Dr. F. Robert "Bob" Naka
Inducted 2009

Dr. F. Robert "Bob" Naka was born on 18 July 1923 in San Francisco, California, to Japanese immigrant parents. His undergraduate studies at the University of California, Los Angeles (UCLA) were interrupted in 1942 when he and his family were imprisoned at Manzanar Relocation Center. Through the efforts of the National Japanese American Student Relocation Council, supported by the American Friends Service Committee (Quakers), he gained release after nine months to begin attending college in February 1943. After graduating from the University of Missouri-Columbia in 1945 with a bachelor's degree in electrical engineering, he completed a master's degree in the same field at the University of Minnesota in 1947 and earned a doctorate in electron optics at Harvard University in 1951.

On 1 June 1951, Dr. Naka accepted a position with the Project Lincoln (later Lincoln Laboratory) Presentation Group at Massachusetts Institute of Technology (MIT), where engineers and psychologists were investigating the cybernetic relationship of humans and machines. In attempting to apply aural detection of radar signals to Distant Early Warning (DEW) Line radars, he led a very small group of engineers that invented the first electronic circuit to detect analog radar signals. The circuit replaced the necessity of humans detecting aircraft visually on radar scopes. He also invented the concept of "cumulative probability of detection," which he applied to the beam scan sequence of the large, fixed detection antenna for the Ballistic Missile Early Warning System (BMEWS) to warn of a possible attack from Soviet intercontinental ballistic missiles. He was instrumental in designing the Millstone Hill radar that tracked Sputnik, the world's first artificial satellite, in October 1957. Engineers employed the Millstone UHF transmitter design for BMEWS tracking radars at Thule AB in Greenland, Clear AS in Alaska, and RAF Fylingdales in the United Kingdom.

Dr. Naka's expertise in radar also led to his selection in 1956 to work on design of the U-2 reconnaissance aircraft. He contributed to that effort by determining the radar cross-section of the U-2, figured out how to reduce it, and applied the "solution" to the first aircraft so equipped. As one of the leading pioneers of stealth technology, Dr. Naka

later was summoned by Project Oxcart, which spawned the SR-71 Blackbird, to produce a material that could make an airplane "disappear."

Dr. Naka accepted an invitation from The MITRE Corporation in 1959 to form a research laboratory. Eventually, he ran nearly a quarter of the company, called Applied Science Laboratories, which included departments for radar, communications, data processing, and so forth. In January 1968, the commanders of Air Force Systems Command and Air Defense Command appointed Dr. Naka as director of a highly classified study to improve the surveillance of objects in space. In one of the most complete studies of its type ever done, Dr. Naka's team compared the capabilities of projected space-based assets with aircraft- and ground-based alternatives and concluded that space-based systems were the most cost-effective for early warning and space surveillance. The group's final report recommended a system that subsequently went through various iterations to become known eventually as the Space-Based Infrared System (SBIRS).

When MITRE president Dr. John McLucas became Under Secretary of the Air Force and director of the National Reconnaissance Office (NRO) in 1969, he brought Dr. Naka on as his deputy with the public title of Deputy Under Secretary of the Air Force for Space Systems. During his three years serving in this capacity, Dr. Naka oversaw the launch of several new "national security" space systems and chaired many technical committees. One of the latter, the so-called "Naka Panel;' made a number of recommendations on foreign instrumentation signals for a new US satellite system. He further demonstrated high-level leadership and managerial talent by working as Raytheon Corporation's director of Detection and Instrumentation Systems for three years, before serving as chief scientist of the Air Force during 1975-1978. Thereafter, he joined Science Applications, Inc., as a corporate vice president before moving in 1982 to a position as vice president for Engineering and Planning in GTE Government Systems Corporation. He retired from the latter in 1988 to head CERA, Inc., a small business specializing in electromagnetic technology.

Over more than a half-century, Dr. Naka participated on numerous industrial, scientific, and government advisory boards, including the NASA Space Program Advisory Council and the US Air Force Scientific Advisory Board (AFSAB). In the early 199os, he chaired a summer study on "Space-Based Radar" that thoroughly examined use of satellite radar to track aircraft, including stealth aircraft. He also chaired an AFSAB ad hoc committee in 1996-1997 that drafted a significant report on "Space Surveillance, Debris, and Asteroids and Comets." From approximately that time onward, he has served on the Global Positioning System (GPS) Independent Review Team (IRT), whose charter called for in-depth study of GPS-related issues and recommendation of solutions to appropriate military officials. During the first decade of the twenty-first century, Dr. Naka served as one of the original members of the Independent Senior Advisory Group to the AFSPC commander.