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## Chapter 14

# The American Rocket Society 1953-1963: A Memoir<sup>1</sup>

James J. Harford<sup>2</sup>

Monday, 3 October 1988, was a doubly auspicious date for me. It was the 35th anniversary of the day that I took office as Executive Secretary of the American Rocket Society (ARS). It was also, coincidentally, the day I turned over the job as Executive Director of the American Institute of Aeronautics and Astronautics (AIAA) to my successor, Cort Durocher. I couldn't help but reflect on some of the dramatic differences between the circumstances of the two dates 35 years apart.

The office which I relinquished at 370 L'Enfant Promenade in Washington, in AIAA's brand new headquarters building, looks out grandly through six large curved window panes at Washington National Airport, the Jefferson Memorial, the Washington Monument, the Smithsonian Institution, and one can even catch glimpses of neighboring NASA, the Congressional offices, and the Capitol itself.

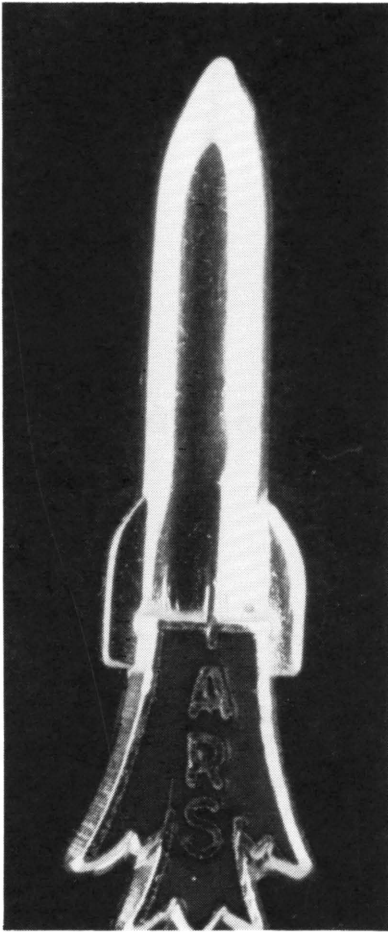
The AIAA has a \$15 million budget, a staff of 189 people in Washington, New York and Los Angeles, has 40,000 members, 63 local sections, 127 student branches, 58 technical committees, publishes 6 journals, and holds about 25 conferences per year.

When I went to work for the American Rocket Society on 3 October 1953, I entered a one-room office at 29 West 39th Street in New York, the Engineering Societies building, and joined two other employees, A. C. "Billie" Slade, the first paid staff member of ARS, who labored long and hard to make that Society viable in the late 1940s and early 1950s. Her assistant was Catherine Beck.

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<sup>1</sup> Presented at the Twenty-Second History Symposium of the International Academy of Astronautics, Bangalore, India, 1988.

<sup>2</sup> American Institute of Aeronautics and Astronautics, Washington, D.C.



## HONORARY MEMBER

MRS. ROBERT H. GODDARD



## FELLOW MEMBERS

- 1949 THEODORE VON KARMAN
- 1950 REAR ADMIRAL C. M. BOLSTER, USN  
 LOUIS DUNN, California Institute of Technology  
 G. EDWARD PENDRAY, Pendray and Co.  
 MAURICE J. ZUCROW, Purdue University  
 FRITZ ZWICKY, California Institute of Technology
- 1951 CHARLES E. BARTLEY, Grand Central Aircraft Co.  
 BENJAMIN F. COFFMAN, USN  
 EDWIN H. HULL, General Electric Company  
 CHANDLER C. ROSS, Aerojet-General Corp.  
 COL. H. N. TOFTOY, Res. and Dev. Division, Ordnance Dept.
- 1952 WERNHER VON BRAUN, Res. and Dev. Division, Redstone Arsenal  
 WILLIAM L. GORE, Aerojet-General Corp.  
 ROY MARQUARDT, Marquardt Aircraft Co.  
 JOHN SLOOP, NACA Cleveland  
 WELDON WORTH, Wright Air Dev. Center

**Figure 1** ARS lapel pin (left), and ARS Honorary Member and Fellow Members, 1952 (right).

I was hired by a Board of Directors that included U.S. Navy Lieutenant Commander Frederick C. Durant III, President; Richard W. Porter, who was then in charge of Project Hermes at the General Electric Company, Schenectady, and G. Edward Pendray, one of the founders of ARS. My starting salary was \$800 a month, a princely sum for the Harford family at the time, and I had pledged that my first efforts would be directed at generating corporate members, so that the "huge" investment in me could be covered. In fact, the total budget for the year 1953 was about \$47,000, and since my salary was almost a fourth of that, you can appreciate why it was necessary for me to generate some income.

I will always be grateful to Avco Corporation and IBM, because I remember vividly persuading those two companies to be the first Harford-generated corporate members joining a relative modest list of existing corporate members:

Aerojet-General Corporation (Azusa, CA)

Curtiss Wright Corporation Propeller Division (Caldwell, N.J.)  
Douglas Aircraft Company (Santa Monica, CA)  
Genisco, Inc. (Los Angeles, CA)  
Harvey Machine Co. (Torrance, CA)  
Haynes Satellite Co. (Kokomo, IN)  
Oerlikon Tool & Arms Corp. (Washington DC)  
Reaction Motors, Inc. (Rockaway, NJ)  
Laurance S. Rockefeller (NY)  
United Aircraft Corp. (E. Hartford, CT)

ARS had one publication at the time, the *Journal of the American Rocket Society*, edited by Martin Summerfield of Princeton University, formerly of CalTech's Jet Propulsion Laboratory. Now, 35 years later, Martin continues to be active in AIAA publications as editor of the *Progress of Aeronautics and Astronautics* series of books.

There is no question that Dr. Summerfield's assumption of the editorship of the journal was a key factor in gaining respectability for ARS. Not only did the number of high quality manuscripts begin to flow towards the society, so did new members.

Some old rocket stalwarts were very upset, however, when in 1954 the journal was renamed *Jet Propulsion* to attract research workers from not only the rocket field but from the growing ramjet and turbojet community.

One old-timer tells me that the pressure to down play "that crazy spaceflight stuff" in ARS was applied by Dan Kimball, former Secretary of the Navy and then president of Aerojet-General Corporation. Kimball's company was building rocket boosters for missiles and for aircraft takeoff assist.

Early in 1954 Fred Durant told me that I should get myself up to the American Museum of Natural History that evening, because there was to be a founding meeting of an American Astronautical Society. I should persuade them, he said, not to form a new society, but rather to put their energies into ARS. I went, made my speech with the thin background that I had on the subject and was received politely but negatively by a group of young people who were determined to form a society, expressing the conviction that ARS was too industry-oriented and too large. Large! We had about 2,500 members at the time. I recall Norman Petersen, then of Sperry Gyroscope, Hans Behm, Jim Rosenquist, Ron Wakeford, Fred Ordway and four or five others were present, and they were determined to organize AAS, which they did in my first week on the job!

I set to work starting new ARS sections and boosting membership. We got 100 applications for membership in my first month, but that was largely due to the work of the volunteers. Also during my first month there was a section formed in Waco, Texas, where the Phillips Petroleum solid rocket plant had been built. There was an organizational meeting of a Chicago section (addressed by the inimitable Kurt Stehling) and the by-laws for the Baltimore section, a split-off from the National Capital section, were submitted for approval.

Price of the Honors Night Dinner for the ARS annual convention: \$8.00. A special tour of the Hayden Planetarium was organized for \$1.25.

Invited to sit at the head table at the ARS Honors Night Dinner were Mrs. Robert H. Goddard, Dr. H. S. Tsien (later to leave the U.S. in a huff having been virtually

accused of espionage for attempting to take his own CalTech papers back with him to China, where he became a major figure in the development of nuclear weapons and delivery systems), Colonel Charles Lindbergh, Harry S. Guggenheim, James Doolittle and Laurance Rockefeller.

The attendance for that 1953 Annual Meeting was 1,060, and more than 300 people attended the Honors Night Dinner at the Hotel McAlpin in New York.

In my first full year as Executive Secretary, I had the interesting experience of serving under President Andrew G. Haley, legendary for having been the first space lawyer in the world. Mr. Haley took over with a vengeance, aiming to bring the membership in one year up to 5,000, a goal which he didn't quite accomplish, although he stimulated membership, local section development, involvement in the International Astronautical Federation, and the meetings program tremendously.

We ended 1954 with just under 4,000 members. A major staff event was the hiring of one Walter Brunke as general factotum in charge of not only meetings arrangements, but the mailroom, the member records, you name it. Walter did a fantastic job from the beginning, bootlegging services from ASME and SAE and any other society in the building that he could charm. He was so good that the board minutes for 10 January 1955 reported that he was awarded a raise of \$4.25 per week. Walter retired just this year from AIAA.

Certainly one of the principal factors in the growth of ARS during that period was a very energetic Space Flight Committee headed by Milton Rosen of the Naval Research Laboratory. Rosen had been the head of the Viking sounding rocket program and was a particularly effective engineer and manager. His committee compiled a very impressive document entitled "On the Utility of an Artificial Unmanned Earth Satellite." The compilation comprised statements on the potential effectiveness of an artificial satellite for communications by John R. Pierce of Bell Laboratories, astronomical observations by Ira Bowen of Mount Wilson and Palomar Observatories, geodesy by John O'Keefe of the Army Map Service, upper atmospheric research by Homer Newell of the Naval Research Laboratory, space biology by Hermann Schaefer of the Navy School of Aviation Medicine, and meteorological observation by Eugene Bollay of North American Weather consultants.

This was indeed a remarkable document. Although in retrospect it may seem very conservative, it was extremely far-sighted. For example, on the potential of communications satellites it said, "A satellite might provide a broad band trans-oceanic communication link. A future possibility is that of obtaining continental coverage when the satellite is used as a relay station for radio or television broadcast."

Having experienced only a few weeks ago the incalculable value of the weather satellite system in warning entire populations about hurricane Gilbert, it is interesting to note this sentence in the report on the potential of a satellite for "(Geophysics including Meteorology). The study of incoming radiation and its effect upon the Earth's atmosphere might lead eventually to better methods of long-range weather prediction."

I suggest that ARS President Andrew Haley and Space Flight Committee chairman, Milton Rosen and their committee deserve a place in history for this report, as do the people mentioned above, plus the other members of the Space Flight Committee: Harry J. Archer, William J. Barr, B. L. Dorman, Kenneth H. Jacobs, Chester M.

McCloskey, Keith K. McDaniel, William P. Munger, James R. Patton, Jr., Richard W. Porter, Darrell C. Romick, Michael J. Samek, Howard S. Seifert, Willis Sprattling, Jr., Kurt R. Stehling and Ivan E. Tuhy.

The report was transmitted on 24 November 1954 to Allen Waterman, the Director of the National Science Foundation in Washington D.C., and it was passed on to the advisors of President Dwight Eisenhower. It was, we were told, one of the persuasive documents leading to President Eisenhower's decision to authorize the development of an artificial satellite in connection with the International Geophysical Year 1957-1958. The authorization came in 1955 and, of course, it had an immense impact on rocket and space development in the United States.

Although the satellite itself, which became the Vanguard program, was a spectacular failure in its first launch, two months after the Soviets had launched Sputnik, it nonetheless made major contributions to the budding development of space technology and, therefore, of course, to the American Rocket Society.

Three months after the launch of Sputnik, and about seven weeks after the Vanguard failure, the first successful U.S. satellite, *Explorer I*, lifted into space. Several ARS members played key roles, notably Wernher von Braun, William H. Pickering and James van Allen, all ARS Fellows or Honorary Fellows. The space age was in full swing.

Even before the Sputnik success, the ARS, under President Robert C. Truax, had convened a new Space Flight Committee chaired by Krafft Ehrlicke, with the charge to study and recommend to the President of the United States a government organization which could lead the nation in space flight development.

Alas, the committee report, although drafted prior to the Russian launch, did not make its way through the system before the launch itself. A document entitled "A National Space Flight Program," a report by the Space Flight Committee of the American Rocket Society, was dated 23 August 1957, revised 10 October 1957, and transmitted on 17 October 1957 to the President at the White House. To quote a paragraph from the letter of transmittal, "these recommendations in no way represent a stop gap answer to the satellite of the USSR. Indeed the report was drafted prior to the Russian announcement. We do feel, however, that the recommendations represent a course of action which, if carried out, will insure the eventual superiority of the United States in this new field. Our Society feels that any less forthright action will not be adequate to overtake the Russian lead."

The report itself called for the creation of a new agency, "temporarily referred to as the Astronautical Research and Development Agency (ARDA)." Members of the new committee included some holdovers from the old one, namely Durant, Haley, Porter, Romick, Rosen and Stehling, but added Karel Bossart, George Clement, George Colchagoff, William O. Davis, Alexander Satin, S. Fred Singer, Hubertus Strughold and Dr. von Braun.

The report recommended a six-step space flight program "which the current state of the art would make possible even without any major technological breakthroughs in the next twenty years."

The six steps:

1. Orbital vehicles with payloads in the order of thousands of pounds within five years;
2. Payloads of one hundred to several hundred pounds placed on or about the Moon within five to ten years;
3. Payloads of several hundred pounds as far out as the orbits of the nearer planets within five to ten years;
4. Manned orbital vehicles and manned space flight between any two points on the Earth's surface within ten years;
5. Manned flights around the Moon in fifteen years, and
6. Manned two-way Moon flights, including landing within twenty years.



**Figure 2** 1957 ARS Board of Directors meeting. Front row: Andrew Haley, Harold Ritchey, Howard Seifert, S. K. Hoffman, A. C. "Billie" Slade (secretary), Robert C. Truax (president). Back row: George Sutton, James Harford (executive secretary, Martin Summerfield (editor, *ARS Journal*).

Even this ostensibly bold report was conservative since number six, a manned two-way Moon flight, predicted by 1977, actually made it in July of 1969.

The pages of *Jet Propulsion* and *ARS Journal* (*Jet Propulsion* was renamed *ARS Journal* in January 1959) are tremendously exciting reading material for a historian and deserve a special paper by itself. Suffice it to say that *ARS Journal* and the newly created *Astronautics* magazine were of crucial importance to the growth of ARS (the latter made its debut in August 1957, anticipating Sputnik by two months, under the able editorship of Irwin Hersey, joined a few months later by John Newbauer as associate editor. Newbauer is now senior editor of *Aerospace America*, was its editor-in-chief for many years and is also an administrator of scientific publications for AIAA).

ARS membership climbed from less than 4,000 in 1955 to 21,000 by 1962. Numerous new technical committees were formed. The first six, formed in 1956, mani-



fested the dominance of the propulsion field in ARS. They were solid rockets, propellants and combustion, ramjets, liquid rockets, instrumentation and guidance, and space flight. By 1956 ARS had formed 29 local sections and had some 76 corporate members. In 1955 ARS had moved its headquarters from the one-room office in the Engineering Societies building to a more commodious arrangement on the 11th floor at 500 Fifth Avenue, the staffing numbering then 11.

Very instrumental in attracting new members was the chairman of the membership committee in the late 1950s, Wernher von Braun.

Perhaps the next biggest stimulus to ARS was the decision in 1959 by the ARS Board of Directors to allow the staff to lease all four floors of the New York Coliseum for the ARS Space Flight Report to the Nation, to be held in October, 1961. SFRN was a landmark meeting. It took place the week after the 1961 IAF Congress, which was itself hosted by ARS in Washington. You can imagine what kind of staff workload was involved in organizing an IAF Congress one week, and then the largest space meeting ever held to that date in the week afterwards. In fact, many of the foreign delegations, including a large delegation of Soviets, stayed on after the IAF Congress to attend SFRN.

There are many people, including myself, who feel that the success of that meeting, which culminated in a banquet for 1,500 people at the Waldorf Astoria addressed by Vice President Lyndon Johnson, and which included a full-scale Redstone rocket in Columbus Circle next to the statue of Columbus (*Life* magazine's picture of the week), was the event which caused the U.S. aerospace industry to put pressure on the leaderships of the ARS and the Institute of the Aeronautical Sciences to merge.

As long as ARS had been a small society, getting only moderate attention from industry, it was tolerable, but when the membership reached more than 21,000, equal in size to that of IAS, and with a meetings and publications schedule every bit the equal of the IAS, the word went out in industry to create a merger.

Merger talks began between IAS 1961 President H. Guyford Stever and W. H. Pickering who was President of ARS in 1962. Task groups were formed on publications, meetings, and membership, and many, many both tempestuous and calm meetings were held by working groups, culminating in an overwhelming vote by the members of both societies in favor of a merger.

The merger, itself, took place on 1 February 1963, and a major chapter in U.S. space development was over.



**Figure 3** Signing of the merger between ARS and the Institute of Aeronautical Sciences at Wings Club, New York in early 1963 (photo reversed). Around table from left: James Harford (ARS executive secretary), Harold Luskin (IAS vice president), Robert Dexter (IAS secretary), Martin Summerfield (ARS president), Allan Emil (IAS general council), Andrew Haley (ARS general counsel).