

A Brief History of the AIAA

“This article is taken from the book *‘Rocketeers and Gentlemen Engineers: A History of the American Institute of Aeronautics and Astronautics...and What Came Before’* written by Tom Crouch, shown in the end of this article (Copies of this book are available for purchase on the AIAA web site at <http://www.aiaa.org>). This year the American Institute of Aeronautics and Astronautics (AIAA) celebrates 75 years of supporting the aerospace industry. AIAA is formed of two societies, the American Rocket Society, which started in 1930, and the Institute of the Aeronautical Sciences, which started in 1932. We use the year in between as our celebration year to make it easy. These two societies were very different in the beginning, but the eventually merged together to form AIAA. Here is an excerpt of the story.”

.... Emily Springer, AIAA

Introduction

At midnight on January 31, 1963, the American Institute of Aeronautics and Astronautics (AIAA) officially began operating. The results of years of careful planning, AIAA



was a new society formed by the merger of two venerable predecessor societies, the American Rocket Society (ARS), which had begun in 1930 as the American Interplanetary Society, and the Institute of the Aerospace Sciences, established in 1932 as the Institute of the Aeronautical Sciences (IAS). Although many of the roughly 36,500 total members in both societies had argued against the merger, the vote was strongly in favor of combining. The hard part, that of sorting out over 60 years' combined activities of publications, awards, local sections, and staff, was still ahead.

The IAS – Early Years (1932-1945)

The Institute of the Aeronautical Sciences (IAS) was started by two MIT graduates who wanted to pursue their interest in aeronautics. Jerome Hunsaker (1886-1984) received the first Ph.D. in aeronautical engineering from an American university and headed the Aircraft Division of the Bureau of Construction and Repair. Lester Gardner (1876-1956) produced the journal *Aviation and Aeronautical Engineering* in 1916, which was later sold to McGraw Hill and became *Aviation Week and Space Technology*. Both men did tours of Europe and returned to the U.S. determined to promote aeronautical engineering; they were particularly impressed by the work of the Royal Aeronautical Society and wanted to duplicate it. They decided to establish a similar American organization.



The first official meeting of the IAS was at the Yale Club in New York on October 17, 1932 with Jerome Hunsaker as President. From the start there were several different

classes of membership depending on the degree of technical experience of the members, from Junior Members to Honorary Fellows (the first Honorary Fellow of the IAS was Orville Wright). The elite status of the society was very important, and no women were allowed until 1939.

The first technical publication of the IAS was the proceedings of its Founders' Meeting in 1933, titled the *Journal of the Aeronautical Sciences*, and became a monthly publication in 1935. From the beginning, the journal included a section called "News from the Institute," which included meeting notices, news from headquarters, obituaries, and publications of interest. By 1944, however, this information was published in a separate publication, the *Aeronautical Engineering Review*.

In 1933, the IAS took up residence in Rockefeller Center in New York, where they remained for the next 12 years. During this time, the IAS hired its first full-time staff members. The IAS also created their official seal, which remained the logo of the Institute until it merged with the ARS in 1963.

Although the IAS was headquartered in New York, there was a concern that much of the development of aviation was shifting to the West Coast, far from headquarters. This led to the creation of the Pacific Coast Section of the IAS in December 1934. It included Donald Douglas, John Northrop, Gerard Vultee, Clarence "Kelly" Johnson, and many other notable names in aviation.

In addition to classes of membership, the IAS from the start also established awards, including endowed awards, and those named for aeronautical pioneers. There were over 10,000 members located in nine sections around the U.S., and 862 student members were enrolled in 34 active Student Branches. The IAS also established standing committees to administer the Institute, as well as nine technical committees. They began holding Specialist Meetings to discuss specific technical challenges and exchange information.

It was very important to Lester Gardner to archive and exchange information, and by 1935 the library received 44 journals from around the world each month. In 1941 the IAS established the Pacific Aeronautical Library in Los Angeles.

With the growth of the library, however, came another challenge – that of knowing what was available. Gardner proposed a collection of all known information on aeronautics at the time, and the complete Aeronautical Index was issued in 1938. It consisted of 28 volumes made up of 50 separate bibliographies covering the entire range of aviation topics. The project produced some two million entries, employed more than 100 people, and cost \$150,000.

In addition to books, the IAS began to get donations of other items, including prints, aeronautical ephemera, badges, buttons, models, trophies, paintings, and other

aviation-related items. The Aeronautical Archive of the IAS Collection, as it was known, grew to include over 23,000 items, including a copy or photocopy of every book or pamphlet on aeronautics published before 1900. Today, the collection resides at the Library of Congress and the Smithsonian in Washington, DC.

The IAS – Later Years (1945 to 1963)

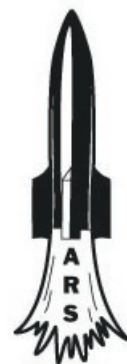
By this time, Lester Gardner was 70 years old, and had administered the Institute for 14 years. His successor, Samuel Paul Johnston, a former World War I Army aviator and engineer, became the new Executive Director in April, 1946. Over the next few years, the IAS built two buildings on the West Coast, in San Diego and Los Angeles. The Western Office and the Pacific Coast Library were there, and they also rented the space to the NACA, California Western University and other companies.

Under Paul Johnston, the IAS continued to gather technical information, but began to face the challenge of how to keep track of the ever-growing volume of literature. An index of the latest technical articles in the field, covering 33 periodicals, had been published in the *Aeronautical Engineering Review* since 1936, but Johnston thought there might be a better way to organize the information. A consultant suggested that the IAS take the lead in the business of indexing and abstracting, and the IAS received a contract from the Army Air Force to develop a Standard Aeronautical Index. The contract produced a thesaurus of terms and list of categories that would be used by all U.S. aeronautical abstractors. In 1954, the IAS created International Aerospace Abstracts, funded by NASA.

By 1958, the IAS began to see a drop in membership. Aeronautics, which had been a leading technology, now seemed archaic. Between 1954 and 1964 there was an immense shift in the emphasis from aviation to space, and the term “aerospace” started to be used more and more. To keep up with this shift, the IAS changed from the Institute of the Aeronautical Sciences to the Institute of the Aerospace Sciences, and the *Journal of the Aeronautical Sciences* became *the Journal of the Aero/Space Sciences*.

The ARS – Early Years (1930-1944)

In sharp contrast to the IAS, the American Rocket Society (ARS) started in a very different way. It began in Nino and Nella's, an Italian restaurant in the West Chelsea section of New York City. There, the Pendrays, Gawain Edward (1901-1987) and his wife, Leatrice (Lee) Gregory, met with their friends to talk enthusiastically about the possibilities of space travel. The Pendrays regularly contributed to *Science Wonder Stories*, a science fiction magazine. Ed and Lee often invited David Lasser, the editor of *Science Wonder Stories*, and other contributors, to story conferences at Nino and Nella's. From there they would adjourn upstairs to the Pendray's



apartment to continue their discussions on the prospect of space flight. At some point one evening, David Lasser suggested that they organize, and the American Interplanetary Society was born. On April 4, 1930, eleven men and one woman signed their names to a sheet of typing paper, making them the official founding members, with David Lasser as the first president. They quickly signed up other members, and by the end of 1931, membership numbered over 100. The society had already begun to publish, starting with a four-page mimeographed newsletter offering a mix of news and information in June 1930.

Pendray replaced Lasser as president in 1932, and the *AIS Bulletin* changed from a mere mimeographed version to the more formally printed *Astronautics*. The AIS itself was also changing. Ed and Lee Pendray took a trip to Europe, where they visited with rocket enthusiasts there. They were particularly excited to meet members of the German Rocket Society, which at the time was starting to build and test liquid propellant rockets. Ed Pendray returned to the U.S. determined to do the same, and the AIS began redefining its central purpose. From a society that existed to promote the wonders of space travel, it had become a society seriously building and testing small rockets.

AIS #1, as their first rocket was called, was to be launched on November 12, 1931. Unfortunately, the rocket slipped while being mounted, fell to the ground and was twisted out of alignment, ending its short career.

AIS#2 was built of salvaged parts from #1, along with bailing wire, razor blades, and other cast-offs. It had balsa wood fins and valves scavenged from gas light fixtures. The group received permission to launch the rocket in Great Kills Park, on Staten Island, and on 14 May 1933, they held the first public launch of a rocket. The rocket roared 250 feet into the air, where the oxygen tank burst and fell into lower New York Bay.

Due to these continuing experiments, the society decided to rename itself the American Rocket Society (ARS) in 1934. Most of the original science fiction crowd had left, to be replaced by scientists and engineers.

The ARS – Later Years (1944 – 1963)

A realization of the need for professional information led to a redefinition of the ARS into a technical society to meet the professional needs of a growing number of scientists and engineers. The first step was to establish an office, and hire staff. The first permanent employees was Agnes “Billie” Slade, a former secretary of Ed Pendray’s whom he convinced to man the ARS office for two days a week. At this point there were exactly 237 dues-paying members. In 1947 the society passed new by-laws that included official grades of membership, added four regional sections, established subcommittees for technical specialties (reaction motor development, fuels and combustion; instrumentations and communications; and aerodynamics and space problems), and

named three national awards. *Astronautics* had become *The Journal of the American Rocket Society*.

In 1953, the ARS hired James Harford as its first Executive Director, who oversaw, and was a key element of, years of spectacular growth for the Society. Within two years, he had increased the Corporate members from 10 to 61, and the membership to over 4,000 – a number that would reach 21,000 by the end of the 1950s. The five original sections grew to 26 at this time, and the ARS held or participated in eight major meetings in 1955 alone. Harford remained as Executive Director of the ARS and later AIAA until 1988.

The Merger - 1963

By the late 1950s, both the ARS and IAS covered similar topics and members. In considering various options, although the first reaction of most people was negative, this option made the most sense, and after years of figuring out programs and procedures, the two organizations officially consolidated in 1963. Paul Johnston was chosen as the Executive Director of the new American Institute of Aeronautics and Astronautics, with Jim Harford as deputy executive director; Johnston had agreed to retire 18 months after the launch of the AIAA and Harford then took over. The AIAA now had 47 technical committees (which has since grown to 66) and 66 local sections (now 64, including 2 in Australia).



At first, AIAA had only one broad technical publication, the *AIAA Journal*, followed by two specialized journals, *the Journal of Aircraft* and the *Journal of Spacecraft and Rockets*. Others soon followed, including a *Journal of Hydronautics* and a *Journal of Energy*. (Today there are seven AIAA journals, including one on-line only, the *Journal of Aerospace Computing, Information and Communication*.) The magazine title was changed to *Astronautics and Aeronautics* in 1964, and later to *Aerospace America* in 1984. The *AIAA Student Journal* was launched in 1963. The AIAA continued the ARS' *Progress in Astronautics* Book Series, expanding it to *Progress in Astronautics and Aeronautics*, and added the Education Series to publish textbooks.

Both societies had active awards programs that were easy to combine, and today AIAA gives over 80 awards in dozens of technical areas. As for location, it was decided during the consolidation negotiations to sell the IAS building and move to new quarters in the Sperry Rand Building at 51st Street and the Avenue of the Americas. The two California office buildings were later sold.

AIAA – 1988 to the Present

By 1965, AIAA had 37,931 members, and 209 staff in offices in New York, Los Angeles and London. It had active conference, publication, and honors and awards programs,

and had begun to get more involved in public policy issues during the 1970s, becoming a nationally respected voice in the aerospace community. This activity was part of the decision to move from New York to Washington, D.C., in 1988. Only 25 staff members chose to move to Washington, and Jim Harford also retired at this time after 35 years with the ARS and AIAA. The new Executive Director, Cort Durocher, started on 1 October 1988.

The AIAA was now a mature professional society. Cort Durocher brought AIAA into the computer age with the purchase of 100 desktop computers for all staff, which could be networked, and under his management the Institute weathered years of fiscal ups and downs. AIAA conferences branched out from just specialist meetings to include governmental support, from NASA to the Air Force and others. The most notable achievement of AIAA during this time, however, was the creation of the AIAA Foundation in 1996 to administer AIAA-funded awards and scholarships. Today, the Foundation awards over \$150,000 in scholarships, grants and honoraria per year.

To celebrate 100 years of powered flight, the AIAA Board allocated \$3.7 million for the Evolution of Flight Campaign, the largest investment in a single program in the history of the Institute. Comprising over three years of activities, the program culminated in a week-long celebration coinciding with other centennial events in Dayton, Ohio in July of 2003.

Cort Durocher retired from AIAA in 2004 and the current Executive Director, Robert Dickman, started in February 2005, inheriting an organization that has never offered a broader range of programs supporting the members and the industry. AIAA has over 30,000 members in 82 countries, and over 6500 student members in 164 student branches. For 75 years, AIAA has taken great pride in its achievements and those of its members, and looks forward to continuing its support of the aerospace community into the far future.

Introduction of author of the reference book



Dr. Tom Crouch is the Senior Curator of the Division of Aeronautics at the National Air & Space Museum in Washington, D.C. Since 1974, he has served both the National Air & Space Museum and the National Museum of American History in a variety of curatorial and administrative posts. He holds a Ph. D. in History from Ohio State University. Dr. Crouch is the author or editor of over a dozen books and many articles including *The Bishop's Boys: A life of Orville and Wilbur Wright*; *A Dream of Wings: Americans and the Airplane, 1875-1905*, and *Wings: A History of Aviation from Kites to the Space Age*. He has won numerous awards including the AIAA Gardner-Lasser Book Award.