

Retrospective on the Career of Mario A. Maury, Jr.

H. George Oltman, Jr. Life Fellow, IEEE
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Abstract - Mario A Maury, Jr., a major contributor to our microwave industry, our microwave business and the IEEE died March 30, 1995. A review is presented of his life and contributions in the context of his work ethic, his enthusiasm, and his sense of responsibility toward his family, his company, and his industry and its several technical societies.

I. Our Loss

One month after being elected vice president of the MTT Society, Mario Maury learned that he had cancer. With his usual upbeat voice, he advised the AdCom and his friends of his predicament and his expectation of beating the disease. His known cancer was removed by surgery and he seemed to be on the road to recovery. His complications were thought to be only a result of losing a large part of his stomach. It wasn't. In early March he learned the cancer had spread and before the month was out he left us.

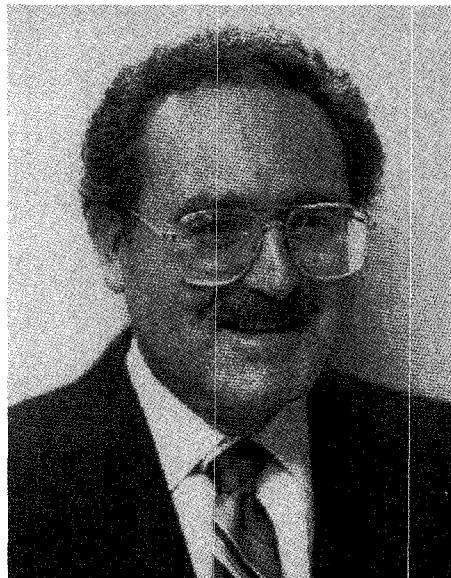
Mario was a tireless contributor to our microwave related part of the world. His passing leaves a void that will take several of us to fill. He worked hard and he played hard. His days were long and full. He had a strong sense of responsibility and worked hard at his business, at his societal tasks and at maintaining activities with his family. He approached all of his tasks and activities with enthusiasm. One wonders what in a persons background promotes such responsibility, work ethic and enthusiasm.

II. The Formative Years

Mario was born in Cuba and emigrated to New York City with his brother in 1944 when his engineer father returned to Cuba to fetch them. To care for his sons, Mario Sr. entered them in a boarding school while he worked at Sperry and lived in a small room in a nearby, rooming house. He had come to New York after separating from his wife and leaving Mario and Richard in the care of his mother. Marc stayed with his mother but was soon placed in a Cuban boarding school by her. Mario, Sr. wanted his boys with him. In New York, it was tough being an immigrant at his new school and Mario found himself frequently defending not only himself but his younger brother, Marc. From watching his father and being a big brother, Mario developed a strength of character and responsibility.

In 1948 the three moved to Alexandria and then near Mount Vernon where Mario was accepted as "one of the boys" and developed an interest in baseball and stamp collecting - sports and collecting - lifelong activities of Mario. On one occasion Mario decided to row across the Potomac River, a distance of at least three miles, in a borrowed row boat. The voyage, with Marc along, took about eight hours but Mario was determined and they made it. This may have been the first test of his determination and exhibition of his work ethic.

The family moved to California in 1950, first to San Diego where Mario, Sr. worked for Convair, and later to Pomona



Mario A. Maury, Jr. 1936-1995

when his father was transferred. Although, when in San Diego the boys spent time on the beach, Mario spent much of his time working mowing lawns and delivering papers. This probably solidified his work ethic.

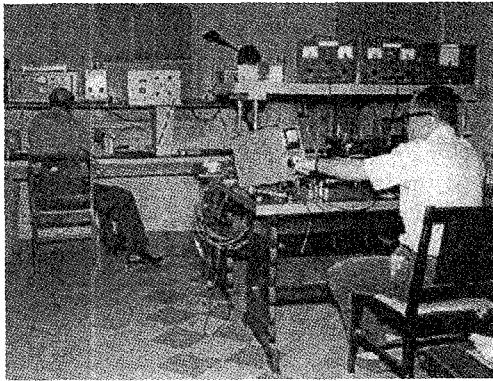
In 1954 the three made a trip to Cuba to bring Richard, the youngest Maury brother, to live with them. Their family was now complete.

When his father was transferred back to San Diego in 1955, Mario stayed in Pomona, where he worked and continued

college. At 19, he was self sufficient and putting himself through college.

The family was re-united in 1957 and in that year started Maury and Associates near the location of the current Maury Microwave company.

Mario and Marc worked to support the family while Mario, Sr.



Mario Senior and Junior at work, 1959

worked at the business. Mario worked for General Dynamics. In 1961 the business could support them and they all began working there full time.

During this period Mario met his wife-to-be, Jan, and they were married in 1960. They soon began their own family. They had four children:

Mario, born March 13, 1961
Donna, born December 18, 1962
Beth, born September 12, 1964
Michele, born April 7, 1968

The success that was beginning to be experienced was marred in 1964 when Mario, Sr died of cancer after a two year illness. Prior to his death Mario had filled in and had started running the company. At his death, Mario took over as President and guided the company to what it is today, a major player in its market: precision components and measuring equipment for measurements, calibration and test purposes.

Looking back at his youth, it's revealing to note incidents that occurred when Mario was a boy and a youth that exhibited the character that was to become the admirable traits of the man. Traits that led to the enthusiastic, responsible, hard working and social man that many of us knew and enjoyed working with.

III. Technical and Business Accomplishments

Mario was not always the able leader for his company that we knew in recent years; he too had to learn. The company struggled in the early years; Mario was the design engineer as well as

the president. The microwave filter product line initiated by Mario, Sr could not sustain the company. In the 60's, the company sustained itself primarily on one-of-a-kind components and subsystems for organizations such as JPL and Hughes. Mario developed a number of components for the Deep Space Instrumentation Facility of the JPL Deep Space Network. Some of the components developed during these years would become part of the company catalog.

In the mid-60's Mario pioneered the design of improved Type N connectors such as "blue dot" and "red dot" types for precision measurement applications. He needed these for better measurements in his own work. This may have been his first precision component in the product line.

In the 70's, Mario realized that for the company to succeed they had to diversify their customer base and develop a standard product line with a catalog. That was to be the focus of that decade but he also continued supporting one-of-a-kind systems which led to more components suitable for the catalog. The company's first real catalog was created in this period.

Although Mario was a successful leader, he was more of an engineer than a leader. He suffered from a trait commonly criticized by managers: optimizing a task to perfection rather than optimizing to cost. This trait was initiated by the quality standards set earlier by Mario, Sr. and reinforced by the reliability required by JPL for its Deep Space Network. Mario believed that a design should be done right and done once. He worked long and carefully on each design to assure that result. This approach naturally led the company into precision, quality components needed by calibration and standards users.

The automatic network analyzer systems introduced by Hewlett-Packard in the early 70's was a fast growing business and its users needed quality calibration standards. Recognizing this, Mario designed a line of calibration kits which captured the market. Mario designed kits in waveguide to 110 GHz and in coax to 40 GHz. With this success and the growing business in catalog precision coax and waveguide components, the company was able to take on more staff in all departments: engineering, production and marketing. There are 3397 products in the Maury catalog; Marc Maury believes Mario had a hand in the design of most of them.

In the 80's, the business continued to grow. During this decade it reached its peak employment of 110 and sales of about \$8 million per year. Also during this decade, Mario entered into special relationships with Hewlett-Packard and other customers. With HP he entered into a favored supplier contract; HP was completing the development of the HP-8510 vector automatic network analyzer and needed calibration kits to support the analyzer. Maury Microwave supplied the need kits giving them an HP label. This relationship enabled HP to reduce the time to market these revolutionary analyzers.

The list of Mario's technical accomplishments is long:

- * Designed a broad variety of microwave passive components in coaxial, waveguide and stripline structures from DC



Mario marketing at the European Microwave Conference wearing his MTT tie.

to 110 GHz.

- * Designed calibration verification standards for network analyzer calibration in coax and waveguide up to 110 GHz.
- * Developed concept for improved millimeter waveguide flanges for precision measurement applications realizing significant performance improvement.
- * Designed and produced the first 40 GHz mode-free coaxial connector in 1973 followed by a 60 GHz connector in 1974.
- * Developed noise calibration equipment (hot/cold, ambient loads) used in the DSIF DSN and commercial tracking stations as well as laboratory applications.
- * Provided technical and marketing direction in development of major new products: transistor test fixtures and calibration standards, automated tuner systems, noise measurement equipment, etc.

During the period of this work it was not unusual for Mario to work 12 to 14 hours/day and 7 days/week. Mario published or presented over 40 technical papers on his work. Not all were on his designs; some were philosophical papers resulting from his work on various standards committees of societies; for example, papers discussing the approach to be taken in development of a particular standard.

IV. Service to Industry and Societies

Mario had a strong supportive commitment towards the microwave industry and the technical societies that intertwine with it. He participated on many industrial and societal committees for the betterment of that community.

Mario is a Senior Member of the IEEE, a member of the Microwave Theory and Techniques and the Instrumentation and Measurements Societies, and an Honorary Life Member of the

Automatic RF Techniques Group. He joined the IEEE in 1968. His first active participation in these organizations appears to be in 1977. He recognized that these organizations focusing on the microwave market place were where the action was.

Service to Industry

Mario's first service was on an industrial committee of microwave company presidents and notable persons working in the standards community. This group created itself to attempt to counter the proposed plan of the Congress to reduce or terminate the National Bureau of Standards. The group saw the standards organizations of other nations growing and establishing standards that affected the US industry. They saw the proposal of the Congress as a threat to the economic well being of US industry.

To increase their stature in order to better motivate the Congress to heed their advice, Mario as Secretary/Treasurer approached the MTT AdCom to solicit support their thrust. The AdCom agreed to and made the group an ad hoc committee of the MTT-S, The Committee to Promote National Microwave Standards (PNMS). The committee developed their supportive arguments and alternative plans in cooperation with NBS management, and made presentations before congressional representatives. They were only partially successful, but the NBS may have been worse off without their effort. The effort did establish a stronger tie between the NBS and industry.

MTT-S Service

The result of Mario's exposure to the AdCom when reporting on PNMS was his election to that body in 1985. He went to work immediately. During his tenure, he served as chairman of several committees and left each better organized and more responsive to the AdCom or membership. His MTT committees include:

- As Chairman: Membership Services
Meetings and Symposia
Publicity
TC-12, Automated Measurements
- As Member: PNMS (Founder, Secretary)
TC-11, Microwave Measurements
Hertz International Committee
Site Negotiating Committee
MMMC/Expanded Microwave Week
Long Range Planning Committee
ARFTG Liaison
AdCom Rep, IEEE R&D Committee
Reviewer, MTT-S Transactions

Mario left the Membership Services Committee more responsive to the membership by creating subcommittees on International Chapter Liaison, Chapters Officers Handbook, Chapter

Communications, Student Membership Development, and Special Technical Articles. While Meetings and Symposia chairman, he introduced subcommittees on Domestic Conferences, International Conferences, Symposium Operations Manual, Symposium Accounting and Audit, and University Exhibiting. To fill these subcommittee offices, Mario brought motivated, enthusiastic new faces into the AdCom. Many of these faces are now elected members of AdCom.

Had Mario lived to become MTT-S president, he may have taken the AdCom to another higher level of performance serving the membership.

Mario also served on other ad hoc committees:

- * Aiding Eastern Europe and Former Soviet Union, and
- * Negotiate a European Session at IMS and a U.S. Session and European Microwave Conference.

Mario also was very supportive with his time and effort on the MTT/S' International Microwave Symposiums (IMS). He has served on three IMS Steering Committees:

- 1989: Chairman, Publicity Committee
- 1994: Chairman, Special Sessions
- 1999: Chairman, IMS Steering Committee

In addition he has chaired an IMS session on High Frequency Coaxial Connectors in 1984, and sessions on Microwave Measurements in 1986 and 1993.

ARFTG Service

Before his intense activity with the MTT-S, Mario was deeply involved with the Automatic RF Techniques Group (ARFTG). He was elected to the Executive Committee in 1979, the first "vendor" to be so honored. At that time, the ARFTG was a group of users of automatic network analyzers (ANAs), presenting papers and exchanging data, but originally organized to speak with a stronger voice to Hewlett-Packard, the only producer of ANAs. HP had been viewed as not been adequately responsive to the needs of the users. By association, all vendors of ANA related equipment were similarly viewed. Mario representing another vendor, overcame that "stigma" because of the interest and support he showed and, within two years was elected president of the ARFTG.

During his tenure, Mario was pre-eminent in changing the organization from a loose group of mellowed dissidents into a society. He led the reorganization of the group creating several functional committees to more effectively carry out the group's historical activities, and to carry out new activities such as budgets, nominations, exhibits, and awards for service and best paper. For his exemplary service, in 1983 Mario was awarded the ARFTG Distinguished Service Award, the group's highest service award. In the early 90's he received additional ARFTG

honors, he was elected an Honorary Life Member for his continuing service. Later they recognized his many contributions to the microwave measurements technology and awarded him the ARFTG Automated Measurements Career Award.

Mario's service to ARFTG is extensive:

- 1979 to 1986: Member, Executive Comm.
- 1980 to 1982: ARFTG President
- 1982: Conf. Chair, 20th Conf.
- 1982 to 1986: MTT-S Coordinator
- 1983 to 1984: Publications Chairman
- 1985: Host, 26th ARFTG Conf.
- 1985 to 1986: Exhibits Chairman
- 1984: Tech. Prog. Chair, 23rd

At various times, Mario was also chairman of committees for Elections, Publicity and Awards.

Other Service

Mario as one might expect was active in volunteer work for organizations regulating measurements and standards; after all, instruments and measurement components are the primary Maury Microwave products. He was a member of the P287 Subcommittee for Precision Coaxial Connectors of the Instruments and Measurements Society. Also, he was a Technical Expert on the U.S. National Committee of the International Electrotechnical Commission (IEC) - SC46D on RF Connectors. Both of these groups are concerned with the standardization of coaxial connectors. In 1984 he chaired the workshop on "High Frequency Coaxial Connectors - 40 GHz and Beyond" held at the 1984 IMS in San Francisco.

He was chairman of the IEEE P1179 Committee on Precision Waveguide Flanges; a member of the RF and Microwave Metrology Subcommittee of the National Council of Standards Laboratories (NCSL); and finally, he was a member of the Editorial Review Board of the Microwave Journal.

V. Reflections

After reading this long list of activities and accomplishments, one wonders how Mario did it; how did he keep his motivation? He must have loved what he did and his reward was a job well done. He leaves us with good memories. His output was prodigious; he ran an \$8 million company participating closely in operations and engineering as well as managing. He participated in marketing, exhibiting at the IMS, meeting customers, small and large, and forging relationships with some of those he met to promote his company but also to promote industry and the MTT-S. He thought about the committees he chaired and added to their capability and service. He accomplished a lot and it will take several of us to replace our loss.