis auf der "1. Wissenschaftlichen Segelflugtagung."
— *See* Stamer, F., und A. Lippisch: Gleitflug und Gleitflugzeuge.

- SOARING. *See* Walker, Donald F.: The glider and the aviation industry.
- *See* Walker, Donald F.: The significance of the first national soaring contest.
- *See* Ysenburg, Graf: Bericht über Schulungs-Wettbewerb des 10. Rhön-Segelflug-Wettbewerbes 1929.
- *See* Zahm, Albert Francis: Soaring flight.
- SOCIÉTÉ DES NATIONS. Société des Nations. Comité de coopération entre aéronautiques civiles.
Droit Aérien, Juillet, Août, September 1930, Paris, pp. 556-562.
- SOCIETY OF AUTOMOTIVE ENGINEERS. *See* Warner, Edward P.: Engines before the S. A. E.
- SOLDENHOF. The Soldenhof tailless 'plane. A Swiss light 'plane two-seater.
Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, p. 1478, illus.
- SOMERVILLE, H. A. Geodetic surveying by air.
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1061-1062, ill.
- SONGIA, ROBERTO. Hangars smontabili.
Riv. Aeron., Anno 6, N. 9 (Sept. 1930), Roma, pp. 463-468.
- SOREAU, RODOLPHE. La Fédération Nationale Aéronautique (F. N. A.).
L'Aérophile, 38e année, Nos. 11-12 (15 juin 1930), Paris, pp. 161, 172.
- SORIANO, JORGE. *See* Spain: Anuario de aeronáutica.
- SOUCEK, A. Why we want to fly high.
National Aeronautic Review, Vol. 8, No. 6 (June 1930), Washington, pp. 35-39, ill.
- SOUCEK, MYRRHA. When Apollo was a boy in Oklahoma.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 48-49.
- SOUND. Making air travel quiet.
Curtiss-Wright Review, Vol. 1, No. 4 (July 1930), New York, pp. 14-15, 21, ill.
- Silent flight. Methods of sound proofing and sound elimination.
Western Flying, Vol. 8, No. 1 (July 1930), Los Angeles, Cal., pp. 57, 132.
- *See* Churcher, B. A. G., and A. J. King: Analysis of measurement of noise emitted by machinery.
- *See* Geisse, John H.: The road to noiseless flight.
- *See* Hart, Morris D.: The aeroplane as a source of sound.
- *See* Obata, Jüichi, and Yahei Yosida: Acoustical properties of some sound collectors for the aircraft sound collector.
- *See* Obata, Jüichi, and Yahei Yoshida: The analysis of the sounds emitted by aircraft.
- *See* Sperry Gyroscope Company: Anti-aircraft searchlights and sound locators.
- SOUNDERS. *See* Schreiber, Ernest: The Behm acoustic sounder for airplanes with reference to its accuracy.
- SOUTH AFRICA. Civil aviation in South Africa.
Air annual of the British Empire 1930, London, pp. 149-150.
- *See* Matthias, Joachim: Handelsluftfahrt. Organisation und Entwicklungsmöglichkeiten des britischen Reichsluftweges nach Südafrika.
- SOUTH AMERICA. Las comunicaciones aéreas entre España y América.
Aeronautica, Vol. 4, No. 2 (Feb. 1930), Arnhem, pp. 29-30, maps.

- SOUTH AMERICA.** Great air lines drive for South American trade.
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 36-38, ill.
- On the aircraft trade and South America.
Aeroplane, Vol. 38, No. 11 (Mar. 12, 1930), London, pp. 421-422.
- Passenger and mail air services in South America. Two big American air lines combine.
Flight, No. 1134, Vol. 22, No. 38 (Sept. 19, 1930), London, pp. 1048-1049.
- See Caldwell, Cy.: "Go South, young man!"
- See Gale, Charles H.: The French airboat line to South America.
- See Montgomery, John K.: The wings of South America.
- SOUTH POLE.** See Byrd, Richard Evelyn: Little America, aerial exploration in the Antarctic, the flight to the South Pole.
- SOUTHERN CROSS.** De "Southern Cross" over den Atlantischen Oceaan.
Het Vliegveld, 14de Jaarg., No. 7 (Juli 1930), Amsterdam, pp. 209-212, ill.
- SOUTHWELL, R. V.** Aeronautical progress, 1914-1930.
Engineer, Vol. 149, No. 3878 (May 9, 1930), London, pp. 512-514.
Engineering, Vol. 129, No. 3356 (May 9, 1930), London, pp. 611-613.
- SOUTHWELL, R. V., and LETITIA CHITTY.** On the problem of hydrodynamic stability.—1. Uniform shearing motion in a viscous fluid.
Aer. Res. Comm., Rep. Mem., No. 1200 (Ae. 361), January 1930, London, 1930, pp. 54, ill., diagrs.
- SOVIET.** See Petliakov, V. M.: Aviation progress under the Soviet.
- SPAIGHT, JAMES MOLONY.** Air power and the cities.
 London, New York, Longmans, Green and Co., 1930, pp. ix, 244.
- SPAIN.** Anuario de aeronáutica. Edición oficial de la Dirección General de Navegación y Transportes Aéreos. Año primero 1929.
 Madrid, Graficas Ruiz Ferry [1930], pp. 163, ill., diagrs., tabls.
- Commercial aviation in Spain.
Flight, No. 1137, Vol. 22, No. 41 (Oct. 10, 1930), London, p. 1120.
- See Bentheim, Alexander von: Entre technicos. La defensa nacional.
- See Kirschner, A.: Kritische betrachtungen. Die Luftetats des Auslandes. Personalwechsel in der Leitung der spanischen Zivilluftfahrt.
- See Sanz, Angel B.: Las comunicaciones aereas entre España y América.
- SPAN load.** See Knight, Montgomery, and Richard W. Noyes: Span load distribution on two monoplane wing models as affected by twist and sweep back.
- SPANOGLE, J. A., and JOHN H. COLLINS.** A balanced diaphragm type of maximum cylinder pressure indicator.
 National Advisory Committee for Aeronautics, Technical Notes No. 359, Dec. 9, 1930, Washington, December 1930, pp. 7, ill.
- SPANOGLE, J. A., and H. H. FOSTER.** Performance of a high-speed compression-ignition engine using multiple orifice fuel injection nozzles.
 National Advisory Committee for Aeronautics, Technical Notes No. 344, June 27, 1930, Washington, June 1930, pp. 18, ill., diagrs.
- SPARK plugs.** See Plugs.
- SPARS.** See Armstrong-Whitworth: Test of Armstrong-Whitworth steel spars under combined axial and transverse loading.
- SPARTAN ARROW.** The Spartan "Arrow." A new two-seater with good climb.
Flight, No. 1141, Vol. 22, No. 45 (Nov. 7, 1930), London, pp. 1207-1210, ill.

- SPARTAN ARROW.** *See* Bradbrooke, F. D.: Impressions of the Spartan Arrow.
- SPAULDING, ROLAND H.** Report; problems of aeronautics in the schools, a course given during the 1928 summer session, School of Education, New York University, under the auspices of the Daniel Guggenheim Fund Committee on Elementary and Secondary Aeronautical Education.
New York, The Daniel Guggenheim Fund for the Promotion of Aeronautics, incorporated, 1929, p. 64.
- Some present practices in secondary aeronautical education.
Daniel Guggenheim Fund Committee on elementary and secondary aeronautical education.
- SPEED.** To measure high rotary speeds.
Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, p. 512, illus.
- *See* Carter, W. G.: Flying-boat development for speed research.
- *See* Eula, Antonio: La velocità minima dell'aeroplano e la perdita di velocità.
- *See* Hurel, M.: Pour marcher à la meilleure vitesse en tenant compte du vent.
- *See* Kessler: Beitrag zum Problem der Geschwindigkeitssteigerung der Luftschiffe.
- *See* Pattison, Henry O., jr.: Speed, the industry's greatest selling point.
- *See* Reid, Elliott G.: How fast is maximum speed?
- *See* Sergievsky, Boris: Speed and altitude records made with a load-carrying seaplane.
- *See* Spit, Gijsbert: Snelheidsgrenzen.
- *See* Sutton, Harry A.: Determination of timed high speeds.
- SPEEDOMETER.** *See* Ashdown: The Ashdown Rotoscope.
- SPENCER, G. K.** Pioneer women of aviation.
The Sportsman Pilot, Vol. 3, No. 5 (May 1930), New York, pp. 16-17, 49, ports.
- SPENCER, K. T.** On the effect of altitude upon the distance required for an aircraft to take off and climb 20 metres, given generalised curves of weight reduction necessary if a given aircraft is to comply with the requirements of A. P. 1208 under adverse atmospheric conditions.
Aer. Res. Comm., Rep. Mem., No. 1307, (Ae. 447), October 1929, London, 1930 p. 7, tabl., diagrs.
- SPERRY GYROSCOPE COMPANY.** Anti-aircraft searchlights and sound locators.
Brooklyn, N. Y., Sperry Gyroscope Company, inc., [1930?], pp. 47, ill., diagrs.
- SPIN.** *See* Fuchs, Richard: Mathematical treatise on the recovery from a flat spin.
— *See* Wimperis, H. E.: Spin in aeroplanes.
— *See* Wimperis, H. E.: A study of the phenomenon of spin in aeroplanes.
- SPINS.** *See* Peed, Garland Powell, jr.: Causes and preventions of flat and inverted spins.
- SPINNING.** Spinning characteristics under study.
Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 255, 369-370.
- The spinning symposium of the S. A. E.
Aviation, Vol. 29, No. 4 (October 1930), New York, pp. 227-231, illus., tabls.
- *See* Hovgard, P. E.: Why they spin the way they do.

- SPIT, GIJSBERT.** Beoordeeling van vliegtuigen.
Het Vliegveld, 13de Jaarg., No. 5 (Mei 1929), Amsterdam, pp. 176-177, ill.
- Luchtvaart-problemen.
Het Vliegveld, 14de Jaarg., No. 3 (Maart 1930), Amsterdam, pp. 85-87, ill.
- De luchtvaart-tentoonstelling te Londen.
Het Vliegveld, 13de Jaarg., No. 8 (Aug. 1929), Amsterdam, pp. 278-281, ill.
- Snelheidsgrenzen.
Het Vliegveld, 13de Jaarg., No. 3 (Maart 1929), Amsterdam, pp. 97-98.
- SPLICING.** Universal cable splicing device.
Airway Age, Vol. 11, No. 3 (March 1930), New York, p. 408, ill.
- SPOONER, STANLEY.** Mr. Spooner's coming of age.
Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, p. 54.
- SPRAY.** See Gelalles, A. G.: Some effects of air and fuel oil temperatures on spray penetration and dispersion.
- SPRAY characteristics.** See Gelalles, A. G.: Effect of orifice length-diameter ratio of spray characteristics.
- SPRAY painting.** See Fair, Ernest W.: The "How" of spray painting. A review of spraying practices in some aircraft plants.
- SPRINGFIELD, MASS.** The dedication at Springfield, Mass. Race program and air tour celebrate opening Bowles airport.
Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 938-940, ill.
- SPRINGS, ELLIOTT WHITE.** Dogfights.
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, pp. 30-33.
- STABILITY.** La stabilità laterale.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 341-345, ill.
- See Alippi, Carlo: Une verifica grafica della stabilità alle oscillazioni torsionali di un'ala monoplano a longherone unico.
- See Blenk, Hermann: Flight tests for the determination of static longitudinal stability.
- See Blenk, Hermann: Flugversuche zur Bestimmung der statischen Längsstabilität.
- See Blenk, Hermann: Über die Längsstabilität eines Flugzeuges mit losgelassenem Höhensteuer.
- See Constantin: La stabilité automatique des avions et leur rendement aérodynamique.
- See Cowley, W. L., and Sylvia W. Skan: A simplified analysis of the stability of aeroplanes.
- See Glauert, H.: The stability of a body towed by a light wire.
- See Halliday, A. S., and C. H. Burge: Lateral stability calculations for the Bristol fighter aeroplane.
- See Halliday, A. S.: Stability derivatives of the Bristol fighter.
- See Hegener, Henri: De inherente onstabilité van luchtscheppen.
- See Heinrich, Albert S.: Higher aspect ratios for stability—effects of the airwheel.
- See Hübner, Walter: Messung der Höhensteuerkräfte und der Längsstabilität eines Flugzeuges vom Muster Junkers F. 13 ge.

STABILITY. *See* Hübner, Walter: Relation between the stability characteristics and the controllability of German airplanes.

— *See* Hübner, Walter: Stabilitätseigenschaften und Steuerbarkeit deutschen Landflugzeuge.

— *See* Lapresle, A.: Moments de giration et stabilité de route.

— *See* Lapresle, A.: Girouette aérodynamique et stabilité de forme des planeurs.

— *See* Léglise, Pierre: La stabilisation automatique au moyen des girouettes Constantin.

— *See* Miki, Tetsuo: Die Stabilität, die Lastigkeit der Flugzeuge.

— *See* Vanes, C. H.: Un nouveau stabilisateur expérimenté aux Etats-Unis.

STACK, JOHN. *See* Jacobs, Eastman N., John Stack, and Robert M. Pinkerton: Airfoil pressure distribution investigation in the variable density wind tunnel.

STAINLESS steel. *See* Ragsdale, E. J. W.: Results of research in stainless steel.

STALLED flight. *See* Alston, R. P.: Stalled flight tests on a Bristol fighter fitted with auto control slots and interceptors.

STALLING. *See* Jones, E. T., C. E. Maitland, and W. E. Purdin: Stalled flight tests of a Moth fitted with auto control slots and interceptor.

STAMER, FRITZ, und A. LIPPISCH. Der Bau von Flugmodellen. Teil II für Fortgeschrittene.

Berlin-Charlottenburg, Verlag C. J. E. Volckmann Nachf., 1930, pp. 73, illus.

STAMER, FRITZ. The flying school at the Wasserkuppe.

Journ. Roy. Aer. Soc., Vol. 34, No. 237 (Sept. 1930), London, pp. 747-749.

STAMER, FRITZ, und A. LIPPISCH. Gleitflug und Gleitflugzeuge. Teil I. Konstruktion und praktische Flugversuche.

Berlin-Charlottenburg, Verlag C. J. E. Volckmann Nachf. G. m. b. H., pp. 62, ill.

— Gliding and sail-planing; a beginner's handbook.

London, John Lane 1930, pp. 114, illus. Authorized translation by G. E. Startup and Frances Kinnear.

— Handbuch für Jungsegelflieger. Teil I: Ausbildung, Maschinen, Werkzeuge, Instrumente. Teil II: Aerodynamik, Statik, Fachhautdrucke.

Berlin-Charlottenburg, Verlag C. J. E. Volckmann Nachf. Teil II, pp. 63, ill.

STANDARDIZATION. *See* Falu: Bericht des Fachnormenausschusses für Luftfahrt.

STANDARDS. *See* Army-Navy: Sixth A-N standards conference.

STANTON, T. E. On the distribution of pressure over a symmetrical Joukowski section at high speeds.

Aer. Res. Comm., Rep. Mem., No. 1280 (Ae. 426), October, 1929, London, 1930, pp. 3, ill., diagrs., tabl.

— Tests under conditions of infinite aspect ratio of 4 aerofoils in a high speed wind channel.

Aer. Res. Comm., Rep. Mem., No. 1279 (Ae. 425), October 1929, London, 1930, pp. 4, diagrs., tabls.

STARBIRD, FRANK K. Load measurements on aircraft tires.

Aviation, Vol. 29, No. 4 (October 1930), New York, p. 245, ill., diagr.

STARTERS. Self-starters for aero-engines.

Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, pp. 499-500, illus.

- STARTUP, GEORGE EMERSON.** *See* Stamer, Fritz, and A. Lippisch: Gliding and sail-planing; a beginner's handbook.
- STATE CONTROL.** *See* Sands, A. B.: State control of aviation in Connecticut.
- STATISTICS.** *See* Walter, Franz: Der Motorflugsport im Deutschen Luftfahrt-Verband. Statistischer Rückblick 1929.
- STAY, W. J. VAN DER.** *See* Nobile, Umberto: Die Vorbereitungen und die wissenschaftlichen Ergebnisse der Polarexpedition der "Italia."
- STEARNS, MYRON M.** Over "The hump" at dawn.
U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 22-25.
- STEEL.** Steels and alloys.
Air annual of the British Empire 1930, London, pp. 572-605, ill.
- See Hatfield, W. H.: Steels used in aero work.
- See Johnson, J. B.: Alloy steel sheets for aircraft.
- See Metals, Metal construction.
- See Mutchler, W. H., and R. W. Buzzard: Methods for the identification of aircraft tubing of plain carbon steel and chromium-molybdenum steel.
- See Ragsdale, E. J. W.: Results of research in stainless steel.
- STEEL spars.** *See* Armstrong-Whitworth: Test of Armstrong-Whitworth steel spars under combined axial and transverse loading.
- STEEL tubes.** *See* Hackett, W. W.: Weldless steel tubes and their uses.
- STEERING.** *See* Bradfield, F. B.: Maximum force on rudders.
- STEHLIN, PAUL.** *See* Immelmann, Max: Mes vols de combat. Traduit de l'allemand par Paul Stehlin.
- STEINITZ, OTTO.** Knick- und Biegefestigkeit von Hohl-Profilen. (Forschungsarbeit des e. V. "Fortschrittliche Verkehrstechnik.")
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 3. Heft (14 Feb. 1930), München, pp. 57-60, ill.
- STEINMETZ, CHARLES P.** America's first glider club.
The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 26-27, 46, ill.
- STEPHAN, B.** Aan de nagedachtenis van Van Lear Black.
Het Vliegveld, 14de Jaarg., No. 10 (Oct. 1930), Amsterdam, p. 317.
- In memoriam Ir. J. C. G. Grasé.
Het Vliegveld, 13de Jaarg., No. 9 (Sept. 1929), Amsterdam, pp. 316-317, port.
- STERN, W. J.** *See* Nayler, J. L., and E. Ower: Aviation of to-day, its history and development . . . with a chapter on aircraft engines by W. J. Stern . . .
- STEUART, M.** The broad skyway; a manual of private flying.
London, Aeronautics Ltd., 1930, p. 118, illus.
- STEVENS, ALBERT W.** Aerial photography by infra-red rays.
The August Scientific Monthly, Vol. 31, No. 2 (Aug. 1930), New York, pp. 184-187, ill., map, port.
- Capt. Albert W. Stevens.
U. S. Air Services, Vol. 15, No. 2 (Feb. 1930), Washington, p. 19, port.
- STEVENS, F. W.** The gaseous explosive reaction at constant pressure—the reaction order and reaction rate.
National Advisory Committee for Aeronautics, Report No. 337, Feb. 12, 1930, Washington, U. S. Government Printing Office 1929, pp. 16, diagrs., tabs.

- STEVENS, H. L., and A. E. WOODWARD NUTT. Charts for aircraft performance reduction.
Aer. Res. Comm., Rep. Mem., No. 1316 (Ae 453), April 1930, London, 1930, pp. 19, diagrs., tabs.
- STEVENS, H. L. Testing aeroplane controls.
Flight, No. 1142, 1143, Vol. 22, No. 46, 47 (Nov. 14, 21, 1930), London, pp. 1250-1251, 1375-1377.
- STEWART. High altitude equipment of aircraft.
Jour. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 415-422.
- STEWART, CHARLES JOHN. Aircraft instruments.
London, Chapman and Hall, Ltd., 1930, pp. xix+269+30, illus., diagrs.
- STEWART, OLIVER. Acrobatics.
London, Isaac Pitman & Sons, 1929, pp. 78, ill.
- Service aircraft.
Air annual of the British Empire, 1930, London, pp. 43-50.
- STICH, GEORGE I. The beginning of aircraft standardization. An interview with George I. Stich.
U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 41-42.
- STIEGLITZ, ALBERT. Neuere Ergebnisse auf dem Gebiet der Kurbelwellenschwingungen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 280-288, illus., diagrs.
Luftfahrforchung, Band 6, Heft 4, 1930, München und Berlin, R. Oldenbourg.
- See Kamm, Wunibald, und Albert Stieglitz: Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."
- STILES, W. S. The international aviation lighting meeting in Berlin.
The Aeroplane, Vol. 38, No. 20 (May 14, 1930), London, pp. 882-886.
- STIMSON, THOMAS E., jr. If you want to form a glider club—here's how.
Western Flying, Vol. 8, No. 2 (Aug. 1930), Los Angeles, Calif., pp. 52-54, illus.
- The safest plane.
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Calif., pp. 57, 156, illus.
- Trained men wanted. The job situation in engine factories.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., pp. 50-53, ill.
- STOKES, P. H. Performance of a compression ignition unit with reduced intake and exhaust pressures.
Aer. Res. Comm., Rep. Mem., No. 1328, (E. 38), December 1929, London, 1930, pp. 20, illus., diagrs., tabs.
- STOLEN aircraft. See McBoyle, William W.: Are airplanes motor vehicles? Supreme Court asked to decide if auto law applies to stolen aircraft.
- STOUGHTON, BRADLEY. Metals used in aircraft construction.
Metals and Alloys, Vol. 1, No. 7 (Jan. 1930), Washington, pp. 317-324, tabs., diagrs.
- STOUT, WILLIAM B. And now let's get down to work.
Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 674-677.
- Getting the public to fly.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 137-138.
- See Amick, Hugh: Whence come new facts the world awaits? From the shed-shops of America, says William B. Stout.
- STRAHLMANN, F. Zwei deutsche Luftschiffhafen des Weltkrieges.
Oldenburg, Oldenburger Verlagshaus Lindenallee.

STRAINS and stresses. *See* Deutsche Versuchsanstalt für Luftfahrt, e. v.: Vorläufige belastungsannahmen für die festigkeitsberechnung von flugzeugen . . . December 1930.

STREAMLINE bodies. *See* Lock, C. N. H., and F. C. Johansen: Pressure plotting a streamline body with tractor airscrew running. Part II.—Airscrew in rear position.

— *See* Ower, E., and C. T. Hutton: Investigation of the boundary layers and the drags of two streamline bodies.

STRENGTH calculations. *See* Load: Load assumptions for calculating the strength of airplanes.

STRESSES. *See* McCollum-Peters: The McCollum-Peters six element telemeter strain gauge set.

— *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim.

STRINDBERG, NILS. *See* Svenska Sällskapet för Anthropologi och Geografi: Andrée's story; the complete record of his polar flight, 1897, from the diaries and journals of S. A. Andrée, Nils Strindberg, and K. Fraenkel, found on White Island in the summer of 1930 and edited by the Swedish society for anthropology and geography; translated from the Swedish by Edward Adams-Ray.

— *See* Svenska Sällskapet för Anthropologi och Geografi: Dem pol entgegen; auf grund der während Andrées polarexpedition 1897 geführten und 1930 auf Vitö gefundenen tagebücher S. A. Andrées, N. Strindbergs und K. Fraenkels, herausgegeben von der Schwedischen Gesellschaft für Anthropologie und Geographie.

STROBOGLOW. Moving propeller made to appear motionless.
Airway Age, Vol. 11, No. 7 (July 1930), New York, p. 978.

STROTHER, D. H. *See* Heald, R. H., D. H. Strother, and B. H. Monish: Effect of variation of chord and span of ailerons on rolling and yawing moments at several angles of pitch.

STRUCTURAL design. Miscellaneous collected airplane structural design data formulas, and methods.

Air Corps Information Circular, Vol. 7, No. 644 (March 1, 1930), Washington, United States Government Printing Office, 1930, pp. 7, illus., diagr., tabl.
Air Corps Technical Report No. 3083.

STRUCTURAL strength. *See* Mettam, H. A.: Structural strength requirements for civil aircraft in Great Britain and the U. S. A.

STRUGHOLD, H. Flugphysiologische Studien. II. Sauerstoffmangel und die Feinheit der Wahrnehmung der Gliederbewegung.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 9. Heft (14. Mai 1930), München, pp. 226-228, illus.

— Kinematographische Studie der Herzgrossen bei Sauerstoffmangel. ("Direkteleffekt" auf das Herz.)

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 24. Heft (29. Dez. 1930), München, pp. 645-648, illus., diagrs., tabl.

STRUTS. *See* Hartshorn, A. S.: Wind tunnel tests of seven struts.

— *See* Smith, R. H.: Aerodynamic theory and test of strut forms—II.

— *See* Teichmann, Alfred: Effects of the end fixation of airplane struts.

STUBBLEFIELD, BLAINE. Flying backwards.

U. S. Air Services, Vol. 15, No. 1 (Jan. 1930), Washington, pp. 30-33.

STUDLEY, BARRETT. How to fly. The pilot and his problems.
New York, The Macmillan Co., 1929, pp. xii, 291, ill.

STUTTGART. See Pirath, Carl: Forschungsergebnisse des Verkehrswissenschaftlichen Instituts für Luftfahrt an der Technischen Hochschule Stuttgart.

SUARD, L. See Landwerlin, H., et L. Suard: Essais et calcul des roues et des organes amortisseurs.

SUDAN. Air survey in the Sudan.

Aeroplane, Vol. 38, No. 2 (Jan. 8, 1930), London, p. 62, ill.

SUDECK, GÜNTHER. Über die Sendecharakteristik von Flugzeugscheppanten-nen.

Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 579-586, diagrs., tabs.

SUEZ CANAL. See Escalle, H. de l': Une escadrille d'avions de la marine fran-çaise au Canal de Suez.

SUHARA, TOYOTARŌ, NAOZŌ SATŌ, and SIDUTAKE KAMEI. A new ultra-speed kinematographic camera taking 40,000 photographs per second.

Report of the Aeronautical Research Institute, Tōkyō Imperial University, No. 60 (Vol. 5,7), (May 1930), Tōkyō, pp. 187-194, illus.

SULLIVAN, J. E. Combating corrosion of aircraft metal parts.

Aviation, Vol. 28, No. 5 (Feb. 1 1930), New York, pp. 201-204, ill.

SUMMERVILLE, WAYNE L. See Peters, Melville F., Wayne L. Summerville, and Merlin Davis: An investigation of the effectiveness of ignition sparks.

SUMNER, P. H. Comparison of aircraft.

The Aircraft Engineer, Flight Engineering Section, Suppl. to No. 1126, Vol. 22, No. 30 (July 25, 1930), London, pp. (838a-838d), 49-52, tabs.

SUMNER, PERCY JAMES HAMMOND. Marine aircraft; elementary naval archi-tecture.

London, C. Lockwood & Son, 1930, pp. xv, 196, illus.

SUPERCHARGERS. See Johnston, S. Paul: The present status of aircraft-engine superchargers.

— See Lorenzen, Christian: The Lorenzen gas turbine and supercharger for gasoline and Diesel engines.

— See Moss, S. A.: Geared centrifugal superchargers for airplane engines.

— See Moss, S. A.: Superchargers for engines.

— See Ricardo, H. R.: The supercharging and compounding of aero engines.

— See Schey, Oscar W., and Alfred E. Young: Comparative flight performance with an N. A. C. A. Roots supercharger and a turbo-centrifugal super-charger.

SUPERMARINE. The Supermarine Aviation Works, Ltd. Proprietors: Vickers (Aviation) Ltd. Supermarine flying boats, yachts, and high-speed racing seaplanes.

Air Annual of the British Empire 1930, London, pp. 542-561, ill.

SURFACE coatings. See Knight, Montgomery, and William C. Clay: Refrig-erated wind tunnel tests on surface coatings for preventing ice formation.

SURVEYING. See Aircraft Operating Company: The Aircraft Operating Com-pany, Ltd.

— See Australia: Aerial survey of central Australia.

SURVEYING. *See* Bourne, R.: Air survey within the Empire. A summary of the general conclusions reached in recent research.

— *See* Durward, J.: Air-photography surveys.

— *See* Gloster: Introducing the Gloster survey.

— *See* Hotine, M.: Professional papers of the air survey committee. No. 5. Calibration of surveying cameras. No. 6. Extensions of the "Arundel" method.

— *See* Roussilhe, H.: Emploi de la photographie aérienne aux levers topographiques à grande échelle.

— *See* Somerville, H. A.: Geodetic surveying by air.

— *See* Sudan: Air survey in the Sudan.

SUTTER, KARL. Untersuchungen über den Luftwiderstand: Ergebnisse von Versuchen an Eisenbahnzügen in Tunnels.

München und Berlin, R. Oldenbourg, 1930, pp. VII, 71, ill.

SUTTON, HARRY A. Determination of timed high speeds.

Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 99-100, diagrs.

SVEHLA, GEORGE. Inspection of aircraft metals.

Aero Digest, Vol. 16, No. 1 (Jan. 1930), New York, pp. 75, 246, ill.

— A survey of civil aviation in the southwest. Part 1: Air-transport operations.

Aero Digest, Vol. 17, No. 2 (Aug. 1930), New York, pp. 35-37, 58, 170, 172, 174, 176, 178, ills.

— A survey of civil aviation in the southwest. Part 2: Airports, Manufacturers, etc.

Aero Digest, Vol. 17, No. 3 (Sept. 1930), New York, pp. 52-54, 162, 164, 166, ills.

SVENSKA Sällskapet för Anthropologi och Geografi. Andrée's story; the complete record of his polar flight, 1897, from the diaries and journals of S. A. Andrée, Nils Strindberg, and K. Fraenkel, found on White Island in the summer of 1930 and edited by the Swedish Society for Anthropology and Geography; translated from the Swedish by Edward Adams-Ray.

New York, The Viking Press, 1930, xvi, 389, ills., maps, diagrs.

— Dem Pol entgegen; auf Grund der während Andréës Polarexpedition 1897 geführten und 1930 auf Vitö gefundenen Tagebücher S. A. Andréës, N. Strindbergs und K. Fraenkels, herausgegeben von der Schwedischen Gesellschaft für Anthropolologie und Geographie.

Leipzig, F. A. Brockhaus, 1930, pp. xiii, 278, ills., diagrs.

SWAN, ANDREW. Compression-ignition engines.

Air annual of the British Empire 1930, London, pp. 355-365, ill., tabls.

SWEDEN. *See* Plummer, Harry Chapin: Civil aviation in Sweden.

SWITZERLAND. *See* Schaeffer, E.: Im Zeppelin über der Schweiz.

SWOFFER, FRANK A. Learning to fly.

London, Sir Isaac Pitman & Sons, Ltd.

SZEKELY, O. E. New cylinder arrangements—Self-contained power plants.

Aviation, Vol. 28, No. 11 (Mar. 15, 1930), New York, p. 534.

SZONDY, V. DE. *See* Danilovics, P. de, et V. de Szondy: Les infractions à la loi pénale commises à bord des aéronefs.

T

T. A. T. *See* Lane, D. R.: The T. A. T.-Maddux operating organization and methods.

TAFT, P. J. Successful air transport operations.

U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 38-39.

TAGLIASACCHI, LUIGI. Norme di collaudo statico e proposte di amendmenti alle vigenti norme nazionali.

Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 217-220.

TAIL. See Lippisch, A.: Les nouveaux essais d'avions sans queue.

TAIL flutter. See Duncan, W. J., and A. B. Collar: Tail flutter of a particular aeroplane.

— See Frazer, R. A., and W. J. Duncan: The flutter of aeroplane tails.

TAIL group. Spornformen und Bremsanlagen für Grossflugzeuge.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 13 (29. März 1930), Berlin, pp. 410-411, illus.

TAIL loads. Proposed method of determining design tail loads for airplanes.

Air Corps Information Circular, Vol. 7, No. 650 (May 10, 1930), Washington, United States Government Printing Office, 1930, pp. 9, illus., tabs., diagrs.
Air Corps Technical Report No. 3148.

TAIL skid. See Michael, Franz: Versuche mit einer neuen Spornform für Flugzeuge. (DVL-Sporkufe.)

TAIL surfaces. See Rhode Richard V.: Pressure distribution on the tail surfaces of a PW-9 pursuit airplane in flight.

TAIL trolley. A power-driven tail trolley.

Flight, No. 1148, Vol. 22, No. 52 (Dec. 26, 1930), London, pp. 1480-1481, illus.

TAILLESS. See Lippisch, Alexander: Recent tests of tailless airplanes.

— See Sodenhof: The Sodenhof tailless 'plane. A Swiss light 'plane two-seater.

TAMM, WILHELM. Anhang. Die Versuchsanordnungen für Gaswechselversuche. Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 671-672, ill.

— See Wilhelm Tramm.

TANGER. See Guggenheim: The Guggenheim prize winner.

— See Stimson, Thomas E., jr.: The safest plane.

TANKS. See Finch, Volney C.: Airplane fuel and oil tank design.

TANNER, T. The forces on a yacht's sail.

Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 880-888, ill., diagrs., tabs.

TAPSELL, H. J., S. L. ATCHBUTT, and J. W. JENKIN. Mechanical properties of pure magnesium and certain magnesium alloys in the wrought condition (continued). Mechanical properties of "Electron" alloy.

Aer. Res. Comm., Rep. Mem., No. 1285, (M. 66), February 1928, London, 1930, pp. 9, illus., diagr., tabs.

TARANTINI, LELLO. La produzione aeronautica per l'aviazione civile negli Stati Uniti d'America.

Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 75-83.

TASCA, GIUSEPPE BONGIORNO. Il tramonto della metropoli.

Riv. Aeron., Anno 6, N. 8 (Agosto 1930), Roma, pp. 221-259.

TASMANIA. See Australia: Report together with minutes of evidence relating to the proposed development of the civil aerodrome at Western Junction, Tasmania. . .

TATE, W. J. On the way somewhere.

Aeronautic Review, Vol. 8, No. 1 (Jan. 1930), Washington, p. 47, port.

- TAUB, ALEX.** Powerplant economics. Discussion of Alex Taub's semi-annual meeting paper.
Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 305-310, ports.
- TAXI.** The air taxi. Shilling a mile travel with speed and comfort.
Flight, No. 1128, Vol. 22, No. 32 (Aug. 8, 1930), London, pp. 902-903.
- TAYLOR, C. FAYETTE.** Chicago base.
Curtiss-Wright Review, Vol. 1, No. 4 (July 1930), New York, pp. 7-10, ill.
- TAYLOR, C. FAYETTE**, and **EDWARD S. TAYLOR**. Crash fire tests with Diesel oil.
Aviation, Vol. 29, No. 5 (November 1930), New York, pp. 283-285, ill.
- TAYLOR, C. FAYETTE**, and **A. REHBOCK**. Rate of heat transfer from finned metal surfaces. Progress report on investigations at Aeronautical Engineering Department, Massachusetts Institute of Technology.
 National Advisory Committee for Aeronautics, Technical Notes No. 331, Jan. 31, 1930, Washington, January 1930, pp. 21, ill., diagrs.
- TAYLOR, JAMES B., jr.** Choosing an airplane for private ownership.
The Winged Foot, Vol. 41, No. 7 (July 1930), New York, pp. 16, 34.
- TAYLOR, SLOAN.** See Iseman, John W., and Sloan Taylor: The book of airplanes.
- TEALE, EDWIN WAY.** The book of gliders; with an introduction by W. H. Bowls.
 New York, E. P. Dutton & Co., inc., 1930, pp. xiv, 379, ill., diagrs.
- TEED, P. L.** Advice to the crew of R. 101.
The Aeroplane, Vol. 39, No. 14 (Oct. 1, 1930), London, pp. 766-768, ill.
- British airship policy.
The Aeroplane, Vol. 39, No. 8 (Aug. 20, 1930), London, pp. 458-462.
- TEICHMANN, ALFRED.** Ausknicken von K-Verbänden aus ihrer Ebene.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 20. Heft (29. Okt. 1930), München, pp. 534-535.
- Effects of the end fixation of airplane struts.
 National Advisory Committee for Aeronautics, Technical Memorandums No. 582, Sept. 11, 1930, Washington, September 1930, pp. 25, ill.
- Einspannwirkung bei Knickstäben in Flugzeug-Fachwerken.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 221-226, ill.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 10. Heft (28. Mai 1930), München, pp. 249-254, ill.
- TEICHMANN, ALFRED**, and **KARL BORKMANN**. Versuche mit kurzen Bolzen in Holzbauteilen.
Jahrbuch 1930 der Deutschen Versuchsanstalt für Luftfahrt, E. V., München und Berlin, 1930, pp. 200-220, ill., diagrs., tabls.
Luftfahrtforschung, Band 8, Heft 1, 1930, München und Berlin, R. Oldenbourg.
- TELEPHONY.** Hello!—Pilot?
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, pp. 33, 49, ill.
- See Eisner, Franz: Anwendung der Silbenverständlichkeitsmessungen in der drahtlosen Telephonie.
- TEMPERATURE:** See Schw., A.: Temperaturdifferenzmesser für das Luftschiff "Graf Zeppelin."
- TENANI, M.** La bussola magnética in volo.
L'Aerotecnica, Vol. 10, N. 5 (Maggio 1930), (Anno VIII), Roma, pp. 369-377, ill., tabls.
- TENNESSEE.** See Lance, O. B.: Tennessee's sky harbor.
- TENSOR notation.** See Lock, C. N. H.: The equations of motion of a viscous fluid in tensor notation.

- TEOFILATO, P. The nineteenth meeting of the Italian Society for the Advancement of Science in tridentine Venetia.
L'Aeroteenica, Vol. 10, N. 11-12 (Nov.-Die. 1930), Roma, p. 979.
- TESTS. See Clarkson, Christopher: Flying tests of modern light aircraft.
II. The Hermes-Avian.
- TÉTU. See Guyomar: Le problème du contrôle du bombardement et la méthode du Lieutenant-Colonel Tétu.
- THAUSS, ARNO. Eine drahtlose Luftschiffstation vor zwanzig Jahren.
Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, p. 81.
- THELIN, C. MILO. Long bascule doors in new Fort Worth hangar. Structure with concrete tile walls and steel roof trusses entered through two openings 60 and 100 ft. wide by 18 ft. high.
Engineering News-Record, Vol. 104, No. 22 (May 29, 1930), New York, pp. 894-895, ill.
- THERMAL expansion. See Jardine, Frank: Thermal expansion in automotive-engine design.
- THERMOCOUPLE. Millivolt-temperature relation of the Standard Air Corps iron-Constantin thermocouple.
Air Corps Information Circular, Vol. 7, No. 654 (Aug. 30, 1930), Washington, United States Government Printing Office, 1930, pp. 4, diagrs., tabls.
Air Corps Technical Report No. 3280.
- THERMODYNAMICS. See Löhner, Kurt: Thermodynamische Aufgaben der Luftfahrtforschung.
- THERMOMETERS. See Hendrickson, Henry Brenton: Thermometric lag of aircraft thermometers, thermographs, and barographs.
- THAYER, WENDELL G. The financial side.
Western Flying, Vol. 7, No. 1 (Jan. 1930), Los Angeles, Calif., p. 112, diagr.
- THIEBLOT, ARMAND. See Fradiss, Jean, and Armand Thieblot: Construction of airfoil sections and wing generation.
- THIEMANN, A. E. Baustähle und Triebwerksbemessung in amerikanischen Flugmotoren.
Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 153-155, tabls.
- Kraftanlage und Geschwindigkeit von Luftschiffen.
Das Luftschiff, 2. Jahrg., Nr. 3, 4, 1930, Berlin, pp. 19-20, 28-32, ill.
Die Luftwacht, Heft 6 (Juni 1930), Berlin, pp. 277-283.
- THIN plates. See Hilbes, W.: Riveted joints in thin plates.
- THIVAT, ANTHONY. The covering of curved surfaces.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1174-1178, ill.
- THOLE, F. B. See Dunstan, A. E., and F. B. Thole: Fuels and dopes for aircraft engines.
- THOMAS, ERIK. Havarie und Untergang des Luftschiff SE-ACG.
Das Luftschiff, 2. Jahrg., Nr. 10/11, 1930, Berlin-Charlottenburg, pp. 83-84.
- THOMAS, FRANCIS. La crise de l'aéronautique française et l'œuvre du Ministère de l'Air.
Paris, Les Presses Universitaires de France, 1930, pp. 182.
- THOMAS, W. E. *Tommy*. The old and new aircraft engines.
Western Flying, Vol. 7, No. 2 (Feb. 1930), Los Angeles, Calif., pp. 70-71, 150, ill.

- THOMPSON, DONALD. Probing earth's secrets by air.
National Aeronautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 19, 23, 26, ill.
- THOMPSON, EDWIN G. The executive goes cross country.
Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 207-208.
- The parts distributor and his dealers.
Aviation, Vol. 28, No. 14 (April 5, 1930), New York, pp. 708-710, ill.
- THOMPSON, F. L. Full-scale turning characteristics of the U. S. S. Los Angeles.
National Advisory Committee for Aeronautics, Report No. 333, Jan. 29, 1930, [Washington, U. S. Government Printing Office, 1929], pp. 14, ill., diagrs., tabl.
- Water distribution on a flying boat hull.
National Advisory Committee for Aeronautics, Report No. 346, July 31, 1930, Washington, U. S. Government Printing Office 1930, pp. 18, ill., diagrs., tabls.
- THOMPSON, H. H. A proposed new design of airport. System developed to control traffic by light.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1213-1216, ill.
- THOMPSON, JAMES G. Engine service and maintenance. Part I—Routine inspection.
Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Calif., pp. 38-39, 102.
- THOMPSON, THEODORE ELLSWORTH. See Bedell, Frederick: The airplane; a practical discussion of the principles of airplane flight, rewritten and enlarged with the assistance of Theodore E. Thompson.
- THORNHILL, G. System in the industry.
Aero Digest, Vol. 16, No. 4 (Apr. 1930), New York, pp. 51-52, ill.
- THORPE, LESLIE AARON. A text book on aviation; the cadet system of ground school training.
San Francisco, Aviation Press, 1929, 4 vols. ill., map, diagrs.
- THURSTON, A. P. Rotary "Thumbs." Further details of Dr. Thurston's invention.
Flight, No. 1125, Vol. 22, No. 29 (July 18, 1930), London, p. 820, ill.
- TIBET. See Bouscat: Une mission aérienne dans la région du Tibesti.
- TICKETS. See Edmunds, John K.: Aircraft passenger ticket contracts.
- TILLEY, N. M. Small airplane engines.
Journ. Soc. Automotive Engineers, Vol. 26, No. 3 (Mar. 1930), New York, pp. 346, 371.
- TIRES. See Starbird, Frank K.: Load measurements on aircraft tires.
- TIROL. See Feuerstein, Valentin: Der Heimatluftschutz in Tirol während des Weltkrieges.
- TIZARD, H. T. See Maitland, C. E., and A. E. Woodward Nutt: Flight tests on the variation of the range of an aircraft with speed and height.
- TÖPPER, CARL. Rechnung und Messung an Windkraftmaschinen.
Technische Mechanik und Thermodynamik, Bd. 1, Nr. 10 (Ott. 1930), Berlin.
- TOMLINSON, DANIEL WEBB. The sky's the limit.
Philadelphia, Macrae Smith Company, 1930, pp. 289, ill.
- TOMOTIKA, SUSUMU. On the resistance experienced by a cylinder moving in a channel of finite breadth.
Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 58, (Vol. 5, 5), (Mar. 1930), Tôkyô, pp. 101-142, ill.

- TOMOTIKA, SUSUMU.** On the stability of Kármán vortex street in a channel of finite breadth, II.
 Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 55 (Vol. 5, 2), (Jan. 1930), Tôkyô, pp. 48, diagrs., tabs.
 Proc. Phys.-Math. Soc. Japan, Ser. III, Vol. 12, 1930, Tôkyô, pp. 149-163.
- TORNADO.** See Carter, B. C., and N. S. Muir: Torsional vibration of crankshafts Beardmore "Tornado" airship-engine investigations.
- TORSIOGRAPH.** See Royal Aircraft Establishment: Torsional vibration of crankshafts. A description of the R. A. E. MK. III torsigraph.
- TORSION.** See Trayer, George William, and H. W. March: The torsion of members having sections common in aircraft construction.
- TOULOUSE.** See Faucher, D.: Toulouse, tête de lignes aériennes.
- TOURING.** Images de tourisme aérien.
 L'Illustration, 88me année, No. 4549 (10 mai 1930), Paris, p. 61, ill.
- See International Touring Competition: International Touring Competition. Competitors starting on Sunday.
- TOUSSAINT, A.** La aviación actual. Estudio aerodinámico y ensayos de los aviones. La aviación actual y la seguridad .Versión de M. Moreno Carraciolo.
 Barcelona, Montaner y Simón, 1930, pp. 342, ill.
- TOUSSAINT, A., et E. CARAFOLI.** Théorie et tracés des profils d'ailes sustentatrices.
 Paris, E. Chiron Editeur, Librairie Aéronautique, pp. 121, ill.
- TOWNEND.** The Townend-type ring in the U. S. A.
 Aeronautical Engineering, Suppl. to The Aeroplane, Vol. 39, No. 9 (Aug. 27, 1930), London, p. 500.
- TOWNEND, H. C. H.** Reduction of drag of radial engines by the attachment of rings of aerofoil section, including interference experiments of an allied nature, with some further applications.
 Aer. Res. Comm., Rep. Mem., No. 1267 (Ae. 413), July 1929, London, 1930, pp. 77, ill., diagrs., tabs.
- The Townend ring.
 Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 813-848, ill., diagrs.
- TRADE.** See Grey, Charles Grey: On trade crusading.
- TRAFFIC.** Air traffic control systems.
 Airway Age, Vol. 11, No. 4 (Apr. 1930), New York, p. 524.
- See Döring, Hermann: Convention concernant le contrat de transport aérien.
- See International Air Traffic Association: De International Air Traffic Association.
- TRAILING edge.** Fortschritte der Flugsicherheit. Die Erfolge des Guggenheim-Sicherheitswettbewerbs.
 Luftschau, 3. Jahrg., Nr. 6 (24. März 1930), Berlin, pp. 44-45, ill.
- See Pinkerton, Robert M.: Analytical determination of the load on a trailing edge flap.
- See Villiers: Un hydravion français à aile à fente: le Villiers 26.
- TRAINING.** See Grey, Charles Grey: On how to get into aviation.
- See Thorpe, Leslie Aaron: A text book on aviation; the cadet system of ground school training.

TRAINING. *See* United States Department of Commerce, Aeronautics Branch. Aviation training, November 1, 1930.

— *See* Von Hoffmann Aircraft School: What aviation offers you.

TRAMM, WILH. *See* Kaiser, Wilh., und Wilh. Tramm: Über die Atmung des Höhenfliegers. Von Wilh. Kaiser.—Die Versuchsanordnungen für Gaswechselversuche. Von Wilh. Tramm.

TRANSATLANTIC. Les traversées transatlantiques en dirigeable. L'Aérophile, 38e année, No. 9 (15 sept. 1930), Paris, p. 265, ill.

TRANSCONTINENTAL AIR TRANSPORT. *See* H. H.: De Transcontinental Air Transport-Maddux luchtlijnen.

TRANSPORTATION. Air transport lines form national systems.

U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, p. 44.

— Air transport. The growth of air transport. Illuminating statistics from all parts of the world.

Flight, No. 1126, Vol. 22, No. 30 (July 25, 1930), London, p. 849.

— *See* Air routes: Civil aviation reference. Air transport routes.

— *See* Clogett, Brice: Air transportation and legal problems.

— *See* Eaton, J. M.: Selling air passenger transportation.

— *See* Edmunds, John K.: Aircraft passenger ticket contracts.

— *See* Henderson, Paul: Air transportation.

— *See* James, Earle K.: Chile's national air lines.

— *See* Jones, R. L., and F. M. Ryan: Abridgment of air transport communication.

— *See* Lanphier, T. G.: The future of air transportation.

— *See* League of Nations: Air transport co-operation committee.

— *See* Nayler, J. L.: Atlantic transport by air.

— *See* Pirath, Carl: Les courants de transports aériens.

— *See* Robertson, F. A. de V.: Air transport in the British Empire.

— *See* Sherrington, C. E. R.: Economics of air transport.

— *See* Vece, Francesco: Caratteristiche del trasporto aereo e le sue possibilità attuali.

— *See* Walker, C. C.: Aircraft as transport vehicles.

— *See* Willcox, H. Case: Air transportation in Latin America.

— *See* Wronsky, Martin: German commercial air transport.

— *See* Young, Clarence M.: Report to President Hoover on progress of the country's air transportation.

TRAYER, GEORGE WILLIAM. The design of plywood webs for airplane wing beams.

National Advisory Committee for Aeronautics, Report No. 344, April 30, 1930, Washington, U. S. Government Printing Office 1930, pp. 17, illus., tabs.

TRAYER, GEORGE WILLIAM and H. W. MARCH. The torsion of members having sections common in aircraft construction.

National Advisory Committee for Aeronautics, Report No. 334, March 12, 1930 [Washington, U. S. Government Printing Office, 1930], pp. 49, illus., diagrs., tabs.

- TRAYER, GEORGE WILLIAM.** Wood in aircraft construction; supply—suitability—handling—fabrication.
 Washington, D. C., Prepared and published by the National Lumber Manufacturers Association, 1930, pp. 276, illus., diagrs.
- See Newlin, J. A., and Geo. W. Trayer: The design of airplane wing ribs.
- See Newlin, J. A., and George W. Trayer: A method of calculating the ultimate strength of continuous beams.
- TRENCHARD.** Lord Trenchard on air power.
 Aeroplane, Vol. 38, No. 18 (April 30, 1930), London, pp. 785-786.
- TRENCKMANN, CLARA.** The women's club takes wings.
 National Aeronautic Review, Vol. 8, No. 5. (May 1930), Washington, pp. 29-32, ill.
- TROJANI, F.** Aviazione. Lezioni tenute agli allievi piloti di aeroplano, 1930 (Compagnia nazionale aeronautica; società anonima).
 Roma, tip. A. Sampaolesi (lit.), 1930, pp. 163, 25, ill.
- TROPICS.** See Downey, H. C.: Airplane maintenance in the tropics. The problems of wood decay and metal corrosion and how they are met.
- TRUAX, THOMAS ROY.** Gluing wood in aircraft manufacture.
 U. S. Department of Agriculture, Technical Bulletin No. 205, Washington, U. S. Government Printing Office, 1930, pp. 58, illus.
- TRUMPF.** Mit dem "Trumpf"—Luftschiff über Berlin.
 Das Lufschiff, 2. Jahrg., Nr. 3, 1930, Berlin, p. 21, ill.
- TUBES.** See Hackett, W. W.: Weldless steel tubes and their uses.
- TUBING.** See Blyth, W. C.: Petrol-flex tubing.
- See Hollyhock, W. S.: Tube stocks.
- See Knerr, Horace: Identification of aircraft tubing by Rockwell test.
- TULSA, OKLA.** See Short, C. W., jr.: The Tulsa, Okla., municipal airport.
- TURBULENCE.** See Dryden, H. L., and A. M. Kuethe: Effect of turbulence in wind tunnel measurements.
- TURN.** See Merkel, W.: Über die Kurve.
- TURN indicator.** See Brown, S. G.: A new star on the horizon.
- TURNER, C. C.** Flying club progress. Private ownership and maintenance.
 Air annual of the British Empire 1930, London, pp. 174-190.
- The Royal Aero Club.
 Air annual of the British Empire 1930, London, pp. 167-173.
- TURNER, THOMAS C.** Flying with the marines in Nicaragua.
 National Aeronautic Magazine, Vol. 8, No. 10 (Oct. 1930), Washington, pp. 11-13, 16, 25-26, 31-32, ill.
- TURNING.** See Hardy, J. K.: Experimental comparison between a series of turns of different diameter on a Gloster IV seaplane.
- URNS.** See Williams, Frank: Turns—How to do them.
- TUXHILL, F. WESLEY.** This export situation.
 Airway Age, Vol. 11, No. 7 (July 1930), New York, pp. 957-960, ill.
- TYPES.** Coefficients of efficiency of certain types of aircraft.
 Mech. Eng., Vol. 52, No. 2 (Feb. 1930), New York, pp. 149-152.
- TYRES.** See Walters, N.: Aeroplane wheels and tyres.
- TYSON, OTIS R.** Air Ferries, Ltd., in operation.
 Airway Age, Vol. 11, No. 5 (May 1930), New York, pp. 665-666, ill.

U

UGOLINI, GIOVANNI B. Contributo sperimentale allo studio del regime uniforme laminare.

Annali dei Lavori Pubblici, 1930.

ULLENDORFF, HANS. Russia plans growth in the air.

Airway Age, Vol. 11, No. 2 (Feb. 1930), New York, pp. 206-208, ill., tabls.

ULSTER. Ulster T. T. races, August 23rd. Air route to Belfast.

Flight, No. 1129, Vol. 22, No. 33 (Aug. 15, 1930), London, pp. 931-932.

UNDERCARRIAGE. See Landing gear.

UNITED AIRPORT. See Burbank, California: The United Airport at Burbank Calif.

UNITED STATES. Amerikas Interesse am Luftschiff.

Das Luftschiff, 2. Jahrg., Nr. 5/6, 1930, Berlin-Lichterfelde, pp. 43-44, ill.

— The 1930 American National Air Races.

The Aeroplane, Vol. 39, No. 12 (Sept. 17, 1930), London, pp. 657-664.

— La production américaine en 1929.

L'Aéronautique, 12me année, No. 130 (mars 1930), Paris, pp. 109-110, ill., tabl.

— See D., Ch.: D'Allemagne en Amérique.

— See H.: De nieuwe Amerikaansche marineluchtschepen.

— See H. H.: De Transcontinental Air Transport-Maddux luchtlijnen.

— See Jambon, Bernard J.-L.: L'état de l'industrie aéronautique aux Etats-Unis.

— See Kirschner, A.: Luftpolitik. Die Weltluftmächte. 8. Kap. Die Vereinigten Staaten von Amerika als Luftmacht.

— See Mori, Angelo: Alcune considerazioni e confronti sulle norme di collaudo dell'aviazione italiana e americana.

— See Mounier, P. J. J.: Hoe Amerika luchtlijnen exploiteert. Fokker en de Western Air Express.

— See Mounier, P. P. J.: De nieuwe luchtreuzen der Western Air Express.

— See Rühl, Karl: Die amerikanische Luftfahrt, 1929.

— See Tarantini, Lello: La produzione aeronautica per l'aviazione civile negli Stati Uniti d'America.

— See ZMC2: Le dirigeable métallique ZMC2 (Amérique).

UNITED STATES BUREAU OF LABOR STATISTICS. Wages and hours in the manufacture of airplanes and aircraft engines, 1929 . . . November, 1930.

Bulletin of the United States Bureau of Labor Statistics, No. 623. Washington, United States Government Printing Office, 1930, pp. iii, 53, tabls.

UNITED STATES CONGRESS. House—Committee on Mines and Mining.

Amarillo helium plant. Hearings before the Committee on Mines and Mining, House of Representatives, Seventy-first Congress, second session, on H. R. 10200. April 29, May 13, 16, 20, 23, and 24, 1930.

Washington, United States Government Printing Office, 1930, pp. 231, tabls., diagrs.

— House—Committee on Naval Affairs. Award of the distinguished-flying cross to members of the Alaskan aerial survey expedition . . . Report. To accompany H. R. 3801.

Washington, U. S. Government Printing Office, 1930, pp. 6. 71st Congress, 2d Session. House. Report 882.

UNITED STATES CONGRESS. House—Committee on Post-Office and Post Roads. Air-mail flyer's medal of honor . . . Report. To accompany H. R. 101. Washington, U. S. Government Printing Office, 1930, pp. 2.

— Senate—Committee on Post Offices and Post Roads. Air-mail flyer's medal of honor . . . Report. To accompany H. R. 101 . . . Washington, United States Government Printing Office, 1930, pp. 2. 71st Congress, 3d session. Senate. Report 1192.

UNITED STATES DEPARTMENT OF AGRICULTURE. Weather Bureau. Instructions for making aerological observations, by means of kites, airplanes, sounding balloons, limited-height sounding balloons, free-rising captive balloons, ceiling balloons.

Washington, U. S. Government Printing Office, 1930, pp. iv, 94, illus., diagrs.

— See Lathrop, Frank Heidtman, and C. B. Nickels: A comparative study of dusting by means of airplane and ground machine for the control of the blueberry maggot.

UNITED STATES DEPARTMENT OF COMMERCE. Aeronautics Branch. Air traffic rules (Extract from Air Commerce regulations) September 1, 1930.

Aeronautics Bulletin No. 15. Washington, U. S. Government Printing Office, 1930, pp. ii, 12.

— Aeronautics Branch. Airways bulletins issued by the United States Department of Commerce.

Washington, United States Government Printing Office.

— Airway map of the United States. July 1, 1930.

Aeronautics Bulletin No. 8. Washington, U. S. Government Printing Office, 1930, map.

— Airworthiness requirements of air commerce regulations for engines and propellers.

Aeronautics Bulletin No. 7-G. Washington, U. S. Government Printing Office, 1930, pp. ii, 9, illus., tabls.

— Aviation training. November 1, 1930.

Aeronautics Bulletin No. 19. Washington, U. S. Government Printing Office, 1930, pp. ii, 13.

— Establishment and operation of Department of Commerce intermediate landing fields. July 1, 1930.

Aeronautics Bulletin No. 11. Washington, U. S. Government Printing Office, 1930, pp. ii, 8.

— The federal airways system. December 1, 1930.

Aeronautics Bulletin No. 24. Washington, U. S. Government Printing Office, 1930, pp. ii, 45, illus., maps, tabl.

— Intermediate landing field rules. May 20, 1930.

Washington, U. S. Government Printing Office, 1930, pp. 4.

— Physical standards for airplane pilots (including standards for lighter-than-air pilots) and appendix of reference text. Rev. July 1, 1930.

Washington, U. S. Government Printing Office, 1930, pp. ii, 33.

— See Schmeckebier, Laurence Frederick: The Aeronautics Branch, Department of Commerce; its history, activities, and organization.

UNITED STATES FEDERAL BOARD FOR VOCATIONAL EDUCATION. Vocational training for airplane mechanics and aircraft engine mechanics; tentative partial analysis of the trades with suggestions relative to the organization and operation of training courses. March, 1930.

Issued by the Federal Board for Vocational Education, Washington. United States Government Printing Office, 1930, pp. viii, 45.

UNITED STATES HYDROGRAPHIC OFFICE. Radio aids to navigation 1930. Including details of radio-compass stations, radiobeacons, weather bulletins, storm and navigational warnings, time signals, etc.

Washington, 1930, pp. xi, 487, illus.

UNITED STATES NAVY DEPARTMENT. Bureau of Aeronautics. Naval aviation engine manual. Prepared by the Power Plant Section, Bureau of Aeronautics, Navy Department. 1929.

Washington, U. S. Government Printing Office, 1929, pp. iii, 122, ill., diagrs.

— Special notice to mariners. One hundredth anniversary number 1830-1930.

Washington, United States Government Printing Office, Dec. 6, 1930, pp. 18, ill., ports.

— See Miller, H. B.: Training the Naval Air Reserve.

UPPERCU, INGLIS M. America's aircraft builders and their products.

The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, pp. 26-27, port.

UPSON, RALPH H. Creative wing design.

Aviation, Vol. 28, No. 20 (May 17, 1930), New York, pp. 989-992, diagrs.

— The metal clad airship.

Journ. Soc. Automotive Engineers, Vol. 28, No. 5 (May 1930), New York, p. 567.

V

VACUUM OIL COMPANY. Aviation fuels; a brief treatise on how and why they differ from automobile fuels.

New York, Vacuum Oil Company, 1930, pp. 11.

VADEBONCŒUR, EDMUND R. "How to fly." A simplified course of ten lessons in the theory of airplane flight.

Syracuse, N. Y., Fliers Institute, 1929, 1 vol., ill., diagrs.

VALDECILLA, J. H. Las maniobras aéreas Inglesas.

Aérea, Año 8, Núm. 85 (Agosto 1930), Madrid, pp. 5-6, map.

— La undécima fiesta aérea de la R. A. F.

Aérea, Año 8, Núm. 84 (Julio 1930), Madrid, pp. 7-8.

VALIER, MAX. Raketenfahrt.

München und Berlin, R. Oldenbourg, 1930, pp. viii, 240, ill., diagrs.

VALLEY STREAM, N. Y. See Dobbins, R. N.: Maintenance at Valley Stream, N. Y. Curtiss-Wright repair shop has modern equipment for rebuilding all types of engines.

VALVELESS engine. See Schubert: Schubert valveless engine.

VANCE, CLAIR K. On through the night.

U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, pp. 31-34, ill.

VAN DUSEN, C. A. A twelve hundred acre airplane project.

American Machinist, Vol. 73, No. 22 (Nov. 1930), New York, pp. 837-865, ill.

VAN DUSEN, W. I. That foreign commerce may fly.

U. S. Air Services, Vol. 15, No. 7 (July 1930), Washington, pp. 29-35, ill., map.

VAN DUSEN, WILLIAM L. Charles Lindbergh—glider pilot.

Western Flying, Vol. 7, No. 5 (May 1930), Los Angeles, Calif., pp. 50-53, 143, ill.

— How to build pontoons for gliders.

Western Flying, Vol. 7, No. 6 (June 1930), Los Angeles, Calif., pp. 54-56, ill.

VANES, C. H. Un nouveau stabilisateur expérimenté aux États-Unis.

L'Aérophile, 38e année, No. 10 (oct. 1930), Paris, p. 306, ill.

VANIÈR, J. Dictionary of aeronautical terms.

New York, American Society of Mechanical Engineers.

VAPOR lock. See Bridgeman, Oscar C., and H. S. White: The effect of airplane fuel-line design on vapor lock.

— See Bridgeman, Oscar C., and H. S. White: The vapor-locking tendency of aviation gasolines.

VARNISHES. Varnishes. Llewellyn Ryland, Ltd.

Air annual of the British Empire 1930, London, p. 607.

VAUGHAN, G. W. Fuel problems in aviation engines.

Oil and Gas Journal, Vol. 29, No. 19 (Sept. 25, 1930) pp. 33, 76.

VAULX, HENRI DE LA. See Gardner, Lester D.: Aviation honors a beloved leader.

VAUTHIER. Les détachments armés, transportés par avions.

Revue des Forces Aériennes, No. 12 (juil. 1930), Paris, pp. 805-820, ill., maps.

VECE, FRANCESCO. Caratteristiche del trasporto aereo e le sue possibilità attuali.

Riv. Aeron., Anno 6, N. 1 (Gen. 1930), Roma, pp. 18-24, diagrs., tabls.

VEER, E. TH. DE. De beteekenis van het Internationale Luchtvaart-Congres.

Het Vliegveld, 14 de Jaarg., No. 9 (Sept. 1930), Amsterdam, pp. 279-280, port.

VELOCITY. See Hansen, M.: Velocity distribution in the boundary layer of a submerged plate.

VENTURI TYPE cowls. See Cowls: Wind tunnel tests of Venturi type cowls and engine nacelles suitable for multi-engine airplanes.

VERDURAND, A. L'aviation de tourisme veut des aires d'atterrisseage.

L'Aéronautique, 12me année, No. 135 (août 1930), Paris, pp. 286-287, ill.

— Le développement du tourisme aérien et l'emploi militaire de l'aviation.

Revue des Forces Aériennes, No. 12 (juil. 1930), Paris, pp. 835-844.

— Utilisation des procédés Loth pour le guidage des avions par ondes hertziennes. 1.—Étude critique des procédés Loth pour la navigation aérienne.

L'Aéronautique (l'Aérotechnique, 8e année, No. 94), 12me année, No. 137 (oct. 1930), Paris, pp. 365-370, ill.

VERDUZIO, G.-A. R. Appunti sul calcolo dell'ala a sbalzo.

L'Aérotecnica, Vol. 10, N. 4 (Aprile 1930), (VIII), Roma, pp. 239-261, ill., diagrs.

VERGANI ORIO, MASSAI MARIO. Almanacco aeronautico 1930. (Sotto gli auspici del r. Aero Club d'Italia.)

Milano, Bompiani (Unione tipografica), 1930, pp. 263 con ventitre tavole.

VERKEHRSWISSENSCHAFTLICHEN INSTITUTS FÜR LUFTFAHRT. See Pirath, Carl:

Forschungsergebnisse des Verkehrs-wissenschaftlichen Instituts für Luftfahrt an der Technischen Hochschule Stuttgart.

VERRILL, DOROTHY. Aircraft book for boys.

New York and London, Harper & Brothers, 1930, pp. xvi, 312, ill., map, diagrs.

VERTICAL descent. See Munk, Max Michael: The vertical descent.

VERVILLE. The Verville trainer. A new American training machine.

Flight, No. 1131, Vol. 22, No. 35 (Aug. 29, 1930), London, p. 966, ill.

VIBRATION. Schwingungen von Flugzeugteilen.

Zeitschr. Ver. deutscher Ing., Bd. 74, Nr. 1 (4. Jan. 1930), Berlin, pp. 25-26.

— See Atlantic: Determination of the elastic axis and natural periods of vibration of the Atlantic C-2A monoplane wing.

— See Comper, Tenente Nicholas: Apparato Comper per asorbire le vibrazioni.

— See Geiger, Jos.: Vibrations de torsion des vilesbrequens et vibrations de flexion des pales d'hélices.

— See Instruments: Essais des instruments de bord aux vibrations.

VIBRATION. *See* Kamm, Wunibald, und Albert Stieglitz: Schwingungsuntersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin."

— *See* Liebers, F.: Contribution to the theory of propeller vibrations.

— *See* Lürenbaum, Karl: Die Schwingungen in Luftfahrzeug-Triebwerkanlagen.

— *See* Stieglitz, Albert: Neuere Ergebnisse auf dem Gebiet der Kurbelwellenschwingungen.

VICKERS. Vickers "Viastra I" commercial airplane (British). A high-wing all-metal semicantilever monoplane.

National Advisory Committee for Aeronautics, Aircraft Circulars No. 129, Nov. 11, 1930, Washington, November 1930, pp. 7, illus.

— Vickers "Viastra I." Three Armstrong Siddeley Geared "Lynx" engines.

Flight, No. 1135, Vol. 22, No. 39 (Sept. 26, 1930), London, pp. 1059-1064, illus.

— *See* Supermarine: The Supermarine Aviation Works, Ltd., Proprietors: Vickers (Aviation), Ltd.

VILLAT, HENRI. Leçons sur la théorie des tourbillons.

Paris, Gauthier-Villars & Co., 1930, pp. 300, illus.

— Mécanique des fluides.

Cours de l'Ecole Nationale Supérieure d'Aéronautique, Paris, Gauthier-Villars et Cie. Editeurs, 1930, pp. viii, 175, illus.

VILLIERS. Un hydravion français à aile à fente: le Villiers 26.

L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, pp. 137-138, ill., diagr.

— The Villiers hydro aeroplane with slotted wings.

Mech. Eng., Vol. 52, No. 7 (July 1930), New York, p. 705, ill.

VINCENNES. *See* B., H.: Vincennes 1930.

VINDEL, PEDRO. *See* Díaz Aquer, Graciano, y Pedro Vindel: Historia bibliográfica e iconográfica de la aeronáutica en España, Portugal, países hispano-americanos y Filipinas desde los orígenes hasta 1900.

VIRULY, A. Vliegen en literatuur.

Het Vliegveld, 13de Jaarg., No. 8 (Aug. 1929), Amsterdam, p. 297.

— Vóór vriji? . . . Contact?

Amsterdam, Andries Blitz.

VISIBILITY. Améliorations possibles des vues de l'avion classique actuel.

L'Aéronautique, 12me année, No. 131 (avril 1930), Paris, pp. 117-123, ill.

— *See* Biche, Jean: Vers l'avion à vues totales.

— *See* Breckenridge, Francis Chapin, and J. E. Nolan: Relative visibility of luminous flashes from neon lamps and from incandescent lamps with and without red filters.

— *See* Deeds, Ed.: Mist in the pilot's eyes.

— *See* Koschmieder, H.: Measurements of visibility at Danzig.

— *See* L., P.: Suggestions au sujet d'un coefficient caractérisant rationnellement "les vues."

— *See* Weck, F. H.: Average visibility at Chicago airport.

VOELTER, KARL E. The salesman's job.

Aviation, Vol. 28, No. 11 (Mar. 15, 1930), New York, p. 519.

VOGEL, H. Zur Frage der Flugmotorenschmierung.

Die Luftwacht, Heft 2, Feb. 1930, Berlin, pp. 87-89.

- VOGEL, J. F. DE.** De algemeene beteekenis van het Vijfde Internationale Luchtvaartcongres.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, p. 276, port.
- VOGT, RICHARD.** Der günstigste Abstützpunkt für Eindecker, eingespannter oder gelenkiger Holm, Eindecker oder Doppeldecker?
Zeitschr. Flugt. Motorluftsch., 21. Jahrg. 2. Heft (28. Jan. 1930), München, pp. 29-35, ill.
Berichtigung 6. Heft (28. März 1930), p. 142.
- Il miglior punto d'attacco del montante nei monoplani, a longarone incastrato o cernierato. Monoplano o biplano?
Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 75-81, diagrs.
- VOIGT, BILL, jr.** Fare or fear—which?
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 53-54.
- VOISIN.** L'exploration aérienne à la Ve armée jusqu'à la veille de Charleroi (21 août 1914).
Revue des Forces Aériennes, No. 11, 13, juin, août 1930, Paris, pp. 760-784, 891-926, maps.
- VOITOUX, G.** Les îles flottantes.
L'Aéophile, 38me année, Nos. 5-6 (15 mars 1930), Paris, pp. 71-72.
- La navigation aérienne en Atlantique nord.
Paris, Société d'Editions Géographiques, Maritimes et Coloniales.
- La navigation aérienne transatlantique.
Paris, Société d'Éditions Géographiques Maritimes et Coloniales, 1930, pp. 144.
- VOLKMANN, KURT.** Internationales Luftrecht.
Berlin, F. Dümmler, 1930, pp. 218.
(Völkerrechtsfragen . . . 31. Heft.)
- VOLPERT, J.** La normalisation des nez de moteurs.
L'Aéronautique, 12me année, No. 134 (juil. 1930), Paris, pp. 248-250, ill.
- La normalizzazione dei fronti dei motori.
Notiziario Tecnico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 69-73, ill.
- VON HOFFMANN AIRCRAFT SCHOOL.** What aviation offers you.
St. Louis, Von Hoffmann Aircraft School, 1930, pp. 32.
- VORTEX theory.** See Betz, A.: The vortex theory and its significance in aviation. Part I.—Vortex theory. Part II.—Wing theory.
- VORYS, JOHN M.** What state body should regulate aeronautics?
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 494-500.
- VR, A.** Physiologie der vliegers op groote hoogten.
Het Vliegveld, 13de Jaarg., No. 6 (Juni 1929), Amsterdam, pp. 219-220, port.
- W**
- WAGES.** Wages and hours in the manufacture of airplanes and aircraft engines, 1929.
United States Bureau of Labor Statistics, Bulletin No. 523 (Nov. 1930,) Washington, pp. 53.
- WAGHORN, H. R. D.** Training for the Schneider trophy.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 142-144, illus.
- The Schneider trophy, 1929.
Journ. Roy. Aer. Soc., Vol. 34, No. 233 (May 1930), London, pp. 400-408.
- WAIT, WILLIAM, jr.** Safety and high performance—Go slow on metal.
Aviation, Vol. 28, No. 11 (March 15, 1930), New York, pp. 525-526.
- WAITE, GEORGE.** Comfort and freedom added to safety.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 43-44, ill., port.
- A new passenger chute for transport planes.
Aviation, Vol. 29, No. 2 (Ang. 1930), New York, pp. 100-101, ill.

- WAKE, J. H. C.: *See* Maitland, C. E., and J. H. C. Wake: Comparative handling tests of three Bristol fighter aircraft with different types of slots.
- WALKER, C. C. Aircraft as transport vehicles.
Aeronautical Engineering, suppl. to Aeroplane, Vol. 38, No. 18 (April 30, 1930), London, pp. 791-791a, ill.
- WALKER, DON. A student speaks.
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 54-56.
- WALKER, DONALD F. The glider and the aviation industry.
Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 148-151, ill.
- The significance of the first national soaring contest.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1434-1435, ill.
- WALKER, GILBERT T. Note on the wings of gliding birds.
Journ. Roy. Aer. Soc., Vol. 34, No. 234 (June 1930), London, pp. 495-496, ill.
- WALLEN, JARVIS A. *See* Parsons, John F., and Jarvis A. Wallen: An investigation of the phenomenon of separation in the air flow around simple quadric cylinders.
- WALTER, FRANZ. Deutsche Luftspiele 1930. Gedanken zur Ausschreibung.
Luftschau, 3. Jahrg., Nr. 15 (10 Aug. 1930), Berlin, p. 116.
- Der Flugzeugvertrieb.
Deutsche Luftfahrt, 34. Jahrg., Heft 3 (März 1930), Berlin, pp. 69-71.
- Der Motorflugsport im Deutschen Luftfahrt-Verband. Statistischer Rückblick 1929.
Luftschau, 3. Jahrg., Nr. 9 (10 Mai 1930), Berlin, pp. 65-67, ill.
- WALTER, H. Bemerkenswerte neue Anlagen der AEG für Luftverkehrsbefeuerung.
Die Luftwacht, Heft 2 (Feb. 1930), Berlin, p. 56.
AEG Mitteilungen, Jan. 1930.
- WALTERS, N. Aeroplane wheels and tyres.
Journ. Roy. Aer. Soc., Vol. 34, No. 230 (Feb. 1930), London, pp. 214-215.
- WALTHER, P. A. Fondamenti della teoria idrodinamica della cassa a spirale (chiocciola) delle turbine idrauliche.
Rendiconti dell'Istituto Centrale Aero-Idrodinamico di Mosca, 2a parte N. 50 (1930).
- WALTON, FRANCIS D. The air war in the west.
Aero Digest, Vol. 16, No. 5 (May 1930), New York, pp. 51-52.
- Where is aviation?
Harpers Magazine, Vol. 161, No. 961 (June 1930), New York, pp. 108-115.
- WAPITI. *See* Martin, Brian: "Wapiti" steel wings.
- WARDEN, R. *See* Cowley, W. L., and R. Warden: Tests of models of high speed seaplanes for the Schneider trophy contest of 1927. Sections I, II, and III.
— *See* Cowley, W. L., and R. Warden: Tests on quarter scale models of high speed seaplanes for the Schneider trophy contest of 1927. Section IV. Comparison with full scale and conclusions.
- WARNER, EDWARD P. Afterthoughts on the races.
Aviation, Vol. 29, No. 4 (Oct. 1930), New York, pp. 202-206, ill.
- Building the plane and its engine. Technical papers presented in St. Louis on production problems.
Aviation, Vol. 28, No. 10 (March 8, 1930), New York, pp. 487-488.
- Engines before the S. A. E.
Aviation, Vol. 28, No. 9 (March 1, 1930), New York, pp. 439-442, ill.

- WARNER, EDWARD P. From export code to spinning rules. A review of the meetings of the airplane and engine sections in the Aeronautical Chamber of Commerce at the St. Louis arena.
Aviation, Vol. 28, No. 9 (March 1, 1930), New York, pp. 434-438.
- Governments and airplanes . . . regulation and control.
Aviation, Vol. 29, No. 2 (Aug., 1930), New York, pp. 54-59, illus.
- How the operators look at aircraft.
Aviation, Vol. 28, No. 16 (April 19, 1930), New York, pp. 810-814, illus.
- "Human curiosity knows no limit," says Lane.
Aviation, Vol. 28, No. 9 (March 1, 1930), New York, pp. 443-444.
- Mechanical aids to the directional sense.
Aviation, Vol. 28, No. 9 (March 1, 1930), New York, pp. 445-449, illus., diagrs.
- WARNER, EDWARD P., and HERBERT F. POWELL. Meetings of the Aero Chamber at St. Louis. A report on the convening of the fuel and lubricant, accessory and material, flying school, and finance and insurance sections.
Aviation, Vol. 28, No. 10 (March 8, 1930), New York, pp. 482-484.
- WARNER, EDWARD P., Multi-engined performance with one engine dead.
Aviation, Vol. 29, No. 5 (Nov. 1930), New York, pp. 296-297.
- The Tanager and the dub pilot.
Aviation, Vol. 28, No. 6 (Feb. 8, 1930), New York, pp. 249-252, ill.
- WARNER, ELIZABETH NOYES. The inexplicable fascination of the air.
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, pp. 31-32.
- WARREN, L. A. Pilot Wheaton's experience against terrific head winds.
Monthly Weather Review, Vol. 58, No. 3 (March 1930), Washington, p. 118.
- WARRINGTON, C. H. The Davis monoplane.
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, p. 47, port.
- WARSAP, J. H. See Fage, A., and J. H. Warsap: The effects of turbulence and surface roughness on the drag of a circular cylinder.
- WARSAW. See Carroll, Mitchell B.: The Warsaw convention.
- WARSHAUER, IRWIN. See Hall, Harry, and Irwin Washauer: We go skylarking to far places.
- WASHINGTON, D. C. "New airport at National Capital."
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1077-1079, ill.
- The new Washington airport is attractive and alive.
U. S. Air Services, Vol. 15, No. 8 (Aug. 1930), Washington, p. 46, ill.
- See Pyle, Ernest T.: The Capital's chameleon beauty.
- WASHINGTON, GEORGE. See Hay, James, jr.: America's first air journey.
- WASSERKUPPE. See Stamer, Fritz: The flying school at the Wasserkuppe.
- WATER. Notes complémentaires sur la circulation d'eau et la circulation d'huile.
L'Aéronautique, 12me année, No. 129 (fév. 1930), Paris, p. 68, ill.
- WATER-COOLED engines. See Forsyth, Graham: Water-cooled aero engines.
- WATER tunnel. See Jacobs, Eastman N., and Ira H. Abbott: Experiments with a model water tunnel.
- WATSON, WILBUR J. Design factors of airship dock at Akron.
Engineering News-Record, Vol. 105, No. 4 (July 24, 1930), New York, pp. 135-138.

- WATTER, MICHAEL.** Joukowski's vortex theory of propellers.
Aero Digest, Vol. 16, No. 4, 5 (April, May 1930), New York, pp. 78-80, 234, 69-71, ill., diagrs., port.
- WAVE-HOPPING.** The useful art of wave-hopping.
Western Flying Vol. 8, No. 1 (July 1930), Los Angeles, Calif., p. 51.
- WEAD, FRANK W.** The important matter of confidence and the air passenger.
Aviation, Vol. 28, No. 1 (Jan. 4, 1930), New York, pp. 17-19.
- WEATHER.** See Corlett, E. H.: Weather influence on mapping by airplane.
- See Dobler, Martin L.: Interpreting the weather map.
- See Dobler, Martin L.: Thunderstorms and line-squalls.
- See Dobler, M. L.: Weather factors in flying.
- WEATHER BUREAU.** See United States Department of Agriculture, Weather Bureau.
- WEBB, L. D.** Concerning aircraft engines.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 19-20, 22.
- The eleventh annual Curtiss Marine Trophy Race.
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, pp. 30-31.
- Flying from the "Lexington" and "Saratoga."
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, pp. 35-41, ill.
- "High frontiers."
U. S. Air Services, Vol. 15, No. 9 (Sept. 1930), Washington, pp. 19-24, ill.
- Keeping the traditions of the sea.
U. S. Air Services, Vol. 15, No. 10 (Oct. 1930), Washington, p. 43.
- New propeller construction methods.
Aviation, Vol. 29, No. 5 (November 1930), New York, pp. 299-301, ill.
- Off the catapult.
U. S. Air Services, Vol. 15, No. 7 (July 1930), Washington, pp. 21-26, ill.
- WECK, F. H.** Average visibility at Chicago airport.
Monthly Weather Review, Vol. 58, No. 5 (May 1930), Washington, p. 204, diagr.
- WEEMS, P. V. H.** Fog flying methods.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 65, 250.
- How Lindbergh flies. "Many flyers are really 'lost' a good part of the time."
Western Flying, Vol. 7, No. 3 (March 1930), Los Angeles, Calif., pp. 54-55, ill.
- WEGERDT.** Deutsche Luftfahrtgesetzgebung.
Berlin, Verlag Gebr. Radetzki.
- WEICK, FRED ERNEST.** Aircraft and propeller design.
New York and London, McGraw-Hill Book Company, inc., 1930, pp. xiii, 294, ill., diagrs.
- The effect of reduction gearing on propeller-body interference as shown by full scale wind tunnel tests.
National Advisory Committee for Aeronautics, Report No. 338, Mar. 18, 1930, Washington, U. S. Government Printing Office 1930, pp. 21, ill., diagrs., tabls.
- Full scale wind tunnel tests on several metal propellers having different blade forms.
National Advisory Committee for Aeronautics, Report No. 340, Feb. 19, 1930, Washington, U. S. Government Printing Office 1930, pp. 13, ill., diagrs., tabls.
- Full scale wind tunnel tests with a series of propellers of different diameters on a single fuselage.
National Advisory Committee for Aeronautics, Report No. 339, Mar 26, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, ill., diagrs., tabls.

WEICK, FRED ERNEST. Working charts for the selection of aluminum alloy propellers of a standard form to operate with various aircraft engines and bodies. National Advisory Committee for Aeronautics, Report No. 350, July 26, 1930, Washington, U. S. Government Printing Office 1930, pp. 16, illus., diagrs.

WEIGHT. Weight saving in airplane structures.

Aviation, Vol. 29, No. 4 (October 1930), New York, pp. 223-226, illus., tabl.

— Weight saving in structure.

Journ. Soc. Automotive Engineers, Vol. 27, No. 3 (Sept. 1930), New York, pp. 253-255.

— See Gassner, A. A.: The airplane weight complex.

— See Gassner, A. A.: Weight saving by structural efficiency.

WEINIG, FRITZ. Der Drehzahlunterschied von Propellern mehrmotoriger Flugzeuge.

Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, p. 285

— Die Auswertung von Propellerversuchsfügen.

Deutsche Luftfahrt, 34. Jahrg., Heft 6, 1930, Berlin-Lichterfelde, pp. 159-160.

— Bemerkungen über die Nachprüfung von Luftschauben durch optische Hilfsmittel.

Deutsche Luftfahrt, 34. Jahrg., Heft 45, 1930, Berlin, p. 116.

— Der Einfluss des Flugwerks auf den Vortriebswirkungsgrad der Luftschaube.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 8. Heft (28. April 1930), München, pp. 196-200, illus., diagrs.

— Kavitation als primäre Ursache von Korrosionserscheinungen an Flugzeug-Schwimmkörpern.

Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 11. Heft (14. Juni 1930), München, pp. 279-280, illus.

WEISS MANFRED. See Andor, Halász: A Weiss Manfred repülögép- és motorgyár.

WEISS, PIERRE THÉODORE. Notes pour servir à l'histoire des énergies de l'air: L'espace. Préface de la comtesse de Noailles.

Paris, L. Querelle, 1929, pp. 223.

WELDED joints. See Whittemore, H. L., and W. C. Brueggeman: Strength of welded joints in tubular members for aircraft.

WELDING. See Boggs, R. W., and S. C. Clark: Training aircraft welders.

— See Dunlap, W. M.: Aluminum welding in aircraft design.

— See Granjon, R.: La soudure autogène dans les constructions aéronautiques.

— See Hardecker, J. F.: Welding jigs and fixtures.

— See Hardy, Russell F.: Aircraft welding, including the development of an efficient welding department.

— See Johnson, J. B.: Airplane welding.

— See Johnson, J. B.: Development in oxyacetylene welding in the aircraft industry.

— See Kirkbridge, Charles E.: Gas welding in the aircraft industry.

— See Perkins, Kendal: Two fundamentals in aircraft welding.

WENDLANDT, RUDOLF. Experimental investigations concerning the limits of detonation in gaseous mixtures. Parts I and II.

National Advisory Committee for Aeronautics, Technical Memorandums Nos. 553, 554, (Feb. 20 and 28, 1930), Washington, February 1930, pp. 25, ill., diagrs., tabls.

- WENZINGER, CARL J. *See* Knight, Montgomery, and Carl J. Wenzinger: The effect of wing-tip floating on the autorotation of a monoplane wing model.
- WERNER, JOHANNES. *See* Böhme, Erwin: Briefe eines deutschen Kampffliegers an ein junges Mädchen; hrsg. von Prof. Dr. Johannes Werner.
- WEST, RICHARD LINCOLN. Making an airport pay.
Airway Age, Vol. 11, No. 9 (Sept. 1930), New York, pp. 1211-1212, ill.
- WESTERN AIR EXPRESS. *See* Hanshue, Harris M.: The economic status of airline operation.
- *See* Kramer, George N.: Hexagonal hangar feature of Western Air Express terminal.
- *See* Mounier, P. P. J.: De nieuwe luchtreuzen der Western Air Express.
- WEST INDIES. *See* Hammond, William C.: The West Indies aerial express.
- WESTLAND. The Westland Aircraft Works.
Air annual of the British Empire, 1930, London, pp. 562-571, ill.
- Westland "Wessex." A small three-engined machine with many various applications.
Flight, No. 1136, Vol. 22, No. 40 (Oct. 3, 1930), London, pp. 1082-1087, illus.
- Westland "Wessex" commercial airplane (British). A high-wing semi-cantilever monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 128, Oct. 31, 1930, Washington, October 1930, pp. 9, illus.
- WEYMANN-LEPÈRE. The Weymann-Lepère W. E. L. 10 observation airplane (French). A high-wing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 107, Jan. 17, 1930, Washington, January 1930, pp. 11, illus.
- WHATHAM, RICHARD. Meteorology for aviator and layman.
New York, Frederick A. Stokes Company, 1930, pp. xvi, 179, illus., diagrs.
- WHEATON, H. A. *See* Warren, L. A.: Pilot Wheaton's experience against terrific head winds.
- WHEELER, GEORGE F. Marine airport for yacht clubs.
The Sportsman Pilot, Vol. 4, No. 4 (Dec. 1930), New York, pp. 32-33, ill.
- WHEELER, GEORGE M. Salesmanship key to increased profits.
Airway Age, Vol. 11, No. 4 (April 1930), New York, pp. 534 and 536.
- WHEELS. Wheels and brakes.
Air annual of the British Empire 1930, London, pp. 608-623, ill.
- *See* Walters, N.: Aeroplane wheels and tyres.
- WHITAKER, O. B. The "Artificial Horizon" assists pilots flying blind.
U. S. Air Services, Vol. 15, No. 6 (June 1930), Washington, p. 46, ill.
- WHITE, BERT. How to care for life-savers of the air.
Western Flying, Vol. 7, No. 4 (Apr. 1930), Los Angeles, Calif., pp. 64-65, ill.
- WHITE, C. W. Selling the de luxe plane market.
Aviation, Vol. 28, No. 14 (Apr. 5, 1930), New York, pp. 681-682, ill.
- WHITE, H. S. *See* Bridgeman, Oscar C., and H. S. White: The effect of airplane fuel-line design on vapor lock.
- *See* Bridgeman, Oscar C., and H. S. White: The vapor-locking tendency of aviation gasolines.
- WHITE, PERCIVAL. How to fly an airplane, a textbook for beginners.
New York and London, Harper & Brothers 1930, pp. xvii, 358, illus., diagrs.

- WHITE, THOMAS D.** Acrobatics on paper or how to write a Chinese dictionary.
U. S. Air Services, Vol. 15, No. 5 (May 1930), Washington, pp. 28-30, ill.
- Far eastern airways.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 32-34, ill.
- Tell it to the Marines!
U. S. Air Services, Vol. 15, No. 12 (Dec. 1930), Washington, pp. 46-48, ill.
- WHITEHEAD, R. F.** Problems of aerial photography in Alaska.
Aviation, Vol. 28, No. 21 (May 24, 1930), New York, pp. 1024-1027, illus.
- WHITTEMORE, H. L., and W. C. BRUEGGEMAN.** Strength of welded joints in tubular members for aircraft.
National Advisory Committee for Aeronautics, Report No. 348, Aug. 11, 1930, Washington, U. S. Government Printing Office, 1930, pp. 41, illus., diagrs., tabls.
- WIBAULT.** The Wibault 220 R. N. 3 airplane (French). A three-place observation high-wing monoplane.
National Advisory Committee for Aeronautics, Aircraft Circulars No. 124, Aug. 15, 1930, Washington, August 1930, pp. 4, illus.
- WICHITA.** See Nevill, John T.: The story of Wichita.
- WIEDEMANN effect.** See Kobayasi, Tatuo, Hiroto Okumura, Kinmatsu Simamura, and Tatuo Koyama: Application of the inverse Wiedemann effect to torque variation recordings. Part II.
- WIEN, WILHELM CARL WERNER OTTO FRITZ FRANZ, und F. HARMS,** unter mitarbeit von H. Lenz. Handbuch der Experimentalphysik. Band 4, 3. Teil. Hydro- und Aerodynamik, 3. Teil, Technische anwendungen, herausgegeben von Ludwig Schiller, bearbeitet von O. v. Eberhard, R. Emden, O. Flachsbart, W. Gaede, L. Hope, F. Horn, W. Klemperer, W. Spannhake. Leipzig, Akademische Verlagsgesellschaft M. B. H., 1930, pp. x, 557, ill.
- WIESINGER.** Das Luftschiff Bauart Wiesinger.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 13. Heft (14. Juli 1930), München, pp. 325-338, ill.
- WIJN, J. W.** De luchtfotografie en hare toepassing op historisch gebied.
Het Vliegveld, 13de Jaarg., No. 4, 5 (April, Mei 1929), Amsterdam, pp. 130-133, 172-174, ill.
- WIKOFF, HOWARD.** Uniform rules for air passenger liability.
Journal Air Law., Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 512-520.
- WILAMOWITZ-MOELLENDORFF.** Ein Jahrzehnt deutscher Luftpolitik.
Deutsche Luftfahrt, 34. Jahrg., Heft 10/11, 1930, Berlin-Charlottenburg, pp. 251-254.
- WILBUR WRIGHT memorial lecture.** The Wilbur Wright memorial lecture.
The Aeroplane, Vol. 38, No. 23 (June 4, 1930), London, pp. 1075-1080, diagrs.
Lecture by H. R. Ricardo on aircraft engine development.
- WILKINS, SIR HUBERT.** Wings over the wasteland.
The Sportsman Pilot, Vol. 3, No. 5 (May 1930), New York, pp. 13, ill.
- WILKINSON.** The Wilkinson air muffler.
Airway Age, Vol. 11, No. 7 (July 1930), New York, p. 976, ill.
- WILLCOX, H. CASE.** Air transport development in Latin America.
Aviation, Vol. 29, No. 5 (Nov. 1930), New York, pp. 286-290, illus., map.
- Air transportation in Latin America.
Geographical Review, Vol. 20, No. 4 (Oct. 1930), New York, pp. 587-604.
- WILLETT, H. C.** Synoptic studies in fog.
Meteorological Papers, Vol. 1, 1, Massachusetts Institute of Technology.
- WILLIAMS, ARCHIBALD.** Conquering the air; the romance of the development and use of aircraft. Revised and enlarged by Marion Barton Crowell.
New York, T. Nelson and Sons, 1930, pp. vii, 366, illus.
- WILLIAMS, ALFORD J.** See Barker, Samuel: Outside loops.

- WILLIAMS, D. H.** Pressure distribution over a yawed aerofoil, by D. H. Williams, with an appendix on rolling moments on a yawed aerofoil, by A. S. Batson.
Aer. Res. Comm., Rep. Mem., No. 1203, (Ae. 304), October, 1928, London, 1930, pp. 23, illus., diagrs., tabs.
- WILLIAMS, FRANK.** Loops by one who knows them.
Western Flying, Vol. 8, No. 4 (Oct. 1930), Los Angeles, Calif., pp. 37, 100.
- Turns—How to do them.
Western Flying, Vol. 8, No. 5 (Nov. 1930), Los Angeles, Calif., pp. 38-39, 94, illus.
- WILLIAMS, FRANK B.** See McClintock, Hubbard M., and F. B. Williams: Airports. Their location, administration, and legal basis.
- See Hubbard, Henry Vincent, Miller McClintock, Frank B. Williams, Paul Mahoney and Howard K. Menhinick: Airports, their location, administration and legal basis.
- WILLIAMS, HARVEY L.** Aviation finance.
The Sportsman Pilot, Vol. 3, No. 3 (Mar. 1930), New York, p. 28.
- Clubs aid aviation progress.
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, pp. 18, 54.
- Trends in aviation.
The Sportsman Pilot, Vol. 3, No. 4 (Apr. 1930), New York, p. 44.
- WILLIAMS, PAUL WHITCOMB.** Legitimate targets in aerial bombardment.
American Journal of International Law, Vol. 23, 1929, Concord, N. H., pp. 570-581.
- WILLIAMS, ROGER G.** Airplanes of the future.
The Sportsman Pilot, Vol. 3, No. 5 (May 1930), New York, p. 18, ill.
- WILSON, EUGENE E.** Aircraft powerplants.
Western Flying, Vol. 7, No. 4 (Apr. 1930), Los Angeles, Calif., pp. 152-154, diagr.
- Radials, air-cooled, for dependability—controllable-pitch propellers—magnesium soon.
Aviation, Vol. 28, No. 11 (Mar. 15, 1930), New York, pp. 529-530.
- What of the future?
U. S. Air Services, Vol. 15, No. 7 (July 1930), Washington, pp. 19-20.
- WIMPERIS, H. E.** Spin in aeroplanes.
Engineering, Vol. 129, No. 3358 (May 23, 1930), London, p. 674.
- A study of the phenomenon of spin in aeroplanes.
Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 872-879.
Proceedings of the Royal Institution of Great Britain, Vol. 26, Part II, No. 124, 1920, London, pp. 232-242.
- WIND.** See Ali, Barkat: The wind at Agra and its structure.
- See Bolla, Filippo: La velocità del vento al suolo e a quote a Palermo.
- See Curry, Manfred: Wind and water.
- See Töpper, Carl: Rechnung und Messung an Windkraftmaschinen.
- WIND channel.** See Wind tunnels.
- WIND indicator.** Day and night wind indicator.
Airway Age, Vol. 11, No. 4 (Apr. 1930), New York, p. 560, ill.
- Un indicatore della direzione del vento.
Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 352-353, ill.
- New type wind direction indicator.
Airway Age, Vol. 11, No. 3 (Mar. 1930), New York, p. 406, ill.

WIND tunnels. Berliner-Joyce wind tunnel.

Aero Digest, Vol. 17, No. 5 (Nov. 1930), New York, p. 86, illus.

— See Dryden, H. L., and A. M. Kuethe: Effect of turbulence in wind tunnel measurements.

WIND tunnels. See Harris, R. G., L. E. Caygill, and R. A. Fairthorne: Wind tunnel tests on Gloster and Supermarine wing radiators.

— See Judkins, E. L.: Constant speed wind tunnel control.

— See Klein, A. L.: The wind tunnel as an engineering instrument.

— See Knight, Montgomery, and Richard W. Noyes: Wind tunnel pressure distribution tests on a series of biplane wing models. Part III. Effects of changes in various combinations of stagger, gap, sweepback, and decalage.

— See Lock, C. N. H.: The interference of a wind tunnel on a symmetrical body.

— See Lössl, Ernst v.: Ein einfaches Sechskomponenten-Messgerät der neuer Windkanalanlage am Kyffhäuser-Technikum, Bad Frankenhausen.

— See Louden, F. A.: Collection of wind tunnel data on commonly used wing sections.

— See Martinot-Lagarde, A.: Sur un dispositif de tunnel aérodynamique pour l'étude de l'écoulement à deux dimensions.

— See Rebuffet, P.: The electrodynamometric balance of the small wind tunnel of the French service of aeronautical research.

— See Stanton, T. E.: Tests under conditions of infinite aspect ratio of 4 aerofoils in a high speed wind channel.

— See Wood, R. McKinnon: The new American wind tunnels.

— See Wood, R. McKinnon: I nuovi tunnel aerodinamici americani.

— See Wright Field: Calibration constant of Wright Field five-foot wind tunnel.

WINES, JAMES P. The air transport section.

Aviation, Vol. 28, No. 10 (March 8, 1930), New York, pp. 485-486.

— The Curtiss-Chicago airport.

Aviation, Vol. 29, No. 2 (Aug. 1930), New York, pp. 92-96, illus., maps.

— The St. Louis show.

Aviation, Vol. 28, No. 9 (Mar. 1, 1930), New York, pp. 414-418, illus.

— A survey of private flying.

Aviation, Vol. 29, No. 3 (Sept. 1930), New York, pp. 171-174, illus.

WING adjustment. See Downey, H. C.: Rigging and maintenance of aircraft.

The problem of wing and fuselage adjustment and some suggestions as to their solution.

WING flutter. Study of wing flutter. Part II.—Continuation of tests on revised apparatus at Wright Field wind tunnel. (Supplement to Part I.—Test of apparatus and discussion of procedure A. D. M. 1014, dated October 20, 1928).

Air Corps Information Circular, Vol. 7, No. 653 (Aug. 30, 1930), Washington, United States Government Printing Office, 1930, pp. 21, illus., diagrs.

Air Corps Technical Report No. 3237.

WING ribs. See Newlin, J. A., and Geo. W. Trayer: The design of airplane wing ribs.

WING theory. *See* Betz, Albert: The vortex theory and its significance in aviation. Part I.—Vortex theory. Part II.—Wing theory.

WING type airplane. *See* Northrop, John K.: The flying wing.

WINGS. Ali variabili.

Riv. Aeron., Anno 6, N. 2 (Feb. 1930), Roma, pp. 355-360, ill.

- The calculation of the natural frequency of a cantilever monoplane wing.
Air Corps Information Circular, Vol. 7, No. 649 (Mar. 1, 1930), Washington, United States Government Printing Office, 1930, pp. 13, diagrs., tabs.
Air Corps Technical Report No. 3173.
- Variable camber wing.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, p. 1473, ill.
- *See* Alippi, Carlo: Una verifica grafica della stabilità alle oscillazioni torsionali di un'ala monopiana a longherone unico.
- *See* Alston, R. P.: Maximum lift coefficient of "Starling" with Clark YH wings.
- *See* Amstutz, E.: Zur Berechnung von apitzendigen Eindecker-Trafluegeln.
- *See* Amstutz, E.: Calculations of tapered monoplane wings.
- *See* Atlantic: Determination of the elastic axis and natural periods of vibration of the Atlantic C-2A monoplane wing.
- *See* Batten, J. D.: Wing-beats.
- *See* Bonifacio, Ferdinando: Sulla costruzione dei longheroni delle ali in legno in più pezzi incollati.
- *See* Bradfield, F. B., and R. A. Fairthorne: Hinge moments of balanced and unbalanced ailerons on R. A. F. 14 wing, to large angles of incidence.
- *See* Cruisader: Un nuovo velivolo americano tipo "Cruisader."
- *See* Cushing, R. K.: Controllability at low speeds and full scale measurement of lift and drag of Parnall "Peto" fitted with R. A. F. 15 and R. A. F. 31 section wings (slotted and unslotted).
- *See* Duncan, W. J.: The wing flutter of biplanes.
- *See* Fradiss, Jean: Thick airfoil sections with smaller center of pressure travel—superchargers—magnesium alloys.
- *See* Frazer, R. A., and W. J. Duncan: Conditions for the prevention of flexural torsional flutter of an elastic wing.
- *See* Friedrichs, K., und T. v. Karman: Zur Berechnung freitragender Fluegel.
- *See* Fuchs, Richard, and Wilhelm Schmidt: Air forces and air-force moments at large angles of attack and how they are affected by the shape of the wing.
- *See* Fumagalli, Rodolfo: Ali e alati.
- *See* Gabrielli, Giuseppe: Ancora sul peso ideale delle ali a sbalzo.
- *See* Girault, M.: Contribution à la construction de profils d'ailes par transformation conforme d'un cercle. Mesure des pressions qui s'exercent dans la section mediane d'un aile en fonction de l'allongement et pour differents profils.
- *See* Glider wing: Static test and determination of the elastic axis of the (Matériel Division) improved stressed skin type glider wing.

- WINGS. *See* Handley-Page: Le profil Villiers A-6 à fentes Handley-Page.
- *See* Jennings, W. G.: The effect of span on aircraft performance, by W. G. Jennings, in collaboration with Messrs. Boulton and Paul, Ltd.
- *See* Jones, Bradley: Icy wings.
- *See* Jones, E. T., and K. W. Clark: Full scale maximum lift coefficient of R. A. F. 28 section wing.
- *See* Jones, E. T., C. E. Maitland, and W. E. Purdin: Stalled flight tests of a Moth fitted with auto control slots and interceptors.
- *See* Knight, Montgomery, and Carl J. Wenzinger: The effect of wing tip floating on the autorotation of a monoplane wing model.
- *See* Knight, Montgomery, and Richard W. Noyes: Span load distribution on two monoplane wing models as affected by twist and sweepback.
- *See* Knight, Montgomery, and Richard W. Noyes: Wind tunnel pressure distribution tests on a series of biplane wing models. Part III. Effects of changes in various combinations of stagger, gap, sweepback, and decalage.
- *See* Louden, F. A.: Collection of wind tunnel data on commonly used wing sections.
- *See* Martin, Brian: "Wapiti" steel wings.
- *See* Munk, Max Michael: Development of the "M" wing sections.
- *See* Newell, Joseph S.: The static testing of airplane wings.
- *See* Parkin, J. H., and G. J. Klein: The interference between the body and wings of aircraft.
- *See* Repenthal, Walter: Investigation of the variations in the velocity of the air flow about a wing profile.
- *See* Rhode, Richard V., and Eugene E. Lundquist: The pressure distribution over a Douglas wing tip on a biplane in flight.
- *See* Schrenk, Oskar: A possible method for preventing the autorotation of airplane wings.
- *See* Scott-Hall, S.: Experiments on an ape aeroplane fitted with pilot planes.
- *See* Scott-Hall, S.: Stresses in wing structures. Accelerometer and incidence measurements in various manœuvres.
- *See* Slotted wings.
- *See* Stanton, T. E.: On the distribution of pressure over a symmetrical Joukowski section at high speeds.
- *See* Stanton, T. E.: Tests under conditions of infinite aspect ratio of 4 aerofoils in a high speed wind channel.
- *See* Toussaint, A., et E. Carafoli: Théorie et tracés des profils d'ailes sustentatrices.
- *See* Upson, Ralph H.: Creative wing design.
- *See* Verduzio, G. A. R.: Appunti sul calcolo dell'ala a sbalzo.
- *See* Villiers: Un hydravion français à aile à fente: le Villiers 26.
- *See* Villiers: The Villiers hydro aeroplane with slotted wings.

- WINGS.** *See* Walker, Gilbert T.: Note on the wings of gliding birds.
- *See* Williams, D. H.: Pressure distribution over a yawed aerofoil, by D. H. Williams, with an appendix on rolling moments on a yawed aerofoil, by A. S. Batson.
- WINNIPEG.** The Winnipeg airway beacon.
Engineering, Vol. 129, No. 3359 (May 30, 1930), London, p. 701.
- WINTERS, S. R.** Testing psychological reaction time of future pilots.
Aero Digest, Vol. 16, No. 2 (Feb. 1930), New York, p. 94, ill.
- WIRE.** *See* Abraham, Martin: Drähte, Litzen und Seile im Flugzeugbau.
- WIRE wheels.** *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim.
- *See* Pippard, A. J. Sutton, and W. E. Francis: The stresses in a radially spoked wire wheel under loads applied to the rim. Part II.—Simplified formulæ and curves.
- WIRELESS.** Wireless, navigation and instruments.
Air annual of the British Empire, 1930, London, pp. 624-627, ill.
- *See* Cave, C. B.: Wireless apparatus for aircraft.
- *See* Radio.
- *See* Thauss, Arno: Eine drahtlose Luftschiffstation vor zwanzig Jahren
- WIRELESS telephony.** *See* Eisner, Franz: Anwendung der Silbenverständlichkeitssmessungen in der drahtlosen Telephonie.
- WISSENSCHAFTLICHEN GESELLSCHAFT FÜR LUFTFAHRT.** Jahrbuch der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. 1929.
München und Berlin, Verlag von R. Oldenbourg, pp. 227, ill.
- Die XIX Ordentliche Mitgliederversammlung der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. (WGL) vom 10. bis 13. September 1930 in Breslau.
Deutsche Luftfahrt, 34. Jahrg., Heft 9, 1930, Berlin-Charlottenburg, p. 242.
- *See* Carganico, Victor: Kurzer Bericht über die Gesellschaftliche Sitzung der XIX. Ordentlichen Mitglieder-Versammlung der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. am 11. September 1930, 14.10 Uhr, in der Aula der Technischen Hochschule Breslau, Uferzeile.
- *See* Carganico, Victor: Kurzer Bericht über den Verlauf der XIX. Ordentlichen Mitgliederversammlung der Wissenschaftlichen Gesellschaft für Luftfahrt E. V. (WGL) vom 10. bis 13. September 1930 in Breslau.
- WISTING, OSCAR.** 16 år med Roald Amundsen; fra pol til pol.
Oslo, Gyldendal, 1930, pp. 206, ill.
- WITOSZINSKY.** *See* Argeanicoff, N. S.: Aérodynamique.—Sur la théorie de M. Witoszinsky.
- WITT, C. O.** Über Betriebsstoffe für Flugmotoren.
Die Luftwacht, Heft 2 (Feb. 1930), Berlin, pp. 82-87.
- WITTEKIND, FRITZ.** Flugzeuge und Motoren des Europa-Rundflugs 1930.
Deutsche Luftfahrt, 34. Jahrg., Heft 7-8, 1930, Berlin-Charlottenburg, pp. 171-199, ills., tabs., map.
- WOLFF, E. B.** Geeft Amerika ons iets nieuws te leeren?
Het Vliegveld, 14de Jaarg., No. 2 (Feb. 1930), Amsterdam, p. 40.
- De wetenschappelijke en technische sectie.
Het Vliegveld, 14de Jaarg., No. 9 (Sept. 1930), Amsterdam, p. 282, port.

- WOLLÉ, GEORG, und OSKAR PASSOTH. Bordgeräte-Ausrüstung der am Internationalen Rundflug 1930 beteiligten Flugzeuge.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 19. Heft (14. Okt. 1930), München, pp. 508-512, illus.
- WOMEN. *See* Earhart, Amelia: Women's influence on aviation.
- *See* Hattoom, Fred L.: Teaching women to fly.
- *See* Heath, Sophie Mary (Peirce-Evans), and Stella Wolfe Murray: Woman and flying.
- *See* McManus, Mrs. W. L.: Air saga of a business woman.
- *See* Spencer, G. K.: Pioneer women of aviation.
- WOOD. *See* Baranoff, A von: Determination of the best cross section for a box beam subjected to bending stresses.
- *See* Bonifacio, Ferdinando: Sulla costruzione dei longheroni delle ali in legno in più pezzi incollati.
- *See* Gerngross, Otto: Über Sperrholzleime.
- *See* Kraemer, Otto: Dauerbiegeversuche mit Hölzern.
- *See* Kraemer, Otto: Der Einfluss der Leimung auf die Güte von Flugzeugsperrholz.
- *See* Markwardt, L. J.: Aircraft woods: Their properties, selection, and characteristics.
- *See* Schmidt, Erich K. O.: Oberflächenschutz von Sperrholz.
- *See* Trayer, George William: Wood in aircraft construction; supply—suitability—handling—fabrication.
- *See* Truax, Thomas Roy: Gluing wood in aircraft manufacture.
- WOOD, DONALD H. Full scale wind tunnel tests of a propeller with the diameter changed by cutting off the blade tips.
National Advisory Committee for Aeronautics, Report No. 351, Oct. 24, 1930, Washington, U. S. Government Printing Office, 1930, pp. 25, illus., diagrs., tabls.
- Tests of large airfoils in the propeller research tunnel, including two with corrugated surfaces.
National Advisory Committee for Aeronautics, Report No. 336, Jan. 1, 1930, Washington, U. S. Government Printing Office, 1929, pp. 19, illus., diagrs., tabls.
- WOOD, ERIC. Differentiation between air accidents.
The Sportsman Pilot, Vol. 3, No. 4 (Apr. 1930), New York, p. 26, port.
- WOOD, R. MCKINNON. The new American wind tunnels.
Journ. Roy. Aer. Soc., Vol. 34, No. 235 (July 1930), London, pp. 559-576, illus.
- I nuovi tunnel aerodinamici americani.
Notiziario Technico di Aeronautica, Anno 6, N. 10 (Ott. 1930), Roma, pp. 29-37, ill.
- WOOD, R. MCKINNON, and W. G. A. PERRING. Stresses and strains in airscrews with particular reference to twist.
Aer. Res. Comm., Rep. Mem., No. 1274 (Ae. 420), April 1929, London, 1930, pp. 14, illus., tabls.
- WOOD, ROBERT SCHOFIELD. *See* Fife, George Buchanan: Lindberg, the Lone Eagle, his life and achievements, with a valuable chapter of the navigation of "The Spirit of St. Louis," by Captain Robert Schofield Wood . . .
- Wood decay. *See* Downey, H. C.: Airplane maintenance in the tropics. The problems of wood decay and metal corrosion and how they are met.
- Wood testing. *See* Teichmann, Alfred, und Karl Borkmann: Versuche mit kurzen Bolzen in Holsbauteilen.

- WOOLSON, L. M. The Packard aviation Diesel engine.
Diesel Power, Vol. 8, No. 5 (May 1930), New York, pp. 254-257, ill.
- The Packard Diesel aircraft engine.
Journ. Soc. Automotive Engineers, Vol. 26, No. 4 (April 1930), New York, pp. 431-442, 449,
ills.; Vol. 27, No. 3 (Sept. 1930), New York, pp. 279-281, 319.
- WOOLSON, L. M. The Packard Diesel engine.
Aero Digest, Vol. 16, No. 4 (Apr. 1930), New York, pp. 93-97, ill., port.
- See Packard: The Packard aircraft Diesel.
- WRIGHT. See MacMahon, John Robert: The Wright brothers, fathers of flight.
- See Meyer, Willy: Von Wright bis Junkers.
- WRIGHT, HAMILTON M. Floyd Bennett Field, New York.
Aero Digest, Vol. 16, No. 4 (Apr. 1930), New York, pp. 138-139, ill.
- WRIGHT, L. K. Cadmium in aviation.
Airway Age, Vol. 11, No. 8 (Aug. 1930), New York, pp. 1059-1060.
- WRIGHT, M. F. The Pacific Northwest by air.
Aeronautic Review, Vol. 8, No. 2 (Feb. 1930), Washington, pp. 12-17, ill.
- WRIGHT brothers. See MacMahon, John Robert: The Wright brothers, fathers
of flight.
- WRIGHT FIELD. Calibration constant of Wright Field five-foot wind tunnel.
Air Corps Information Circular, Vol. 7, No. 643 (Mar. 1, 1930), Washington, United States
Government Printing Office, 1930, pp. 17, ills., diagrs.
Air Corps Technical Report No. 3082.
- WRONSKY, MARTIN. Deutsche Handelsluftfahrt . . . ein Vortrag vor dem Insti-
tute of Transports und der Royal Aeronautical Society in London.
Berlin, E. S. Mittler und Sohn, Buchdruckerei G. m. b. H., 1930, pp. 33, ills.
- Deutschlands Luftverkehrspolitik und Luftverkehrsbetrieb im Jahre 1929.
Die Luftwacht, Heft 6, Juni 1930, Berlin, pp. 252-257.
- German commercial air transport.
Journ. Roy. Aer. Soc., Vol. 34, No. 238 (Oct. 1930), London, pp. 849-871.
- WYNNE, JOHN S. Let's go to the airport.
U. S. Air Services, Vol. 15, No. 11 (Nov. 1930), Washington, pp. 30-31, ill., port.
- Y
- YAMAGUCHI, BUNNOSUKE. Action of antioxydants in oxidation of unsaturated
fatty oils. I.
Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 61 (Vol. 5, 8),
(May 1930), Tôkyô, pp. 195-229, diagrs., tabls.
- Action of antioxygents in the oxidation of unsaturated fatty oils. II.
Report of the Aeronautical Research Institute, Tôkyô Imperial University, No. 65 (Vol. 5,
12), (Nov. 1930), Tôkyô, pp. 287-305, diagrs., tabls.
- YANCEY, LEWIS A. Avigation for amateurs.
The Sportsman Pilot, Vol. 3, Nos. 1, 4, 5 (Jan., Apr., May, 1930), New York, pp. 38, 51, 48, ill.
- YAWED model. See Perring, W. G. A., and C. Callen: Moments and forces on a
yawed model aeroplane.
- YORK, BROWER VANCE. Aeronautics developing rapidly in Latin America.
U. S. Air Services, Vol. 15, No. 3 (Mar. 1930), Washington, pp. 30-31, map.
- See Angle, Jay Warren, and Brower Vance York: Airports in Latin Amer-
rica.
- YOSIDA, YAHEI. See Obata, Jûichi, and Yahei Yosida: Acoustical properties
of some sound collectors for the aircraft sound collector.

YOSIDA, YAHEI. *See* Obata, Jūichi, and Yahei Yosida: The analysis of the sound emitted by aircraft.

YOUNG, ALFRED W. *See* Schey, Oscar W., and Alfred W. Young: Comparative flight performance with an N. A. C. A. Roots supercharger and a turbo-centrifugal supercharger.

YOUNG, CLARENCE M. Aeronautics and the municipality.
American City, Vol. 43, No. 3 (Sept. 1930), New York, pp. 119-120.

— After gliders what?
Western Flying, Vol. 8, No. 3 (Sept. 1930), Los Angeles, Calif., pp. 44-45, 124, illus.

— The aviation outlook for 1930.
Airway Age, Vol. 11, No. 1 (Jan. 1930), New York, pp. 37-39, ill.

— Engine testing laboratory.
Aviation Engineering, Vol. 3, No. 5 (May 1930), pp. 7-9, ill.

— Flying for sport.
The Sportsman Pilot, Vol. 3, No. 1 (Jan. 1930), New York, p. 19, port.

— International flying problems.
Aero Digest, Vol. 16, No. 3 (March 1930), New York, pp. 71, 240.

— Our aircraft overseas.
National Aeronautic Magazine, Vol. 8, No. 10 (Oct. 1930), Washington, pp. 33, 35, 37, ill.

— The province of federal and state regulation of aeronautics.
Journal Air Law, Vol. 1, No. 4 (Oct. 1930), Chicago, pp. 423-432.

— Report to President Hoover on progress of the country's air transportation.
Commercial & Financial Chronical, Vol. 131, No. 3401 (Aug. 30, 1930), New York, pp. 1360-1361.
150,000 passengers carried by air lines in 1929—increase of 200,000 expected in 1930.

— Secretary Young's report to the President.
Airway Age, Vol. 11, No. 10 (Oct. 1930), New York, pp. 1317-1318.

YOUNGSTEADT, R. W. Lovell Field, Chattanooga, Tenn.
Airway Age, Vol. 11, No. 11 (Nov. 1930), New York, pp. 1453-1456, ill.

— Lovell field Chattanooga's new municipal airport.
Aero Digest, Vol. 17, No. 6 (Dec. 1930), New York, pp. 86, 88, illus.

YSENBURG, GRAF. Bericht über den Schülungs-Wettbewerb des 10. Rhön-Segelflug-Wettbewerbes 1929.
Zeitschr. Flugt. Motorluftsch., 21. Jahrg., 4. Heft (28. Feb. 1930), München, pp. 99-100.

Z

ZMC2. Le dirigeable métallique ZMC2 (Amérique).
L'Aéophile, 38e année, Nos. 1-2 (ter-15 Jan. 1930), Paris, pp. 19-20, ill.

ZAHM, ALBERT FRANCIS. The Division of Aeronautics of the Library of Congress.
Mech. Eng., Vol. 52, No. 9 (Sept. 1930), New York, pp. 845-846, port.

— Soaring flight.
Journal of the Maryland Academy of Sciences, Vol. 1, No. 1 (Jan. 1930), Baltimore, Md., pp. 8-19, illus., diagrs.

— Some memories of Mr. Curtiss.
National Aerinautic Review, Vol. 8, No. 8 (Aug. 1930), Washington, pp. 39, 62, port.

ZAHM, ALBERT FRANCIS, and C. A. Ross. Tentative bibliography on skin friction flow. (Enlarged edition of bibliography dated May 1930.)
Washington, Library of Congress, Division of Aeronautics, December 31, 1930 (mimeographed), pp. 26.

- ZAHM, ALBERT FRANCIS.** Theoretical aerodynamics.
Mech. Eng., Vol. 52, No. 4 (April 1930), New York, pp. 499-500, port.
- See Library of Congress: Dr. Zahm appointed to Guggenheim chair of aeronautics in Library of Congress.
- ZANDER, W.** Der einfluss der Oberflächenbeschädigungen auf die Biegungsschwingungsfestigkeit.
Berlin, NEM Verlag G. m. b. H., 1929, pp. 100.
- ZANNELLI, N. A.** La pratica dei motori d'aviazione. Presa in consegna; avviamento; marcia e irregolarità; manutenzione; riparazione e revisione; caratteristiche di alcuni motori.
Milano, U. Hoepli (scuola tip. Figli della provvidenza), 1930, pp. ix, 265.
- ZEDITZ, BARON VON.** See Chichester, Francis G.: Solo to Sydney. Introduction by Baron von Zeditz.
- ZEISLER, KARL F.** Michigan's new state aviation code.
Aero Digest, Vol. 16, No. 4 (April 1930), New York, p. 198.
- ZENITH.** See Hegener, Henri: De noodlottige hoogtevaart van de "Zenith."
- ZEPPELINS.** Zeppelin fährt um die Welt.
Sondernummer der Zeitschrift "Woche." Berlin, Scheri-Verlag, 1929, pp. 97, ill.
- See Dettmann, L.: Mit dem Zeppelin nach Amerika.
- See Graf Zeppelin.
- See Haberkorn, Ernst Erwin, und Hans v. Schiller: Im Zeppelin über der Schweiz.
- See Prepositi, Clemente: La disfatta degli "Zeppelin" nella guerra del mondo.
- See Scholte, J. B.: De Zeppelin en de Do-X.
- ZINC.** See Gough, H. J., and H. L. Cox: Further experiments on the behaviour of single crystals of zinc subjected to alternating torsional stresses.
- ZIOLKOWSKY, KONSTANTIN EDUARDOWITSCH.** Fernflug und Mehrfachraketen.
Kaluga, U. d. S. S. R. 1929, pp. 38.
- Den Sternfahrern.
Kaluga, U. d. S. S. R., Typographis O. S. N. Ch. Okrlit, 1930, pp. 32.
- ZODIAC.** La nouvelle vedette Zodiac VZ 27.
L'Aéronautique, 12me année, No. 139 (déc. 1930), Paris, pp. 490-491, ill.
- ZOLLMAN, CARL FREDERICK GUSTAV.** Cases on air law.
St. Paul, West Publishing Co., 1930, pp. xii, 530.
Reviewed by John W. Curran in Georgetown Law Journal, Vol. 18, No. 3 (March 1930), Washington, D. C., pp. 284-285.
- ZURIGO-DÜBENDORF.** Il nuovo aeroporto di Zurigo-Dübendorf.
Riv. Aeron., Anno 6, N. 10 (Ott. 1930), Roma, pp. 166-168, ill.

