



United States Air Force
Scientific Advisory Board
50th Anniversary
1944 - 1994



Arnold



Von Kármán

Commemorative History
November 9-10, 1994

United States Air Force Scientific Advisory Board 50th Anniversary

Fifty years ago, American technology ended a world war and saved several hundred thousand lives. General Hap Arnold formalized the role top scientists played in advising the then Army Air Corps by creating the Scientific Advisory Group on December 1, 1944 and naming Dr. Theodore von Kármán as its first chairman.

This group produced the renowned study, "Toward New Horizons," that set forth many of the early research and development goals pursued by the early Air Force. The Scientific Advisory Group evolved into the Scientific Advisory Board that we commemorate today.

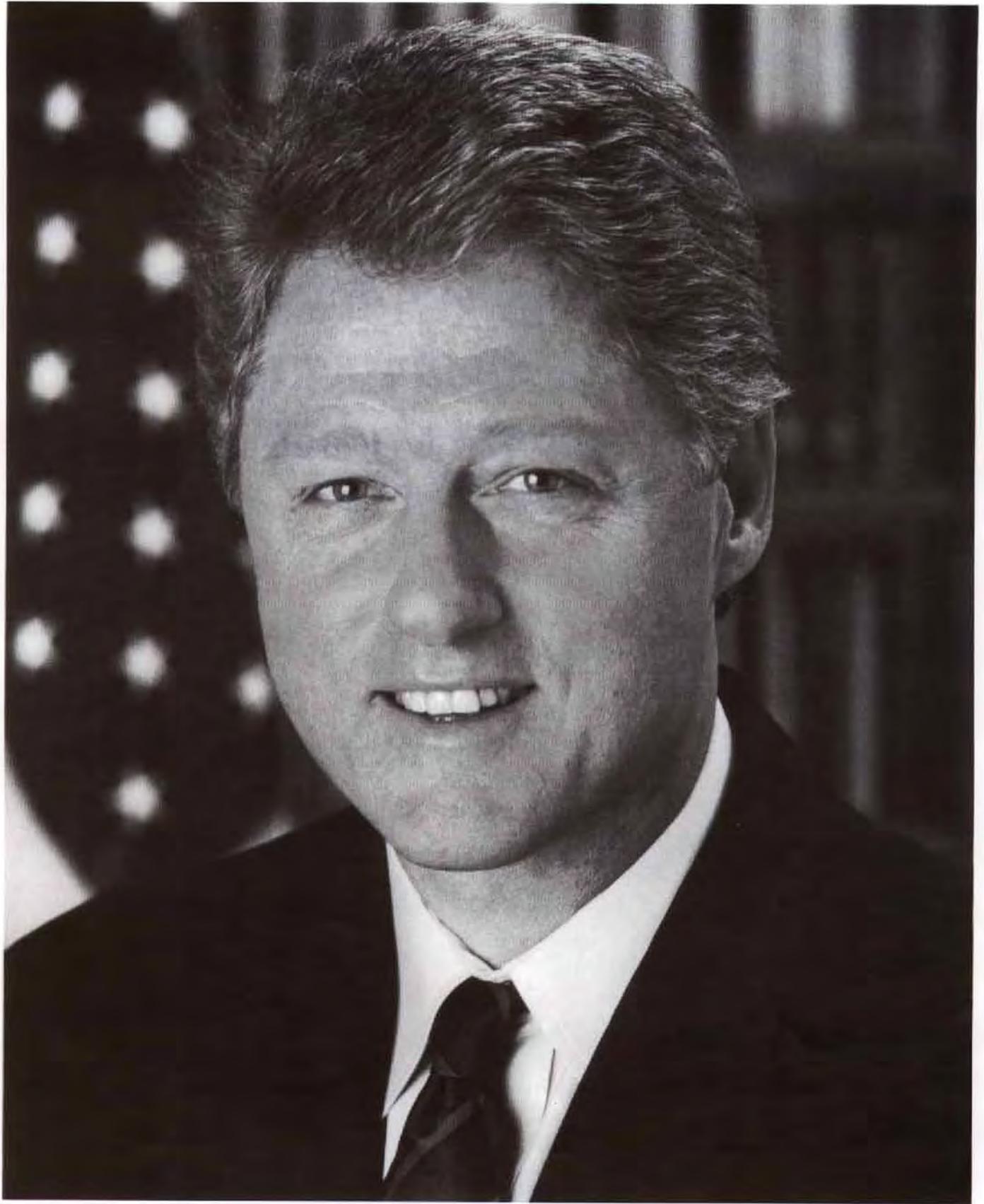
The mission of the Scientific Advisory Board is to provide the Air Force senior leadership with independent advice and counsel that will help the Air Force maintain technological superiority in air and space. Today's challenge for that group of renowned scientists is not unlike the original Scientific Advisory Group aim of assembling and evaluating facts on long-range research and development, and preparing special studies on scientific and technical matters pertaining to air power.

The growth of American air and space power since WW II has paralleled the scientific and technological development of the United States' industry. The Scientific Advisory Board established a vision for aerospace research and development and then remained active in forging lasting ties among academia, industry, and the military.

The Scientific Advisory Board epitomizes those critical ties that foster innovative concepts and applications of science and technology for a strong national defense. The people of these United States deeply appreciate the contribution Board members have made to preserving our freedoms and applaud their continued commitment to those ideals of self-sacrifice in public service.

United States Congress
Congressional Record
October 7, 1994

United States Air Force
Scientific Advisory Board
50th Anniversary
Commemorative History
November 9–10, 1994





THE WHITE HOUSE
WASHINGTON

October 13, 1994

Warm greetings to the members of the Air Force Scientific Advisory Board as you celebrate the board's fiftieth anniversary. I am proud to salute all of you for your dedicated service to our nation.

Throughout the past half century, the SAB has made impressive advances in technology development, acquisition management, research and development innovation, and many other areas. SAB's members have served and continue to uphold the fine tradition of General Hap Arnold and Dr. Theodore Von Karman, whose brilliance and vision helped to create the SAB so many years ago.

America's continued success and preparedness requires us to remain at the forefront of technological development. I join a grateful nation in thanking you for your important contributions to that crucial mission. Your steadfast commitment to excellence will strengthen our nation and help to build a safer, more secure tomorrow for the generations to come.

Best wishes for a memorable anniversary celebration.

Bill Clinton



I am proud to recognize the Scientific Advisory Board's contributions toward 50 years of progress in aerospace science and technology. Having served with the Board in 1976, I have a deep appreciation for its history and value to the nation. As vital leaders of the science and technology community, your dedication and talents have played, and will always play, a crucial role in maintaining a strong defense.

The nation will continue to call upon the Scientific Advisory Board for truly unbiased and independent counsel. You have my full support for that critical work and my heartiest congratulations for five decades of intrepid service.

William J. Perry
Secretary of Defense

*Since becoming Secretary of the Air Force, I have looked forward to this celebration. For the last 50 years, the Scientific Advisory Board has kept the Air Force on the cutting edge of science and technology. Thanks to the SAB's **legacy of the past**, science, engineering and innovation are integral parts of the Air Force culture.*

*The **promise for the future** is also in your hands. As the pace of technological change quickens and the research and development investment decreases, we will rely on your expert advice more than ever before to ensure we remain the world's most respected air and space force.*

Sheila E. Widnall
Secretary of the Air Force





As the new Chief of Staff, I look forward with great anticipation to my association with the USAF Scientific Advisory Board. Your invaluable service predates the Air Force and has been key to both national security and the conservation of our most valuable resource: our people. Without your efforts, I have no doubt that more Air Force members would have sacrificed their lives in combat, for less certain results, than has been our history.

Everyone in our Service congratulates you on this 50th anniversary and looks forward to your continued service. You are an invaluable part of the Air Force team.

Ronald R. Fogleman
General, USAF
Chief of Staff

For fifty years, the members of the Air Force Scientific Advisory Board have been dedicated to helping the United States Air Force to maintain a technological supremacy unparalleled in history. Science and technology define the avenue for the continuing journey which is necessary to preserve the capability of the Air Force to respond to threats to the security of the United States. It is a privilege for the members of the SAB to be an important companion in this journey. Changes in international and national priorities, and a new technological revolution, have changed the missions and the structure of the Air Force. The SAB is prepared to meet the new challenges through changes in emphasis, activities, and structure and an unchanging dedication to scientific excellence and innovation.

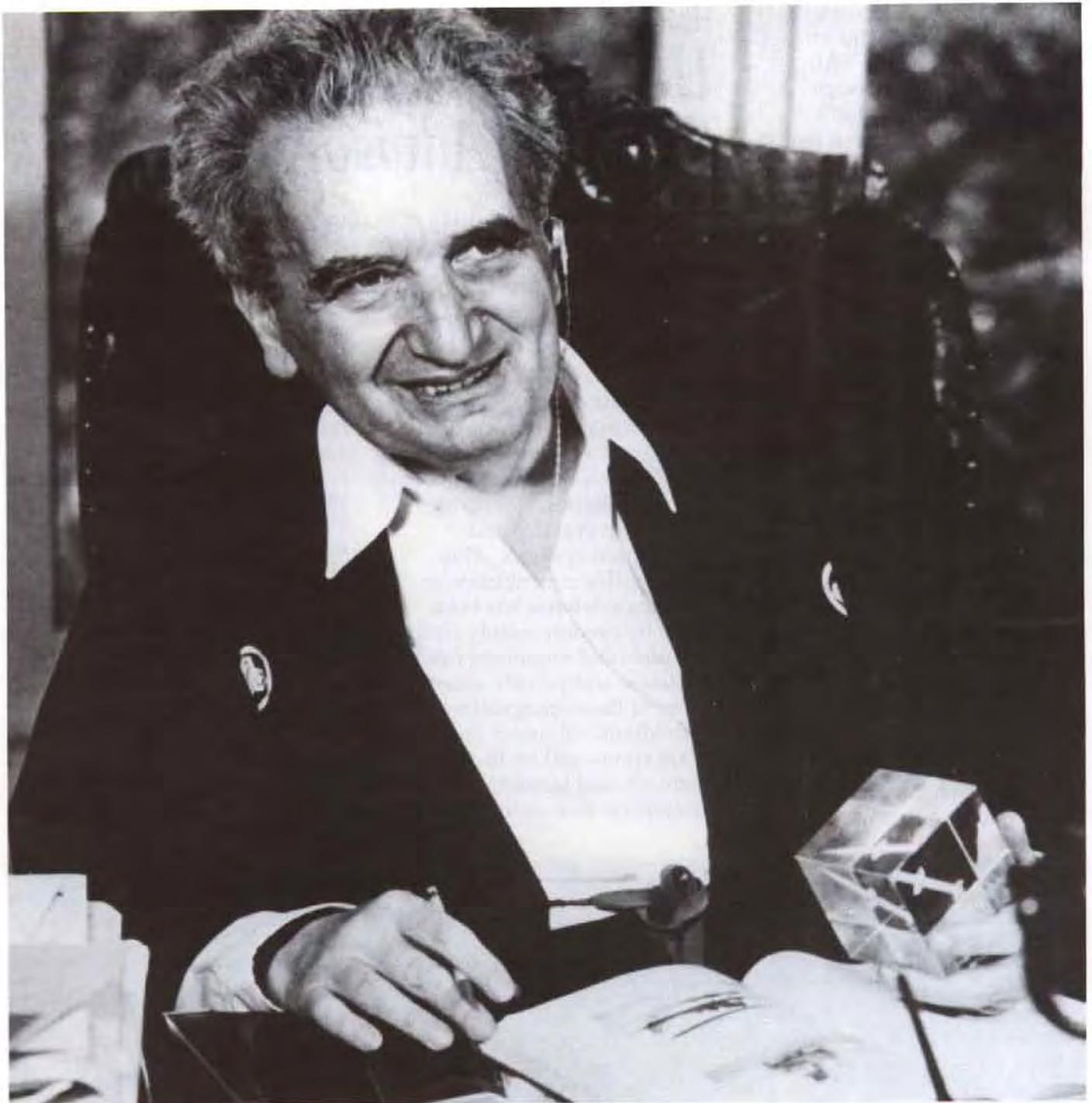
Gene H. McCall, Ph.D.
Chairman
USAF Scientific
Advisory Board





I don't think we dare muddle through the next twenty years the way we have ... the last twenty years. I have worked with von Kármán these last twenty years, and I was sometimes scared by the knowledge he had that we weren't using ... I don't want ever again to have the United States caught the way we were this time.

Henry H. Arnold
General, USAF
Addressing the Scientific Advisory Group
January, 1945



I believe the Air Force is a high building constantly adding new construction. If we can put in a few bricks, especially in the lower levels which carry the weight - if we can build the foundation, we will be very happy.

Dr. Theodore von Kármán
Addressing the Scientific Advisory Board
April, 1949

December 1994 will mark the 50th anniversary of the formation of the Army Air Forces Scientific Advisory Group by General "Hap" Arnold and renowned scientist Dr. Theodore von Kármán. Their charter: to predict the technological needs of what would soon be the United States Air Force.

The Group began its service to the Air Force and the nation with a milestone report, *Toward New Horizons*, which remains a powerful influence on Air Force research and development. The Group then evolved into the USAF Scientific Advisory Board (SAB) and took its permanent place in our Service.

Since that auspicious inception, the SAB has been the medium through which America's best scientific and technical talent has advised both the Secretary of the Air Force and its Chief of Staff on future technology. Collectively and independently, SAB members evaluate long range research and development plans to form a two way bridge

History of the *United States Air Force Scientific Advisory Board*

between the Air Force and industry/academia. The bottom line is practical application of American innovative genius to meet national security needs with minimal risk to our people.

From the dawn of the jet age, through the space age, and into this information age, the SAB has played a key role in advising the USAF on the development of aircraft, missiles, spacecraft, propulsion systems and information systems. This irreplaceable contribution to America's defense has been made by predominately civilian scientists and engineers from the academic and private sector. Many of these imaginative individuals volunteer their time or are sponsored by their institutes and laboratories. As committees and individually,

they are a national treasure with a history of self-sacrificing service that predates the Department of Defense.

For further information on the SAB's history, consider these sources:

Harnessing the Genie: Science and Technology Forecasting for the Air Force 1944-1986. Michael H. Gorn. 1988

The Universal Man: Theodore von Kármán's life in Aeronautics.

Michael H. Gorn. 1992

Research and Development in the United States Air Force.

Jacob Neufeld. 1993

"A Study of Some Effects of the Scientific Advisory Group's Recommendations on Air Force Research and Development for the Period 1945-1950" (Thesis).

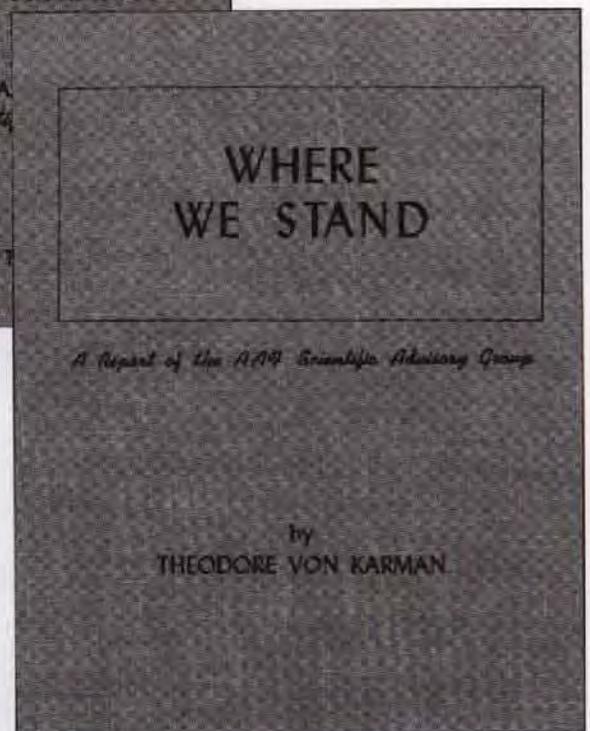
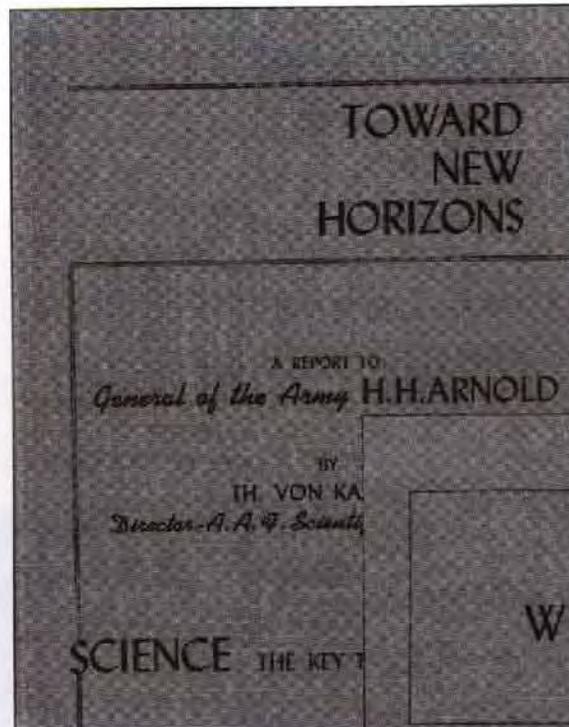
Thomas J. O'Conner, University of Denver, 1969.



Scientific Advisory Board, First Meeting, 17 June 1946 Seated, left to right: Dr. George E. Valley, Jr.; Dr. Frank L. Wattendorf; Dr. George A. Morton; Dr. Nathan M. Newmark; Dr. Walter S. Hunter; Dr. Lee A. DuBridge; Dr. Detley Bronk; Dr. Theodore von Kármán; Dr. Charles W. Bray; Dr. C. Richard Soderberg; Dr. Courtland D. Perkins; Dr. Charles S. Draper; Dr. Harold T. Friis; & Dr. William R. Sears. Standing, left to right: Dr. Pol E. Duwez; Dr. Hsue-shen Tsien; Dr. William H. Pickering; Dr. Ivan A. Getting; Dr. W. J. Sweeney; Dr. W. Randolph Lovelace, II; Dr. Julius A. Stratton; Dr. Duncan P. MacDougall; Dr. Edward M. Purcell; Dr. Vladimir K. Zworykin; Dr. Fritz Zwicky; Dr. Robert H. Kent; Col William S. Stone; and Col Roscoe C. Wilson. Not pictured: Prof. Enrico Fermi; Dr. George Gamow; Dr. Hugh L. Dryden; Dr. Walter A. McNair; and Col Benjamin C. Holzman.

Reports

1944-1994



Report Of Conference On Censorship Of Jet Propulsion Material: April 1945

Toward New Horizons T. von Kármán, H. Tsien, W. Sears, I. Ashkenas, C. Hasert, N. Newmark, T. Walkowicz, F. Wattendorf, P. Duwez, W. Sweeney, L. Hammett, A. Stosick, H. Dryden, W. Pickering, G. Schubauer, G. Morton, I. Getting, G. Gamow, D. MacDougall, L. DuBridge, E. Purcell, G. Valley, Jr., I. Krick, W. Lovelace, II, W. Bray: December 1945

Penicillin First Computer P-80 Atom Bomb
G. I. Bill D-Day Roosevelt Yalta Truman

1944

von Kármán

1945

*Toward New Horizons
Jet Propulsion*

*Research & Development In USAF
(Ridenour Report) L. Ridenour:
September 1949*

*Report Of Electronics And
Communications Panel L. Ridenour:
October 1949*

*Report Of Meeting Of Geophysical
Panel: November 1949*

*Explosives And Armament Panel
R. Kent: January 1950*

*Fuels And Propulsion Panel: February
1950*

*Special Committee On AEDC
Operations: April 1950*



Transistors F-86
Berlin Airlift

Soviet Atom Bomb
NATO

Ramjet

Advisors in Vietnam
Korean War

1949

1950

*Ridenour Report
Electronics*

Arnold Dies

AEDC Operations

Guided Missiles



Progress Report On The Air Defense Systems Engineering Committee: May 1950

Recommendations Of Air Force Guided Missiles Program: July 1950

Medical R&D In The USAF W. R. Lovelace: December 1950

Electronic & Control System Proposals For 1954 Intercept G. Valley: 1950

Report Of Explosives & Armament Panel R. Kent: March 1951

Fuels & Propulsion: April 1951

USAF Armament Activities: June 1951

Special Working Group Report L. Ridenour: August 1951

Report Of Aircraft Panel On Strategic Bombing System L. Root: September 1951

Report Of Fuels And Propulsion Panel C. R. Soderberg, W. M. Holaday, A. Kalitinsky, W. D. Rannie, P. B. Taylor: September 1951

Joint Turbo Prop Report L. E. Root, C. R. Soderberg, F. H. Clauser, W. M. Holaday, A. F. Donovan, A. Kalitinsky, P. E. Dawez, W. D. Rannie, R. R. Gilruth, P. B. Taylor, J. R. Markham: September 1951

USAF Armament Activities J. Hutcheson: October 1951

Explosive And Armament Report R. Kent: March 1952

Infrared Research And Development Program H. Stewart: May 1952

Report Of Electronics Countermeasures Committee E. Pollard: July 1952



UNIVAC
McCarthy Hearings

Color TV

Churchill

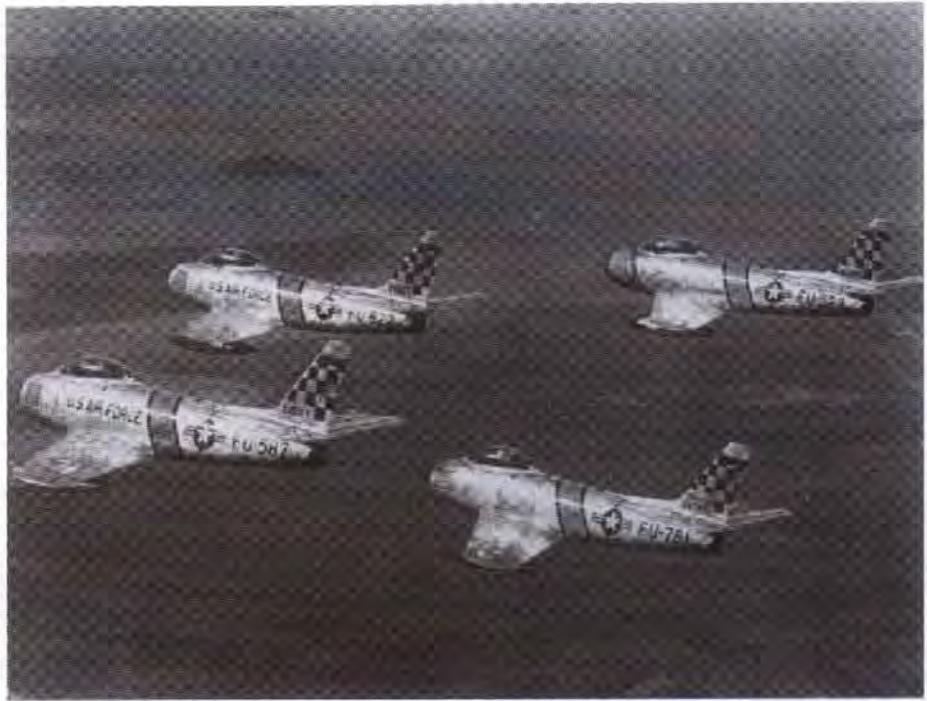
MASER
H-Bomb
Eisenhower

1951

1952

*Fuels & Propulsion
Strategic Bombing*

*Electronics Countermeasures
Infrared Research*



- Report Of The Aircraft Panel L. Root: September 1952*
Mission To European Research Lab P. Duwez: October 1952
Explosives & Armament R. Kent: November 1952
Project Atlas C.B. Millikan: December 1952
Report Of The Geophysical Research Panel J. Kaplan: December 1952
Report Of The Aeromedical Panel D. Hastings: December 1952
First Step In Using Artificial Satellites F. Whipple: September 1954
Nuclear Missile Propulsion M. Mills: October 1954
Preliminary Reports Of Panels On New Horizons: 1954
Report Of Aircraft Panel On Successor To B-52 Weapons System C. Millikan: January 1955
Report Of Aircraft Panel On Boundary Layer Control: February 1955
Report Of Nuclear Panel On Tactical Uses Of Atomic Weapons: July 1955
Nuclear Panel On Ding Dong Program E. Mechling: October 1955

Soviet H-Bomb
Korean Armistice

B-52
Dien Bien Phu McCarthy Censured

Polio Vaccine

1953

1954

1955

Project Atlas

Kelly
Artificial Satellites Nuclear Missile Propulsion

Reconnaissance From Satellite Vehicles C. F. Overhage, J. G. Baker, A. F. Donovan, E. H. Land, D. E. MacDonald, S. E. Miller, P. G. Strong: May 1956

Report On MB-1 Rocket Follow-On: July 1956

Ballistic Missile Defense Report: August 1956

Report Of Nuclear Panel On USAF Aircraft Nuclear Propulsion Program: October 1956

Report Of Explosives & Armament Panel On Lead Collision Fire Control System C. Draper: November 1956

Report Of The Nuclear Panel On Plutonium Contamination Hazards: November 1956

Report Of The Nuclear Panel On High Altitude Weapons Effects: November 1956

Report On Fuels & Propulsion M. Mills: November 1956

Advanced Manned Interceptor Fighter: February 1957



U-2 Suez Crisis

Hungarian Revolt
Sinai War

Desegregation

1956

1957

Tactical Atomic Weapons
Boundary Layers

Ballistic Missile Defense **Doolittle**
Reconnaissance Satellites *Aircraft Nuclear Propulsion*

Report On Human Factor Engineering P. Fitts: April 1957

Nuclear Panel Report On Weapons Kill In Air Defense E. Teller: May 1957

Report Of Nuclear Panel On Future Nuclear Weapons: May 1957

Future Production Of Fissile Material: September 1957

Report On Base Hardening: October 1957

Report Of Teller Ad Hoc Committee E. Teller, E. J. Barlow, J. Beerer, K. J. Bossart, G. H. Lement, E. B. Doll, W. R. Dornberger, K. Ehricke, C. Faulders, C. H. Forrest, D. T. Griggs, M. D. Hunter, J. Isenberger, T. G. Lanphier, Jr., F. O'Green, W. F. Parder, L. D. Ridenour, R. J. Sandstrom, M. Sherman, W. M. Sith, E. Spraitz, E. A. Valley, T. F. Walkowicz, R. H. Widmer, R. G. Wilson: October 1957

Use Of Substitute Warhead: December 1957

Report On WS 1117-P Progress: April 1958

Report On High Altitude Testing: June 1958

Improving Air Force Capabilities Under The Test Moratorium: September 1958

Report Of Guidance & Control Panel On Ballistic Missile Guidance E. Schemed: October 1958

Draft Report On Minuteman Warhead: October 1958

Nuclear Panel Report On Warheads For Missiles: November 1958

Air Defense Systems: January 1959

Nuclear Weapon Design Under A Test Moratorium: March 1959

Limited War: March 1959

Recommendations By Space Techechnology Panel: June 1959

Report On ANP: July 1959

Report Of Geophysics Panel On Advanced Airborne Weather: August 1959

Infrared Countermeasures B-70 G. Valley, K. M. Siegel, C. Townes, L. S. Sheingold, C. W. Miller, E. S. Rubin, S. Passman, R. H. Rose: September 1959

Report Of Nuclear Panel On Lethal Radius Of Nuclear Weapons/Ballistic Missile: October 1959

Radiation Facility L. R. Hafstad W. H. Radford, C. W. Sherwin, S. Brown, J. R. Ragazzini, C. V. Atta: October 1959

Sputnik
ICBMs

Explorer 1 NASA USS Nautilus Alaska
Jet Airlines Atlas Kitchen Debate

Mercury
Hawaii

1958

1959

Human Factors Woods Hole
Base Hardening

High Altitude Testing
Ballistic Missile Guidance

Limited War B-70
Space Techechnology

Report On Structural Fatigue C. Perkins, E. Barlow, R. L. Bisplinghoff, M. U. Clauser, A. J. Eggers, Jr., J. Aldridge, T. V. Jones, W. M. Kellogg, H. T. Luskin, B. Ruffner, H. Stein, H. Storms, G. S. Trimble, Jr., R. H. Widmer, E. Schued: October 1959

Evaluate Radio-Biology Of The USAF: November 1959

Nuclear Testing: December 1959

Report Of Reconnaissance Panel On Needs In Reconnaissance Area: December 1959

Report On U.S. Propulsion Program A. Donovan, M. V. Clauser, A. Ferri, M. P. Love, Jr., R. L. Pigford, P. W. Pratt, P. E. Schreiber, E. S. Taylor: December 1959

Report On Future Weapons: December 1959

Report Of Aerospace Vehicles Panel On Dynasoar: January 1960

Joint Meeting W/USAF Surgeon General Medical Research Council L. Carlson: March 1960

Dynasoar Phase A Review: April 1960

Report Of The Geophysics Panel On Arctic Research P. Smith, C. T. Elvey, L. Goldberg, W. W. Kellogg, G. Schilling, J. Reed, T. Malone, K. Siegel, W. Wrigley: June 1960

Guidance & Control Panel On Terminal Guidance (Memo): July 1960

Sensors For Space Surveillance S. Herwald, R. Muchmore, J. W. Schaefer, W. Siebert, E. G. Fubini, W. Graham, W. Huggins, P. Smith, F. Whipple, W. Wrigley: August 1960

Guidance & Control Panel On Minuteman Guidance System (Memo) E. Schemed, J. Healey, S. Herwald, R. Seamans, K. Siegel, H. Weiss, W. Wrigley, P. Smith, L. Sheingold: October 1960

Memo Of Aerospace Vehicles Panel On Dynasoar: December 1960

Energy Conversation For Space E. Plesset: December 1960

Summary Report Of Space Technology Panel H. Stever: December 1960 *

Nuclear Panel Report On Underground And Space Testing Of Nuclear Weapons: December 1960

Life Science Program L. Carlson, P. Harris, J. Marbarger, F. Princi, J. Tullis, C. Morgan, L. Carter: January 1961

ARDC Wind Tunnel Facility S. Bogdonoff: January 1961

Project Orion: March 1961

Castro

LASER
Birth Control Pill

U-2 Downed
Kennedy

1960

Structural Fatigue Putt
Nuclear Testing

Dynasoar

Space Sensors
Terminal Guidance

Kennedy Awards Medal to Scientist

By Carroll Kilpatrick
Staff Reporter

President Kennedy yesterday presented the first National Medal of Science to Theodore von Karman, an 81-year-old Hungarian-born American citizen who has made "incomparable contributions" to aeronautics.

At a ceremony in the White House rose garden, the President said he knew of "no one who more completely represents all the areas of work" described in the 1959 act of Congress authorizing award of the medal.

The President said he was happy to present the medal "to one of the pioneers who has helped to make this new and exciting world possible."

Thanking the President, von Karman quoted Gen. H. H. Arnold, World War II chief of the air corps, as telling him he wanted him in the Pentagon to prove how important a professor could be.

Von Karman has worked primarily on mathematical analyses of aerodynamics, hydrodynamics and strength of materials—the bases for design of fast aircraft.

Long List of Awards

He has published more than 100 books and articles, is a member of scientific academies of most Western countries and has won a long list of awards and honorary degrees from American and European universities.

Von Karman is chairman of the technical advisory board of Aerojet-General Corp. and chairman of the NATO advisory group for aeronautical research and development.

A native of Budapest, von Karman became an American citizen in 1936. He was director of the Guggenheim Aeronautical Laboratories of the California Institute of Technology from 1930 to 1949.

The citation accompanying the medal said von Karman "has made incomparable contributions not only to the fields of applied mechanics, aerodynamics and astronautics, and to education in general, but also to industrial, national, international and human affairs in their broadest sense."



United Press International

This was the scene at the White House yesterday as President Kennedy presented the National Medal of Science to Theodore von Karman. In center is Judge Victor Anfuso, a former member of Congress.

Bioinstrumentation J. Marbarger: March 1961

Human Factors J. Orlansky: March 1961

Radiation Weapon Program W. Radford, G. Dineen, D. Huffman, B. Miller, L. Sheingold, W. Shockley, K. Siegel, W. Tinus, G. Valley: May 1961

Air Force Utilization Of Scientific Resources H. Stever: May 1961

Space Surveillance S. Herwald, W. Graham, W. Huggins, R. Muchmore, W. Schaefer, W. M. Siebert, P. Smith, F. Whipple, W. Wrigley, K. Siegel, R. Seamans, L. Sheingold: June 1961

USSR/NASA Bioastro Program L. Carlson, R. Buchan, J. Marbarger, G. McDonnell, G. Dineen, R. Porter: June 1961

Penetration Aids For Ballistic Missiles: June 1961

New Small Weapons Program: June 1961

Space Flight
Bay of Pigs Peace Corps Berlin Wall

1961

Life Science Project Orion

Space Surveillance Disarmament
USSR/NASA Bioastro Program Aerospaceplane

**DR. VON KARMAN,
PHYSICIST, 81, DIES**

Jet-Propulsion Pioneer Had Led Cal Tech Laboratory —Founded NATO Arm

FIRST TO GET U.S. MEDAL

Leadership in Aeronautics' Lauded—Rocket Expert a Founder of Coast Plant



Associated Press
Dr. Theodore von Kármán

Special to The New York Times
BONNY, May 7—Dr. Theodore von Kármán, internationally recognized aviation expert who once headed the California Laboratory for Jet Propulsion, died of a heart attack last night in Baden. He was 81 years old.
Dr. von Kármán, who was born in Hungary, pointed the way to the era of supersonic flight. He was founder and chairman of the Advisory Council for Air Research and Development of the North Atlantic Treaty Organization.
He emigrated to the United States in 1930.

President Pays Tribute
WASHINGTON, May 7 (UPI)—President Kennedy expressed deep regret today over the death of Dr. Theodore von Kármán.
"I know his friends and associates will mourn his loss and join me in paying tribute to a great scientist and humanitarian," the President said.

Engineer of Space Effort
Dr. von Kármán was the driving force behind two decades of American efforts to advance the frontiers of aeronautics and military.

The shuncky, bushy-haired professor from Budapest, who became a United States citizen in 1950, has been called "the father of the supersonic age." It was he who made space science respectable, transforming an esoteric study into a reputable discipline.

His basic research spawned the concepts that led to space travel. His work led to the creation of industries.

A major contributor to United States defense planning, Dr. von Kármán was known as "the patron saint of the Air Force." He headed three dozen top-drawer scientists, brought together in 1944, whose reports served for many years as the master plan for Air Force development.

With uncanny accuracy, Dr. von Kármán, and his associates predicted the missile age. Their first important postwar contribution, a book called "Where We Stand" and 30 follow-up guidance manuals like the Reggim and the StarK, huge transport planes such as the Lockheed C-130 and the Douglas C-124 and atomic warheads compact enough to be used in rockets.

Continued on page 2

Disarmament Implications C. Overhage, L. Carter, F. Ikle, A. Latter, R. Leghorn, J. McCormack, J. Foster, T. Schelling, H. Scoville, C. Townes, T. F. Walkowicz: June 1961

Advanced Ballistic Missile Concepts S. Herwald, J. Healy, R. Seamans, K. Siegel, H. Weiss, W. Wrigley, B. Miller, P. Smith: July 1961

LISSR Atomic Weapons: July 1961

Manned Space Program C. Perkins, S. Bogdonoff, A. Flax, L. Sheingold, N. Hoff: July 1961

Military Applications Of Ionosphere Modernization R. Holzer, A. J. Dressler, L. Goldberg, W. W. Kellogg, A. H. Shapley, K. Siegel, O. Villard, A. Wheelon, A. Zmuda: July 1961

Nuclear Panel On Weapons Fabrication: August 1961

Air Force Structures Applied Research W. McMillan, M. Agbabian, H. Brode, T. Cook, R. Fadum, E. Martinelli, C. Violet, A. Ward, W. Wells: August 1961

Aerospaceplane A. Flax H. Emmons, H. Stewart, A. Eggers, R. Pigford, A. Donovan, C. Perkins, S. Bogdonoff: August 1961

Sacramento Peak Solar Observation P. Smith, C. Elvey, L. Goldberg, R. Holzer, J. Reed, W. W. Kellogg, K. Siegel, W. Wrigley: August 1961

Mathematical Biological Models R. Adey: March 1962

Report Of The Open Ear Panel: March 1962

Electronic Warfare Program W. Radford, G. Dineen, D. Huffman, B. Miller, W. Tinus, W. Rambo, K. Siegel, G. Valley, Jr.: April 1962

In-House Labs L. Sheingold: April 1962

Arms Control Problems L. Carter, J. Foster, A. Latter, J. McCormack, C. Overhage, T. Schelling, H. Scoville, Jr.: April 1962

Aerospaceplane C. Perkins: July 1962

XB-70 Lift To Drag Ratio A. Flax, R. Widmer, J. Wimpres: September 1962

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Air Force Space Program H. Stever, R. W. Buchheim, L. Carter, A. Flax, I. Getting, D. Griggs, S. W. Herward, G. McDonnell, C. McMillikan, C. Perkins, T. Taylor: September 1962

Titan

Minuteman

School Prayer

Cuban Missile Crisis

1962

Electronic Warfare
Arms Control

Guyford
Air Force Space Program

Report Of The Nuclear Panel On Project Orion R. Buchan: October 1962

Nuclear Technology E. Plesset, C. Stavv, A. Flax, C. Clifford, C. Leondes, P. Pratt, R. Porter, R. Thorn, G. McDonnell, P. Duwez: November 1962

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Mechanical Translation Of Languages G. Dineen: December 1962

Report Of The Information Processing Panel G. Dineen: March 1963

Space Radiation Effects W. Radford: July 1963

Titan III Guidance S. Herwald: July 1963

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Review Of Arctic Research P. Smith, D. Fultz, J. Reed, O. Villard, W. Wrigley, D. Norton, G. McDonnell, G. Dineen, J. Edson, D. Rice, C. Elvey: August 1963

Report Of Nuclear Panel On Overland Airborne Radar W. Radford, G. King, B. Miller, L. Sheingold, W. Tinus, G. Valley: September 1963

Memo/Report Of Aerospace Vehicles Panel And Prop Panel On Aerospaceplane C. Perkins, H. Ashley, S. Bogdonoff, W. Gray, R. Horner, R. Miller, W. Swanson: October 1963

Report Of Guidance & Control Panel On Target Signatures S. Herwald: November 1963

Report Of The Nuclear Panel On Air Force Nuclear Weapons Effects Under Treaty: December 1963

Memo Of Geophysics Panel On Air Force Solar Observation W. Kellogg: March 1964

Memo Report On Digital Computer Education G. Dineen: April 1964

Report On Reconnaissance/Intel In Counterinsurgency B. Billings, L. Sheingold: April 1964

Report Of The Nuclear Panel On Orion/Helios: April 1964

Report Of Guidance & Control Panel On Inertial Guidance Development And Testing S. Herwald: May 1964

F-4 Civil Rights Act

JFK Shot
Johnson

Gemini

Gulf of Tonkin Ranger 7

1963

1964

Arms Control

von Kármán dies
Project Forecast

Digital Computer



United Press International

Teller Favors Testing

Father of the H-bomb, Edward Teller, told about 100 Congressmen at a breakfast yesterday that he believes the Soviet Union is ahead of the United States in developing nuclear explosives and may be the first to develop a defense against missiles. He spoke in favor of continued testing and sharing nuclear know-how with our allies.

Dr. Teller Believes Reds Know All U. S. Secrets

By the Associated Press
 Dr. Edward Teller said today "I am pretty well convinced the Russians have all our secrets and I am even afraid they have the secrets we are going to discover in the next two years." The world-famous physicist, often called the father of the hydrogen bomb, gave his opinion as a reason for less secrecy in Government research. "Our industry and our citizens don't have those secrets," he told a special House committee studying the Government's \$15-billion-a-year research effort.

Exaggeration is Seen
 Dr. Teller said that in general he thinks it is an exaggeration to say private industry and the economy are suffering because the Pentagon is keeping important scientific discoveries under secrecy wraps.

But he said the practice has been to keep a secret label on a development unless it can be proven beyond a doubt that making it public would not harm the national interest. "I think the burden of proof should be on the other side," he said.

Dr. Teller divided the research and development effort into three broad fields, as he has done in previous appearances before congressional committees.

Three Fields Listed
 The first field is pure science, he said, in which there is no definite application in mind. The United States leads the world in this field, he said.

The other extreme, or second field, is development when "we know what we want to do and even have a reasonably clear picture of how to do it."

An intermediate area, he said, is applied science, where "we have a hunch something practically can be done... you have your eye on a reasonably clearly defined goal, but don't know if it is within our grasp and particularly don't know if we can afford it or if it is wise."

"We are reasonably good at spending billions for development," Dr. Teller said. "We often fall down in spending millions for applied research."

Shocking Experience
 "I say we are poor in this area," Dr. Teller said, and cited what he called a "shocking experience" last week out.

He said he interviewed 26 promising engineers at the Massachusetts Institute of Technology for possible fellowships and 22 of them said they did not want to go into industry but wanted to continue academic careers in pure research.

He said Americans have somehow "been brought up to turn up their noses at anything practical."

Dr. Teller said that at the Livermore Laboratory in California, which he heads, a small start has been made to remedy this by the establishment of a department of applied science.

"What the Nation needs most is a decent supply of applied scientists," Dr. Teller said.

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Warren Commission

Medicare Comsats Watts Riot
Troops in Vietnam

SR-71 Surveyor 1
Black Panthers Agent Orange

1965

1966

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MIRVs

Airbreathing Propulsion

Project Blue Book

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Fiber Optics

GATT

Apollo Fire

MIRVs

Six Day War

TET Offensive

Khe Sahn

My Lai

1967

1968

Avionics

Information Processing

V/STOL Composites

SCIENTISTS SEEK GAS ATTACK HALT

By ALBERT SEHLSTEDT, JR.
Washington, Feb. 14 — More than 5,000 scientists and physicians today asked President Johnson to end the use of what they described as "anti-personnel and anti-crop chemical weapons in Vietnam."

They also asked the President to institute a White House study of Government policy on chemical and biological weapons, and declare the United States intention not to initiate the use of such weapons.

Four of the scientists took the petition to Dr. Donald F. Hornig, Mr. Johnson's special assistant for science and technology.

Government Sympathetic

The four were Dr. Paul Doty, professor of chemistry at Harvard; Dr. John T. Edsall, professor of biochemistry at Harvard; Dr. Irwin C. Gunsalus, professor of biochemistry at the University of Illinois, and Dr. Matthew Meselson, professor of biology at Harvard.

The four talked with Dr. Hornig and other Government officials for about 90 minutes in the Executive Offices Building, next door to the White House.

Also at the meeting were Adrian S. Fisher, deputy director of the Arms Control and Disarmament Agency; Dr. Herbert Scoville, Jr., assistant director of the agency, and Spurgeon Kenney, a member of Dr. Hornig's staff.

Dr. Edsall described the attitude of the four Government men as "distinctly sympathetic," though he said they had not committed themselves.

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Advanced Logistic System I. Nehama: August 1970

Air Force Response To Section 203 Of The FY 70 Military Procurement Authorization Act R. Loewy: September 1970

Nixon

Apollo 11
Woodstock

Integrated Circuits
Kent State

M*A*S*H

1969

1970

Loran

Ionospheric Research Perkins

C-5A

Logistics



CHARLES S. DRAPER
... accepts Florida post

Scientist Moves

Scientist Charles S. Draper of the Massachusetts Institute of Technology, who has been the target of student protests because of his defense-related work, was appointed head of a new research center named for him in Florida.

President Jerome P. Keuper of the Florida Institute of Technology at Melbourne said Draper would continue his defense research unhampered by student protests. He said the new Charles S. Draper Research Center will have "wholehearted" support of the faculty and student body on the Florida campus.

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USAF Scientific Advisory Board meets at Eglin

The USAF Scientific Advisory Board is holding its Spring General Meeting at Eglin Air Force Base, Florida, on 4 and 5 May 1972. The Armament Development and Test Center is hosting the meeting which has as its theme, "Tactical Penetration Aids."

The Scientific Advisory Board is comprised of some 70 eminent scientists from universities and industry who serve as advisers to the Secretary of the Air Force and the Chief of Staff. They provide assistance on such diverse Air Force problems as aircraft, electronics, geophysics, guided missiles, personnel, simulation, training,

information processing, medicine and nuclear weapons.

Professor Courtland D. Perkins, Chairman of the Department of Aerospace and Mechanical Sciences, Princeton University, is the Board's Chairman. Lieutenant General Otto J. Glasser, Deputy Chief of Staff, Research and Development, Headquarters United States Air Force, serves as the Military Director.

This is the 50th general meeting of the Scientific Advisory Board since it was established in 1944 by General H. H. Arnold and Dr. Theodore von Karman.



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Attica Riot

Nixon to China

Watergate

SALT I

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Close Air Support Gun

Laser Technology

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Loewy *Electronic Warfare
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Ford

Apollo-Soyuz
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Concorde

1975

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Electro-Optics

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Carter Draft Evaders Pardoned

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Alaska Pipeline

F-16

Particle Beams

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M-X

Basic Research

Imaging Infrared

Simulation

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Three Mile Island

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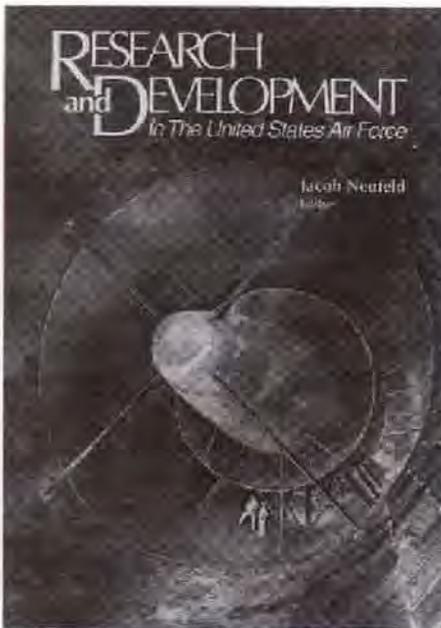
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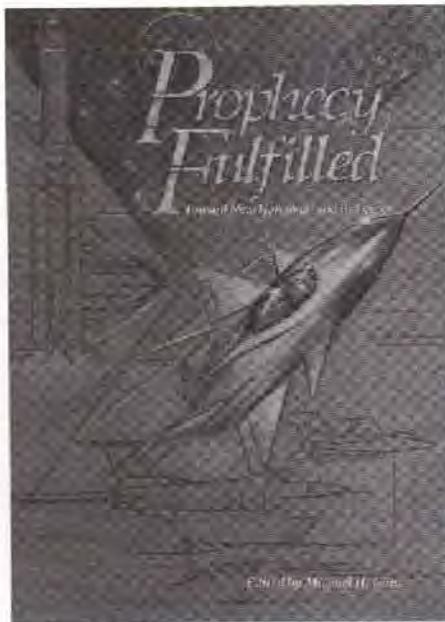
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Somalia

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Dr. Theodore von Kármán
1946-1955



Dr. Mervin J. Kelly
1955-1956



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1956-1959



Lt. General Donald L. Putt
1959-1962



Dr. H. Guyford Stever
1962-1969



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1969-1973



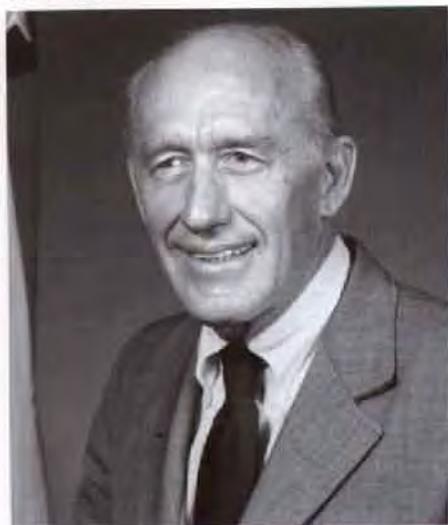
Dr. Robert G. Loewy
1973-1977



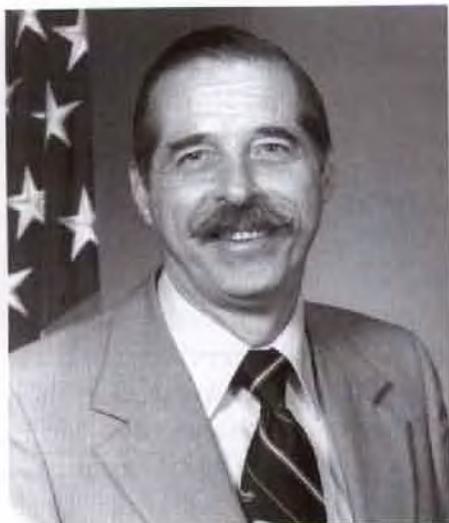
Dr. Gerald P. Dinneen
1977-1978



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1978-1979



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1982-1986



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1986-1989



Dr. Edwin B. Stear
1989-1990



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1990-1993



Dr. Gene H. McCall
1993-Present

Senior Scientists of the
**United States Air Force
Scientific Advisory Board**

Air Force Regulation 20-30 The US Air Force Scientific Advisory Board: "Senior Scientists. On the recommendation of the Chief of Staff and with the approval of the Secretary of the Air Force, selected members may be elevated to the position of Senior Scientist. Members elevated to these positions must demonstrate extensive scientific expertise, breadth of knowledge, and managerial experience in R&D positions of significant responsibility. The total number of SAB Senior Scientists will not exceed five."

Mr. Robert R. Everett: After earning engineering degrees from Duke and MIT, Mr. Everett began work on Project Whirlwind, the development of electronic digital computers, and was awarded several patents for related technology. He continued that work at the newly formed MIT Lincoln Laboratory for several years before moving to the MITRE Corporation in 1958. Mr. Everett rose to President and CEO of MITRE and is an honorary member of its Board of Trustees. Among many honors, he is a member of the National Academy of Engineering and earned the DoD Medal for Distinguished Public Service. He was recently awarded the George W. Kriske Memorial Award for his contributions to air traffic control. President Bush awarded Mr. Everett the National Medal of Technology and he holds honorary Doctorates from Duke and Northeastern.



Dr. Alexander H. Flax: Dr. Flax has served this nation in many significant positions including Chief Scientist of the Air Force, Assistant Secretary of the Air Force (R&D) and the Director, National Reconnaissance Office. In addition to significant engineering posts in industry, he has also had long associations with the Cornell Aeronautical Laboratory, the National Academy of Engineering, the Institute for Defense Analyses and the NATO Advisory Group for Aerospace Research and Development. Dr. Flax was educated at New York University and the University of Buffalo, is an Honorary Fellow of the American Institute of Aeronautics and Astronautics and has served on advisory bodies at Princeton and Stanford Universities. Among many honors, he was named an Elder Statesman of Aviation by the National Aeronautic Association.



Dr. Ivan A. Getting: A graduate of MIT and of Oxford as a Rhodes scholar, Dr. Getting's critical contributions to radar development during WW II was recognized by President Truman with the Medal for Merit. His post war service began with the first Scientific Advisory Board, a professorship at MIT and a year on the USAF staff during the Korean War before nine years as vice president at Raytheon. Dr. Getting's dedication to the Air Force was again recognized with the Exceptional Service Award and by his selection as the first president of The Aerospace Corporation, both in 1960. He served in that position until 1978 during which time he led the development and fielding of the Global Positioning System. Dr. Getting is currently President-Emeritus of the Aerospace Corporation.

Dr. Courtland D. Perkins: Dr. Perkins spent WW II serving at the Army Air Corps' Wright Field and has been a member of the Scientific Advisory Board since it was formed. Educated at Swathmore and MIT, he has been the Chief Scientist of the Air Force and the Assistant Secretary of the Air Force (R&D). His civilian contributions to the nation include thirty years as the Chairman, Department of Aerospace and Mechanical Sciences at Princeton and eight years as the President of the National Academy of Engineering. An author, Dr. Perkins is also a member of the American Institute of Aeronautics and Astronautics, the Royal Aeronautical Society and the American Academy of Arts and Sciences. He has earned the USAF Exceptional Civilian Service Medal, twice, and received honorary doctorates from Lehigh and the Rensselaer Polytechnic Institute.



Dr. Edward Teller: Dr. Teller was born in Hungary and educated in Germany. He left Nazi Germany to eventually become an American citizen and Professor of Physics at George Washington University. His advocacy of a strong American defense and developmental work on nuclear explosives began with the Manhattan Project and continues today. President Kennedy presented Dr. Teller with the Enrico Fermi Medal and President Reagan presented him the Presidential Citizens Medal as two of 36 such awards he has earned. He holds 22 honorary doctorates and authored 14 books. Having worked to alleviate the energy shortage and to develop technologies required for strategic defense, Dr. Teller is currently Director Emeritus at Lawrence Livermore Laboratory, Professor Emeritus at the University of California and a Senior Research Fellow at the Hoover Institution.

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of our people - in
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armed services, and
throughout the
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free play, incentive,
and every
encouragement.*

"Hap" Arnold