National Advisory Committee for Aeronautics

Fortieth Anniversary

1955

"....to supervise and direct the scientific study of the problems of flight, with a view to their practical solution....."

---Act of Congress
March 3, 1915

NACA

1915

Brig. Gen. George P. Scriven, USA
Chief Signal Officer
Member 1915-17
Chairman 1915-16

Joseph S. Ames
Johns Hopkins University
Member 1915-39
Chairman Executive Committee 1919-37
Chairman 1927-39

Rear Adm. Mark L. Bristol, USN
Member 1915-16

William F. Durand
Stanford University
Member 1915-33; 1941-45
Chairman 1916-18

John F. Hayford
Northwestern University
Member 1915-23

Charles F. Marvin
Chief, Weather Bureau
Member 1915-34

Byron R. Newton
Assistant Secretary, Treasury
Member 1915-18

Michael I. Pupin
Columbia University
Member 1915-22

Lt. Col. Samuel Reber, USA
In Charge Av. Sec. Signal Corps
Member 1915-16

Lt. Holden C. Richardson, USN
Naval Constructor
Member 1915-17
Secretary 1915-16

Samuel W. Stratton
Director, Bureau of Standards
Member 1915-31
Secretary 1916-23

Charles D. Walcott
Secretary, Smithsonian Institution
Member 1915-27
Chairman Executive Committee 1915-19
Chairman 1919-27

ORIGINAL COMMITTEE MEMBERSHIP

NACA
1955

Dr. Jerome C. Hunsaker
Massachusetts Institute of Technology
Member 1922-23, 1938-
Chairman 1941-

Honorable Joseph P. Adams
Civil Aeronautics Board
Member 1952-

Dr. Allen V. Astin
Director, National Bureau of Standards
Member 1952-

Preston R. Bassett
Sperry Gyroscope Company, Inc.
Member 1953-

Dr. Detlev W. Bronk
Rockefeller Institute for Medical Research
Member 1948-
Vice Chairman 1953-

Dr. Leonard Carmichael
Secretary, Smithsonian Institution
Member 1953-

Vice Admiral Thomas S. Combs, USN
Dept. Chief of Nav. Oper. for Air
Member 1952-53, 1955-

Dr. Frederick C. Crawford
Thompson Products, Inc.
Member 1954-

Ralph S. Damon
Trans World Airlines, Inc.
Member 1953-

Dr. James H. Doolittle
Shell Oil Company
Member 1948-

Rear Adm. Lloyd Harrison, USN
Dept. and Asst. Chief, BUAER
Member 1953-

Lt. General Donald L. Putt, USAF
Dept. Chief of Staff, Dev., USAF
Member 1949-

Honorable Donald A. Quarles
Assistant Secretary of Defense
Member 1954-

Dr. Arthur E. Raymond
Douglas Aircraft Company, Inc.
Member 1946-

Dr. Francis W. Reichelderfer
Chief, U.S. Weather Bureau
Member 1939-

General Nathan F. Twining, USAF
Chief of Staff, U.S. Air Force
Member 1954-

PRESENT COMMITTEE MEMBERSHIP

CHAIRMEN AND FORMER MEMBERS

Chairmen

*Brig. Gen. George P. Scriven, USA, Chief Signal Officer	1915-16
William F. Durand, Stanford University	1916-18
*John R. Freeman, Providence, R. I.	1918-19
*Charles D. Walcott, Secretary, Smithsonian Institution	1919-27
*Joseph S. Ames, Johns Hopkins University	1927-39
Vannevar Bush, President, Carnegie Institution of Washington	1939-41
Jerome C. Hunsaker, Massachusetts Institute of Technology	1941-

Former Members

*Joseph S. Ames, Johns Hopkins University	1915-39
*Capt. Mark L. Bristol, USN, Director Naval Aeronautics	1915-16
William F. Durand, Stanford University	1915-33; 41-45
*John F. Hayford, Northwestern University	1915-23
*Charles F. Marvin, Chief, Weather Bureau	1915-34
*Byron R. Newton, Assistant Secretary, Treasury	1915-18
*Michael I. Pupin, Columbia University	1915-22
*Lt. Col. Samuel Reber, USA, In Charge Aviation Section Signal Corps	1915-16
Naval Constructor Holden C. Richardson, USN	1915-17
*Brig. Gen. George P. Scriven, USA, Chief Signal Officer	1915-17
*Samuel W. Stratton, Director, Bureau of Standards	1915-31
*Charles D. Walcott, Secretary, Smithsonian Institution	1915-27
*Major Gen. George O. Squier, USA, Chief Signal Officer	1916-18
Admiral John H. Towers, USN	1917-19; 29-31; 39-42
*Colonel Virginius E. Clark, USA	1917-18
*Rear Admiral David W. Taylor, USN (civilian member from 1922)	1917-38
*John R. Freeman, Providence, R. I.	1918-19
*Major Gen. William L. Kenly, USA, Dir. of Mil. Aeronautics	1918-19
*Wallace C. Sabine, Bureau of Aircraft Production	1918
*Major General Charles T. Menoher, USA, Chief of Air Service	1919-21
*Colonel Thurman H. Bane, USA	1919-22
*Vice Admiral Thomas T. Craven, USN	1919-21
*Orville Wright, Dayton, Ohio	1920-48
*Rear Admiral William A. Moffett, USN, Chief, Bur. of Aeronautics	1921-33
*Major Gen. Mason M. Patrick, USA, Chief of Air Service	1921-27
Colonel Lawrence W. McIntosh, USAF	1923-24
*George K. Burgess, Director, Bureau of Standards	1923-32
Vice Admiral Emory S. Land, USN	1923-29
Major General John F. Curry, USAF	1924-26
*Brig. Gen. William E. Gillmore, USA	1926-29
*Major Gen. James E. Fechet, USA, Chief of Air Service	1928-31
Charles G. Abbot, Secretary, Smithsonian Institution	1928-45
Harry F. Guggenheim, Long Island, N. Y.	1929-38
William P. MacCracken, Jr., Asst. Sec. of Commerce	1929-38
Edward P. Warner, private life and later Civil Aeronautics Board	1929-45
Major Gen. Benjamin D. Foulois, USAF, Chief of Air Corps	1929-30; 32-36
Major Gen. Henry C. Pratt, USAF	1930-35
*Vice Admiral Arthur B. Cook, USN	1931-34; 36-39
Brig. Gen. Charles A. Lindbergh, USAFR	1931-39
Lyman J. Briggs, Director, Bureau of Standards	1933-45
Fleet Admiral Ernest J. King, USN	1933-36

*Deceased

Eugene L. Vidal, Director, Bureau of Air Commerce	1933-37
Commander Ralph D. Weyerbacher, USN	1934-36
*Willis R. Gregg, Chief, Weather Bureau	1934-38
*Brig. Gen. Augustine W. Robins, USA	1935-39
*Major Gen. Oscar Westover, USA, Chief of Air Corps	1936-38
Rear Admiral Sydney M. Kraus, USN	1936-43
Fred D. Fagg, Jr., Director, Bureau of Air Commerce	1937-38
Denis Mulligan, Director, Bureau of Air Commerce	1938
Vannevar Bush, President, Carnegie Institution of Washington	1938-48
Edward J. Noble, Chairman, Civil Aeronautics Authority	1938-39
Clinton M. Hester, Administrator, Civil Aero. Auth.	1938-40
*General of the Air Force Henry H. Arnold	1938-46
Lt. Gen. George H. Brett, USAF	1939-42
Robert H. Hinckley, Assistant Secretary of Commerce	1939-42
*George J. Mead, Hartford, Conn.	1939-43
*Walter G. Kilner, (Retired Brig. Gen. USA)	1939-40
*Robert E. Doherty, Carnegie Institute of Technology	1940-41
Donald H. Connolly (Retired Maj. Gen., USA), Admin. of Civil Aero.	1940-42
*Major Gen. Oliver P. Echols, USAF	1942-45
William A. M. Burden, Assistant Secretary of Commerce	1942-47
*Vice Admiral John S. McCain, USN	1942-44
Theodore P. Wright, Director of Aircraft Production; Administrator of Civil Aeronautics; Cornell University	1942-53
Rear Admiral Ernest M. Pace, Jr., USN	1943-44
William Littlewood, American Airlines	1944-53
Vice Admiral Aubrey W. Fitch, USN	1944-45
Rear Admiral Lawrence B. Richardson, USN	1944-46
Alexander Wetmore, Secretary, Smithsonian Institution	1945-52
Major Gen. Edward M. Powers, USAF	1945-49
*Vice Admiral Marc A. Mitscher, USN	1945-46
Edward U. Condon, Director, Bureau of Standards	1945-51
Admiral Arthur W. Radford, USN	1946-47
Ronald M. Hazen, Allison Division, General Motors	1946-54
General Carl Spaatz, Chief of Staff, USAF	1946-48
Rear Admiral Leslie C. Stevens, USN	1946-47
Admiral Donald B. Duncan, USN	1947-48
Rear Admiral Theodore C. Lonnquest, USN	1947-52
John R. Alison, Assistant Secretary of Commerce	1947-49
Admiral John D. Price, USN	1948-50
Delos W. Rentzel, Administrator Civil Aeronautics, Under Secretary Commerce	1948-51
*General Hoyt S. Vandenberg, Chief of Staff, USAF	1948-50
*Karl T. Compton, Research and Development Board	1948-49
Thomas W. S. Davis, Assistant Secretary Commerce	1950-53
William Webster, Chairman Research and Development Board	1950-51
Admiral John H. Cassady, USN	1950-52
Major Gen. Gordon P. Saville, USAF	1950-51
Donald W. Nyrop, Chairman, Civil Aeronautics Board	1951-52
Walter G. Whitman, Chairman, Res. and Develop. Board	1951-53
Lt. Gen. Laurence C. Craigie, USAF	1951-54
Vice Admiral Matthias B. Gardner, USN	1952-53
Vice Admiral Ralph A. Ofstie, USN	1953-55
Robert B. Murray, Jr., Under Secretary, Commerce	1953-54
Oswald Ryan, Civil Aeronautics Board	1954

*Deceased

NACA

Dr. George W. Lewis
Director
1919 - 1947

Dr. Hugh L. Dryden
Director
1947 -

Dr. John F. Victory
Executive Secretary
1915 -

Edward H. Chamberlin
Executive Officer
1918 -

John W. Crowley
Assoc. Dir. for Res.
1921 -

Dr. Henry J. E. Reid
Director
Langley Aeronautical Laboratory
1921 -

Dr. Smith J. DeFrance
Director
Ames Aeronautical Laboratory
1923 -

Dr. Edward R. Sharp
Director
Lewis Flight Propulsion Laboratory
1922 -

National Advisory Committee for Aeronautics Fortieth Anniversary Dinner

THURSDAY, APRIL 14, 1955

GREAT HALL
THE SMITHSONIAN INSTITUTION
WASHINGTON, D. C.

MENU

Shrimp Cocktail

Consomme Florentine

Celery Olives

Prime Ribs of Beef, Au Jus

Asparagus Spears, Parmesan Baked Stuffed Potato

Tossed Green Salad - Avocado

Assorted Rolls

Strawberry Melba au Kirsch

Demi Tasse

PROGRAM

Presiding

JAMES H. DOOLITTLE
Vice President, Shell Oil Company
Member, NACA, 1948-

Remarks

LEONARD CARMICHAEL
Secretary, Smithsonian Institution
Member, NACA, 1953-

EDWIN B. WILSON
Professor Emeritus, Harvard University

VANNEVAR BUSH
President, Carnegie Institution of Washington
Member, NACA, 1938-1948
Chairman 1939-1941

FREDERICK C. CRAWFORD
Chairman of the Board, Thompson Products, Inc.
Member, NACA, 1954-

Presentation of Langley Medal

EARL WARREN
Chief Justice of the United States
Chancellor, Smithsonian Institution
presents

THE LANGLEY MEDAL OF THE SMITHSONIAN INSTITUTION

to

JEROME C. HUNSAKER
Chairman, National Advisory Committee for Aeronautics

THE LANGLEY MEDAL

The Langley Gold Medal was established by the Board of Regents, Smithsonian Institution on December 15, 1908, at the suggestion of Dr. Alexander Graham Bell "to be awarded for specially meritorious investigations in connection with the science of aerodromics and its application to aviation."

The eighth award of the Langley Gold Medal for Aerodromics is made in accordance with the vote of the Board of Regents of the Smithsonian Institution at its annual meeting on January 14, 1955.

CITATION

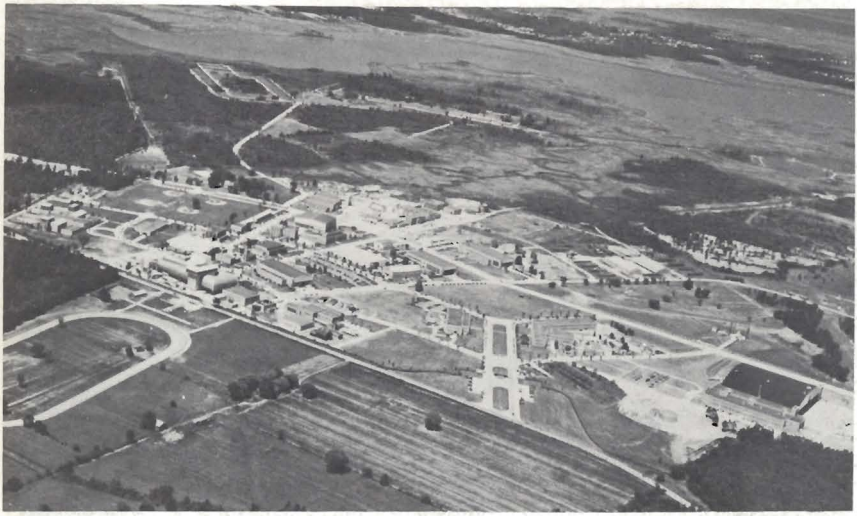
"Jerome Clarke Hunsaker, the Smithsonian Institution confers upon you its Langley Gold Medal for Aerodromics in recognition of your unique and superlatively important contributions to aeronautics as a distinguished designer of aircraft, as the creator of a great center for instruction in aeronautical engineering, and as the scientific genius, under whose leadership the present-day National Advisory Committee for Aeronautics has become the world's greatest scientific aeronautical research organization."

Langley Medal Awards

Wilbur and Orville Wright	1909
Glenn H. Curtiss	1913
Gustave Eiffel	1913
Charles A. Lindbergh	1927
Charles Matthews Manly	1929
Richard Evelyn Byrd	1929
Joseph S. Ames	1935

NACA
1955

East Area

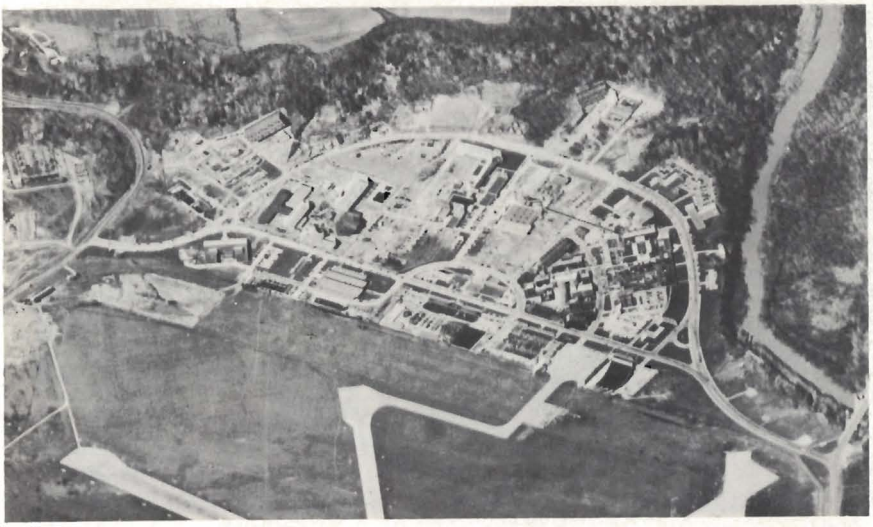


West Area

Langley Aeronautical Laboratory Langley Field, Virginia
Established 1917

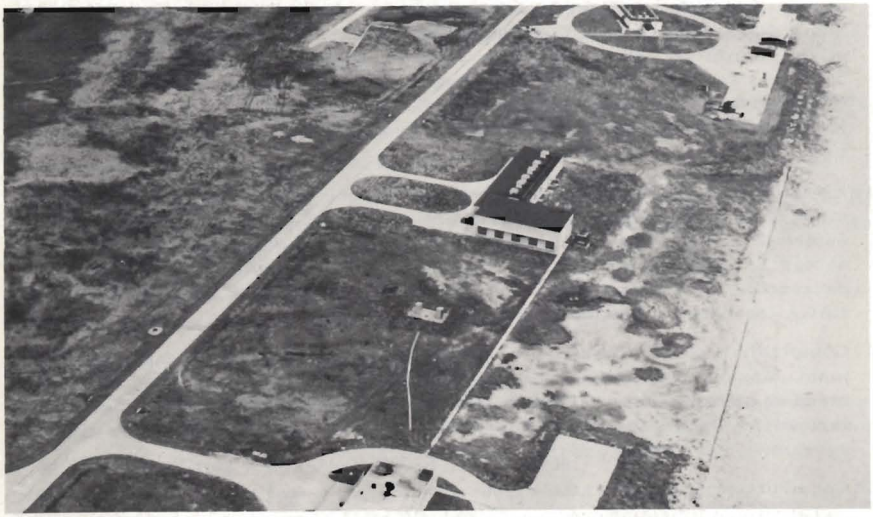
NACA
1955

Ames Aeronautical Laboratory — Moffett Field, California
Established 1939

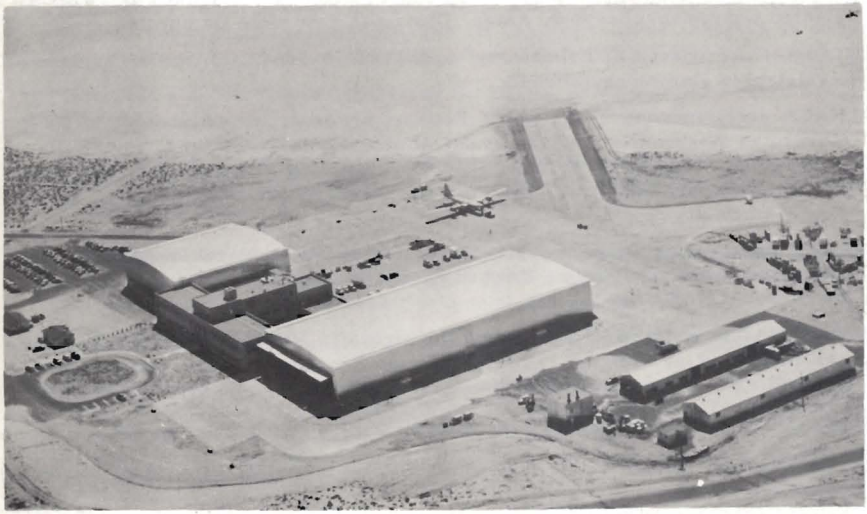


Lewis Flight Propulsion Laboratory — Cleveland, Ohio
Established 1940

NACA
1955



Pilotless Aircraft Research Station — Wallops Island, Virginia
Established 1945



High-Speed Flight Station — Edwards, California
Established 1946

BRIEF CHRONOLOGY OF NACA

1915 National Advisory Committee for Aeronautics established by Act of Congress approved March 3. First meeting April 23. General Scriven elected Chairman. Naval Constructor Richardson Secretary, Dr. Walcott Chairman Executive Committee. First employee John F. Victory June 22. First research contracts June 30. First Technical Report by J. C. Hunsaker and E. B. Wilson. NACA surveyed facilities for, and interest in, aeronautical research, resulting in recommendation in first Annual Report December 9 for an NACA laboratory.

1916 First meeting of industry called by NACA June 8 to promote U. S. development of aircraft engines. Held in Smithsonian Institution. First steps to establish Army-Navy-NACA experimental field at Hampton, Virginia (later named Langley Field). W. F. Durand elected Chairman, S. W. Stratton, Secretary. Secretary of War allotted NACA plot 16 at Langley Field for NACA laboratory, December 27.

1917 Comptroller of the Treasury declared NACA to be an independent establishment January 10. NACA construction started at Langley. NACA recommended creation of an Aircraft Production Board. Special NACA committee formed to study patent situation; meetings held with industry; cross-license agreement resulted in enduring patent peace.

1918 Construction began on NACA's first wind tunnel, 5-foot throat. Recommended and assisted in negotiations to establish air mail service. E. H. Chamberlin, now Executive Officer, joined NACA staff. John R. Freeman elected Chairman.

1919 Recommended legislation to encourage and regulate civil aviation. Edward P. Warner and George W. Lewis joined NACA staff. Charles D. Walcott elected Chairman; Joseph S. Ames, Chairman Executive Committee.

1920 Langley Aeronautical Laboratory dedicated in June. Office of Technical Assistant in Europe established.

1921 NACA recommended a system of Federal airways, establishment of Navy Bureau of Aeronautics, development of aircraft carriers, and use of helium in airships. Henry J. E. Reid now Director Langley Laboratory, and John W. Crowley now Associate Director for Research at Headquarters, joined NACA staff.

1922 Chief Constructor David W. Taylor, USN, retired as Naval member NACA and reappointed as civilian. Edward R. Sharp, now Director Lewis Laboratory, joined NACA staff.

1923 First NACA report on jet propulsion for aircraft. Variable density wind tunnel completed at Langley. Taylor elected Secretary to succeed Stratton. Smith J. DeFrance, now Director Ames Laboratory, joined NACA staff.

1924 George W. Lewis named Director of Aeronautical Research.

1925 Construction started on 20-foot wind tunnel, the first capable of full-scale propeller research.

1926 First of the annual aircraft engineering research conferences with industry held at Langley. Legislation recommended by NACA in 1919 resulted in Air Commerce Act.

1927 Dr. Ames elected Chairman succeeding Walcott deceased. Taylor elected to new post of Vice Chairman. Victory succeeded Taylor as NACA Secretary.

1928 NACA operated wind tunnel at speeds approaching sonic speed.

1929 NACA awarded Collier Trophy for development of cowling for radial engines. Congress increased NACA membership from 12 to 15.

1930 NACA reported to industry results of its studies of optimum position of engine nacelles. First applications: Boeing 247; Douglas DC-2; Martin B-10.

1931 NACA completed first full scale wind tunnel.

1932 Research began in NACA's first seaplane towing tank. NACA issued its first comprehensive report on a "family of airfoils", most widely used wing sections in the world during '30's.

1933 Depression threatened continued support of aeronautical research.

1934 Contract awarded for 8-foot 500 m. p. h. wind tunnel.

1935 Chairman Ames awarded Langley Medal.

1936 NACA formed special committee on its relation to national defense in time of war. Willis R. Gregg elected chairman Executive Committee, vice Ames.

1937 First free flight wind tunnel placed in operation.

1938 NACA urged enlargement of Langley Laboratory and establishment of new laboratory on West Coast. Low turbulence tunnel completed. Vannevar Bush elected Chairman, Executive Committee, vice Gregg, deceased.

1939 Congress authorized NACA second major laboratory. Moffett Field, California chosen. Smith J. DeFrance selected as Director. Construction of Structures Laboratory begun in newly allotted "West Area" of Langley Field. Gust tunnel and 19-foot pressure tunnel completed at Langley. Ames resigned as member and chairman for reasons of health. Bush elected Chairman.

1940 Congress authorized new laboratory for engine research. Cleveland selected, Edward R. Sharp in charge.

1941 W. F. Durand recalled from retirement to head NACA's special Committee on Jet Propulsion. Bush resigned as Chairman, remained member. Hunsaker elected Chairman and Chairman Executive Committee.

1942 Propulsion laboratory began operations at Cleveland. Impact basin completed at Langley. NACA concentrated upon applied research problems to improve performance of military aircraft scheduled for production.

1943 NACA began to shift research emphasis from piston to jet engines.

1944 Moffett Field laboratory named Ames Aeronautical Laboratory in honor of Joseph S. Ames. Wallops Island, Virginia, selected as site for Pilotless Aircraft Research Station. First American jet engine investigated in new altitude wind tunnel at Cleveland Laboratory. 40- by 80-foot full scale wind tunnel, believed largest in world, completed at Ames.

1945 NACA World War II work included studies of more than 100 types of aircraft. NACA initiated high-speed research airplane program in cooperation with military and industry. NACA established Industry Consulting Committee.

1946 Lewis A. Rodert awarded Collier Trophy for development of thermal ice prevention system. NACA decided to work on problems relating to use of nuclear energy for propulsion of aircraft. Activity now known as NACA High-Speed Flight Station began at Muroc, California.

1947 John Stack of Langley Laboratory co-winner of Collier Trophy for concept of transonic research airplane program which resulted in first supersonic flight. Hugh L. Dryden named Director of Aeronautical Research to succeed George W. Lewis, named Consultant.

1948 Congress increased membership of NACA from 15 to 17. Two additional members appointed from industry. George W. Lewis died July 12. Cleveland Laboratory named Lewis Flight Propulsion Laboratory. Langley 4-foot and Ames 6-foot supersonic tunnels placed in operation.

1949 8- by 6-foot supersonic propulsion wind tunnel placed in operation at Lewis. Congress authorized construction of Unitary Plan supersonic wind tunnels.

1950 NACA announced supersonic free-flight wind tunnel with a potential of 15 times sonic speed, operating at Ames Laboratory. First use of NACA slotted throat principle in 8-foot transonic tunnel at Langley.

1951 John Stack and associates at Langley awarded Collier Trophy for conception, development, and practical application of transonic wind tunnel throat.

1952 Results of crash-fire research announced, including techniques for fire prevention. New propulsion systems laboratory placed in operation at Lewis.

1953 Scott Crossfield, NACA High-Speed Flight Station, was first man to fly at twice the speed of sound.

1954 Classified.

1955 Operation of Unitary Plan wind tunnels began.

NACA
Fortieth Anniversary Celebration Committee

Ralph E. Cushman, Chairman
Paul G. Dembling
T. L. K. Smull
Ralph E. Ulmer
Clotaire Wood

NACA-Langley - 5-16-55 - 8M